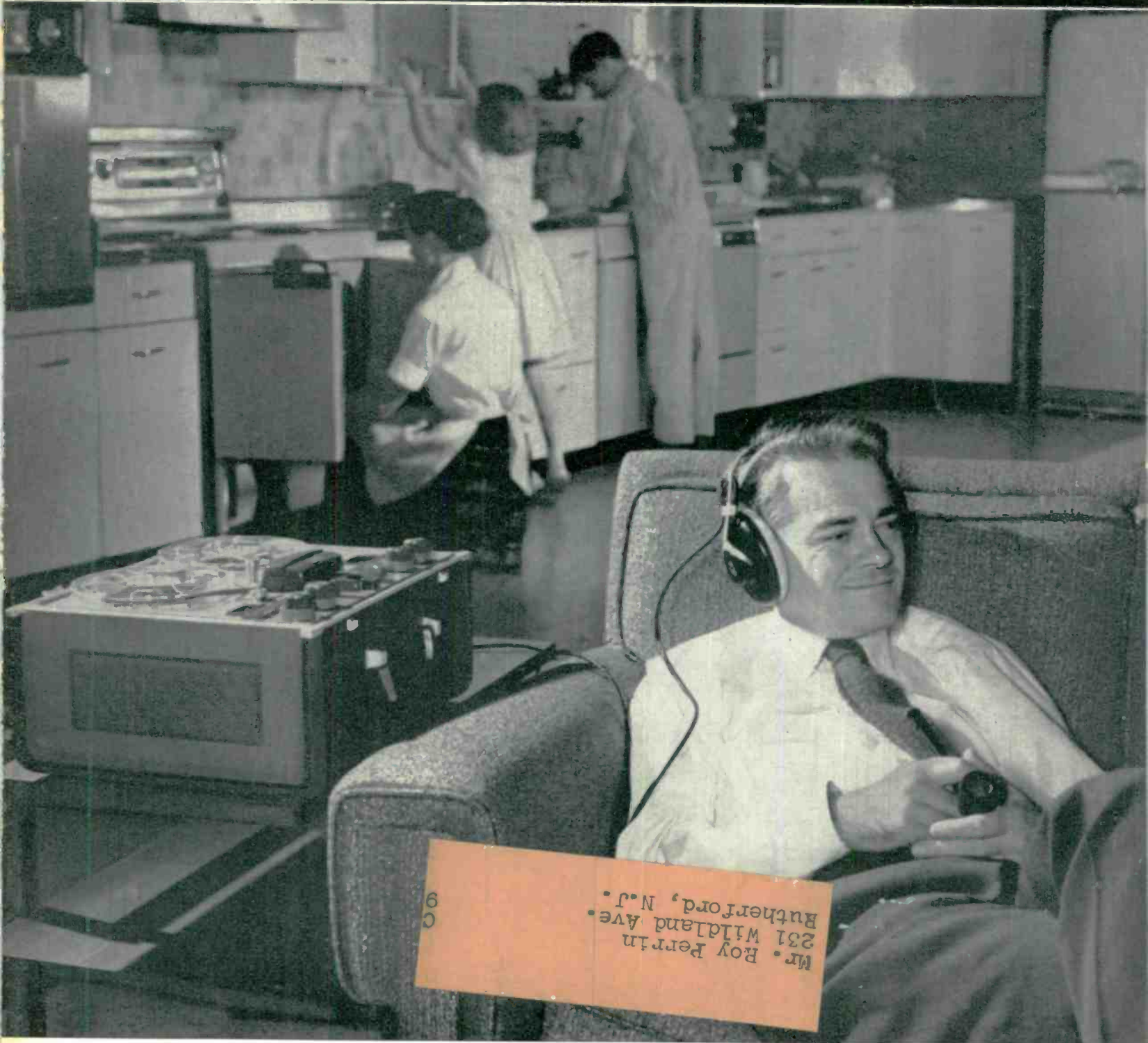


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November, 1960

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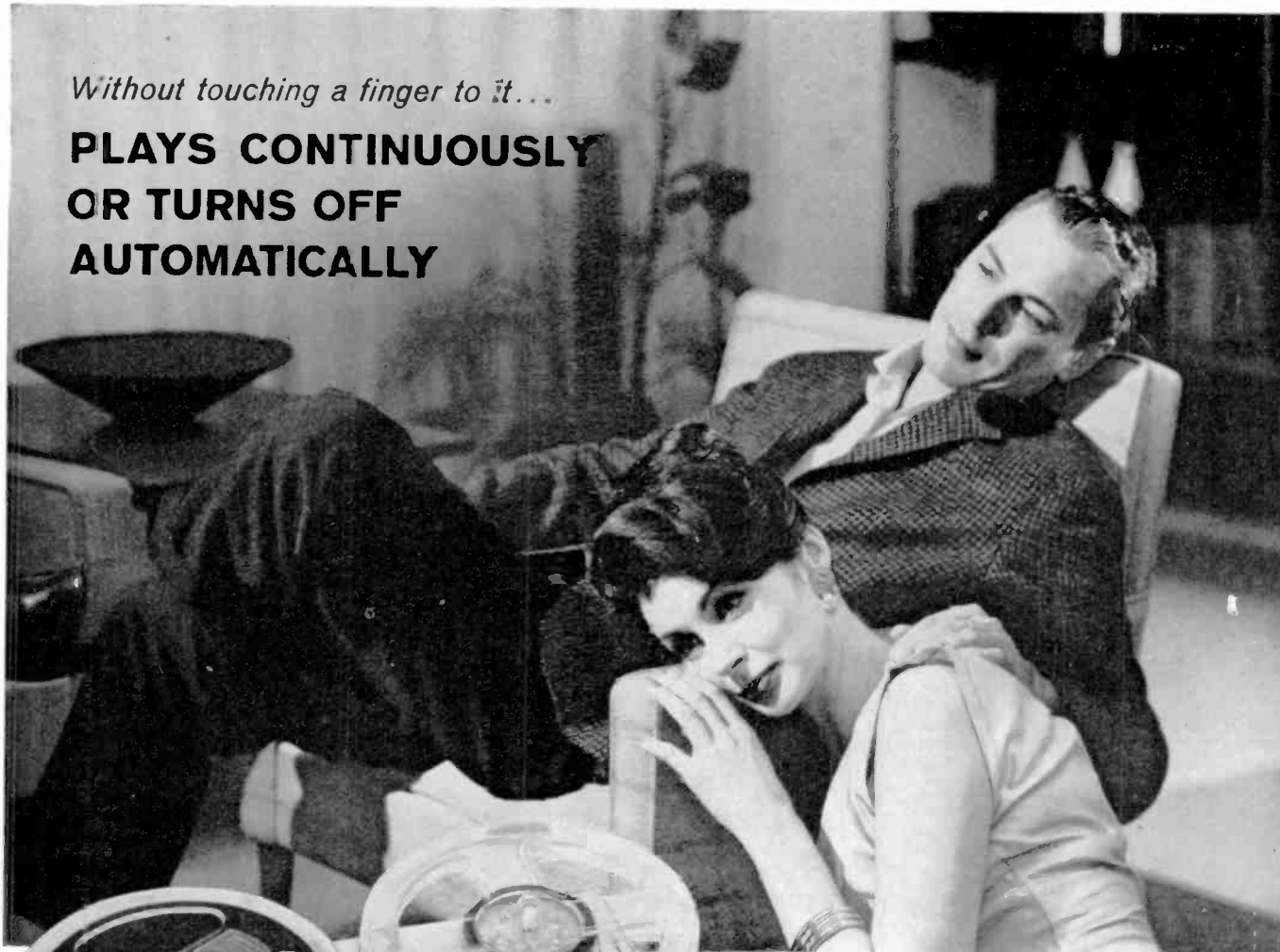
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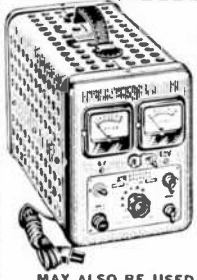
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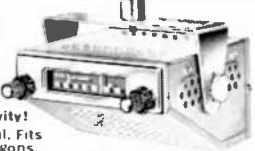
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TAPE RECORDING

VOL. 7 NO. 12 NOVEMBER, 1960

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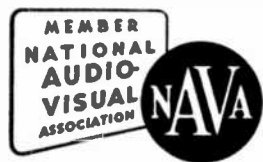
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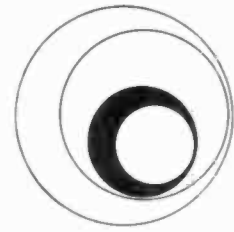
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CLASSICAL



Music ★★★★★
 Performance ★★★
 Fidelity ★★★
 Stereo Effect ★★★

BRAHMS: Violin Concerto in D, Op. 77

TCHAIKOVSKY: Violin Concerto in D, Op. 35

Erica Morini, violinist, with the Philharmonic Symphony Orchestra of London conducted by Artur Rodzinski

WESTMINSTER SONOTAPE WTP 125

4 track, 7½ ips
 \$11.95...75 min.

A fine coupling of two of the greatest violin concertos, played by Erica Morini, who is undoubtedly the leading woman violinist of our time. I've always considered her performance of the Tchaikovsky to be nearly definitive. She recorded it some years ago with the Chicago Symphony Orchestra conducted by Desire Defauw for Victor, a recording available once on the Camden label. This was a spectacular solo performance, recorded with boomy, though not unpleasant, orchestral sound. It is unfortunate that just a little of this resonance couldn't be added to this new recording, for it is exceedingly dry, with "boxed-in" sound. Morini's performance here is superb, but subjected to a microscopic perusal which in this dry acoustical setting, with the violin way out in front of the orchestra, is not always complimentary. Evidently the Brahms was recorded at the same time as the Tchaikovsky, for the sound is similar.

Stereo effect is pleasing, with crystal clear orchestral definition. If the sound were not so dry, this would be a highly recommended tape, despite the prominence of the solo violin.—Robert E. Benson



Music ★★★
 Performance ★★
 Fidelity ★★
 Stereo Effect ★★

DVORAK: Symphony No. 4 in G, Op. 88
 Bamberg Symphony Orchestra conducted by Jonel Perlea

DVORAK: Symphony No. 5 in E Minor, Op. 95 "From the New World"

Bamberg Symphony Orchestra conducted by Heinrich Hollreiser

VOX 709

4 track, 7½ ips
 \$9.95...85 min.

Dvorak fares better here with Perlea than he does with Hollreiser, the beautiful *Symphony No. 4* receiving a warm, relaxed performance. The more familiar "*New World*" *Symphony* is played rather matter-

of factly, and Hollreiser is up against some stiff competition. Although it isn't indicated on the label, this tape also includes Dvorak's *Carnival Overture* with Perlea conducting.

The sound is very spacious, best in the *Fourth*, but both have rather mixed-up directionality, with shrill strings and unclear brass. This is the only stereo tape currently available of the *Symphony No. 4*, although there was at one time a version on AV tapes with Thor Johnson conducting the Cincinnati Symphony—an enthusiastic performance recorded in superb stereo sound. The London four-track tape of the *Symphony No. 5* is superior to the Vox, but it is coupled with an inadequate version of Dvorak's *Symphony No. 2*. It is advisable to wait, with the hope there may be more suitable couplings. Now, to get Perlea's acceptable *Fourth* you must also take Hollreiser's routine *Fifth*; and to get Kubelik's good *Fifth* you must take his mediocre *Second*.—Robert E. Benson



Music ★★★
 Performance ★★★
 Fidelity ★★★
 Stereo Effect ★★★

TCHAIKOVSKY 1812 Overture

RAVEL Bolero

Morton Gould Orchestra and Band

RCA KCS 3004

4 track cartridge, 3¾ ips
 \$6.95...29 min.

Big, overly resonant recordings, sonically impressive in a massive way. The reproduction is about the best I've heard on a 3¾ ips tape cartridge, with ample stereo spread and depth, and a minimum of tape hiss. Gould conducts these two warhorses with all the stops out, but the orchestral playing could be better; for example, the trumpets aren't quite together at the end of the *1812 Overture*. The cannon is a big blast of sound, reverberant to the nth degree, and bells are added, both naturally and artificially. All of this cacophony will doubtless please the hi-fi enthusiast.

For a spectacular *1812 Overture* which doesn't have to rely on cannons and electronic gimmicks for effect, listen to the monophonic Epic disc (LC 3008) with Paul van Kempen and the Concertgebouw Orchestra. But if stereophonic sound spectacle is what you want, or you're looking for a conversation piece, the Gould tape will serve your purpose very nicely.—Robert E. Benson



Music ★★★★★
 Performance ★★
 Fidelity ★★★
 Stereo Effect ★★★★★

PROKOFIEV: Symphony No. 5 in B Flat Major, Op. 100
 London Symphony Orchestra conducted by Sir Malcolm Sargent
 EVEREST T4-3034
 4 track, 7 1/2 ips
 \$7.95...43 min.

This is considered to be Prokofiev's finest symphony. Serge Koussevitzky, who conducted the first American performance in 1945, described it as "one of the greatest symphonies of our generation." This music has no set program, although Prokofiev did indicate that it is about "the spirit of man."

This is a good performance and the London Symphony plays well, although Sir Malcolm Sargent might have put more tension into the performance. Under his easy-going direction the work loses some of its bite, with the sardonic edges rounded off.

The recording is spacious and deep— one of Everest's best, with some extraordinary bass, and ideal separation. Listen particularly for the interplay of string sound in the Scherzo as an example of superb stereo sound. This recording was heard in both the two and four-track versions, and there is no difference between them except that the two-track version costs three dollars more.—Robert E. Benson

POPULAR



Music ★★★★★
 Performance ★★★★★
 Fidelity ★★★★★
 Stereo Effect ★★★★★

ELLA SWINGS LIGHTLY

Side 1: Little White Lies, You Hit the Spot, What's Your Story, Morning Glory, Just You Just Me, As Long As I Live, Teardrops From My Eyes, Gotta Be This or That, Moonlight on the Ganges

Side 2: My Kinda Love, Blues in the Night, If I Were A Bell, You're An Old Smoothie, Little Jazz, You Brought A New Kind of Love To Me, Knock Me A Kiss, 720 in the Books

Ella Fitzgerald
 VERVE VSTC-222
 4 track, 7 1/2 ips
 \$7.95...49 mins.

Here are 15 delightful songs and 49 minutes with Ella Fitzgerald that should keep you enraptured from beginning to end. Ella uses her voice like a musical instrument of great range and tonal beauty and with such skill and seeming ease that at least some of the listening pleasure is derived as much from how she sings as what she sings.

For the most part all of the songs are handled with a kind of quiet and sophisticated restraint but there is always the feeling that Ella is going to tear loose and let herself go. This she really does in "Just You Just Me" and "Little Jazz."

The orchestra, under Marty Paich, does an excellent supporting job in supplying the appropriate musical accents with real skill and finesse. All in all, it's a wonderful tape and well worth having.

Technically, the tape is equally as super-

SOUND TALK



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lative as the performer. If your equipment is in good shape and speakers well balanced, Ella will be right there in the center, real as life.

Pay particular attention to the beginning of the first number, no music, just Ella singing the first five words, starting in its realism and then one by one the orchestra assembles itself around her. You have to hear it to appreciate it.—C. Parody

JAZZ



Music ★★★
Performance ★★★★★
Fidelity ★★★★★
Stereo Effect ★★★★★

TIME OUT

Blue Rondo a la Turk, Three to Get Ready, Kathy's Waltz, Take Five
The Dave Brubeck Quartet

COLUMBIA GCB 72
2 track, 7½ ips
\$6.95 . . . 22 mins.

Although you may not fully appreciate the technical intricacies of jazz and jazz styles, you will find this tape highly entertaining and intriguing.

The explanatory notes on the cover liner, by Steve Race, will be helpful in developing an appreciation and understanding of why this music has such fundamental appeal to so many people.

Technically, this is an excellent tape in all respects and for the ardent jazzophile this will also include the music. However, for the rest of us, and this may be a minority including myself, let's just say the music is very good.—C. Parody

SHOWS



Music ★★★★★
Performance ★★★
Fidelity ★★★
Stereo Effect NONE

THE KING AND I

Side 1: Overture, I Whistle A Happy Tune, My Lord and Master, Hello, Young Lovers, The March of Siamese Children, A Puzzlement
Side 2: Getting To Know You, We Kiss in a Shadow, I Have Dreamed, Shall I Tell You What I Think of You?, Something Wonderful, Song of the King, Shall We Dance? Something Wonderful (finale)
Original soundtrack, 20th Century Fox Cinemascope

CAPITOL ZW 740
4 track, 7½ ips
\$7.98 . . . 46 mins.

To refresh your memory, this original soundtrack contains the vocal efforts of Deborah Kerr, Yule Brynner, Rita Moreno, Terry Saunders, and Carlos Riuas.

This apparently is from the same master used to produce the monophonic Capitol disc W740 back about 1956.

The fact that both the tape and the disc bear the same catalog number except for the additional Z prefix seems to confirm this. This unimportant and incidental information is leading up to the fact that this tape appears to be a two channel recording of the original. There is no indication of stereo depth or separation and quickly switching between channels reveals no difference in either level or content.

Unless I am mistaken, this is not technically stereo, however, I am still glad the tape is available. Comparison with the original disc referred to above produced convincing evidence that the songs and music are much more enjoyable, without the hundreds of scratches that even the best cared for record seems to accumulate.

And now having put the cart before the horse, let's keep backing up to the beginning. The fidelity is very good, real hi fi, and superbly recorded. Performance is a matter of historical record and it is doubtful that any subsequent release will ever equal the inspired performance of the motion picture cast. The music, well, its Rodgers and Hammerstein and too well known by this time to require further comment.—C. Parody

NEW TAPES RECEIVED

REEL-TO-REEL

Angel, Soviet Army Chorus & Band, conducted by Col. Boris Alexandrov, ZS 35411, 4 track, 7½ ips

Bel Canto, Golden Age of the Dance Bands, played by the poll winners of 1940, ST-91, 4 track, 7½ ips

Capitol, Only the Lonely, Frank Sinatra, ZW 1053, 4 track, 7½ ips

Capitol, Satin Brass, The George Shearing Quintet with Brass Choir, ZT 1326, 4 track, 7½ ips

Columbia, Fanfare, Nato Tattoo Arnhem, GCB 71, 2 track, 7½ ips

Design, The Incomparable Hildegard, 4T-4T-27, 4 track, 7½ ips

Everest, The Music of Richard Rodgers & The Music of Harold Arlen, Poliakin conducting his orchestra and chorale, T-41066, 4 track, 7½ ips

Livingston, Livingston Masterpieces, Strauss, Dukas, Beethoven, Bizet, Verdi, Tchiakovsky, 4T-100-1, 4 track, 7½ ips

RCA, Vive La Difference, Marjorie Meinert at the Lowery Organ, FTP-1007, 4 track, 7½ ips

Verve, Louis Under the Stars, Louis Armstrong, VSTC-208, 4 track, 7½ ips

Westminster, Grofe, Grand Canyon Suite, Gershwin, Piano Concerto in F, The Utah Symphony conducted by Maurice Abravanel, WTP-136 (Twin-Pak), 4 track, 7½ ips

CARTRIDGES

RCA, Della By Starlight, Della Reese, KPS 3108, 4 track, 3¾ ips

RCA, Greenwillow, The Melachrino Strings, KPS 3114, 4 track, 3¾ ips

SMS, Flower Drum Song, C2, 4 track, 3¾ ips



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CROSSTALK

from the Editors

IN THE FEEDBACK column of this issue is a letter from a gentleman who has a legitimate beef. He wants to buy tapes but he wants to hear them before he buys them . . . dealers refuse to play them for him—so there they sit—one fellow with a fistful of money and the others with shelves full of tape.

* * * * *

THE "DEMONSTRATION" OF MUSIC always has been a problem, especially with phono discs which are subject to wear and damage. Yet many phono dealers do have listening booths or other types of demonstrators and have had for years, even though the discs do wear.

* * * * *

UNITED STEREO TAPES has made an effort to crack the demonstration problem by offering dealers a low cost demonstrator. But even this will not do the trick if the dealer refuses to play any tapes.

* * * * *

TO SOME EXTENT, the reviewing of tapes and discs by reviewers offers a guide to those which are of good quality and those which are not. But even at best, this can be but a guide for one man's music is another man's noise. And it is not unusual to find reviewers in disagreement now and then. Music likes and dislikes are very personal things.

* * * * *

WE DO NOT KNOW the name of the dealers mentioned in the letter but they certainly are not trying to sell tapes very hard. Music on tape is the only kind of recorded music which can be demonstrated without damage. Stereo records offer a terrific problem in this respect for unless the very finest of equipment and the best of care is used, they begin to deteriorate after very few plays—and no one wants to buy a "second-hand" record. Tapes, on the other hand, may be demonstrated and demonstrated and still are as good as when they were first removed from the package. Unless one is broken through careless handling, which is unlikely, no harm can come from playing them. Even a broken and repaired tape would be snapped up at a reduced price so the dealer could be sure of recovering his original cost. A good splice never hurt anything. A broken disc is worthless.

* * * * *

WE FAVOR THE METHOD used by Bob Bryant, owner of Lubbock Radio in Lubbock, Texas, one of the pioneer tape dealers in the nation—and one of the most progressive. He also sells stereo records and keeps a double browser of records on which he also has tapes. When customers request to hear a certain LP, he declines the request, explaining the possibility of dust in the grooves and just plain wear to the disc that is subject to review playing. He then pulls from the shelf the same item on tape (which most customers assume to be more fragile and expensive) and offers to play that for the customer. This, of course, leads to all sorts of wonderful things in showing the recorder and the general tape discussion which also follows.

* * * * *

IT IS INTERESTING TO NOTE that when recorder sales slumped a season or so ago, tape pioneer Bob Bryant didn't even experience a drop in business.

* * * * *

THERE SHOULD BE A MORAL in here somewhere.

* * * * *

GERMAN DISC INDUSTRY worried about drop in pop single record sales blames slump on people taping music from air. Took case to court against Grundig which had been advertising that machines could be used this way and convinced court that firm should be made to stop such advertising. During period that pop singles fell off, classical music sales increased 20%. Court apparently took no account of shift in public music tastes and recorder firm was scapegoat for drop in record sales! Industry now talking about imposition of fee on all recorders to cover any music taping off air in Germany. Idea could be more fantastic, but not much.

* * * * *

FOOD FOR THOUGHT DEPT. Public is used to word "record" for canned music. Why doesn't industry stop using term "Recorded Tape" or "Pre-Recorded Tape" and switch to "Tape Records"? Thus we would have two forms of the same thing—a "disc" record or a "tape" record. Might as well make use of firmly established word in the public mind.

INDUSTRY NEWS

STEREOPHONIC MUSIC SOCIETY will issue five reels of music at the 1 7/8 ips speed for those machines which have that speed incorporated. Reels will run about 100 minutes each. SMS also plans to enter the field of educational tape distribution, in addition to its line of musical tapes.

MAGNETIC SHEET use growing in Japan with Victor of Japan planning to start the selling of a "Victorphone" device for home and office use.

NORELCO is marketing the "Auto Mignon" a record player that is hooked to the car's car radio. Operation is automatic after record is placed in slot. 45 rpm records with large hole are used. Motion of car is said to have no effect on playing.

BELL SOUND breaks ground for new facility in Worthington, a suburb of Columbus.

ROBINS Industries has established a new research and development division to better service tape accessory requirements in the fields of electronics and missiles.

REEVES SOUNDCRAFT has issued a complete Instrumentation Tape Literature File for engineers or users of instrumentation tape. Information is also included on firm's new tape manufacturing plant and new exclusive manufacturing process. Copies may be obtained from Reeves Soundcraft, Great Pasture Road, Danbury, Conn. attn. Advertising Dept.

BEL CANTO adds five new labels to their library including Stereodiddies, Dooto, Argo, Disneyland and Strand.

REPUBLICAN AND DEMOCRATIC COMMITTEES will get an earful through scheme co-sponsored by REEVES SOUNDCRAFT and CAMERA CRAFT, a New York dealer. Dealer has set up two recorders and customers can record comments on conduct of campaigns. State committees will listen to tapes and forward suggestions to national committees. Plan will be extended if it works in New York City.

HOPE BORROWS, secretary of Irv Rossman of Pentron Sales, was featured in an ad for Today's Secretary magazine in a series "Meet the Woman in the Team at the Top." Mrs. Borrows was also honored by the MRIA for her long continued service to the magnetic recording industry.

MINNESOTA MINING has produced a tape on the effectiveness of electronic classrooms. The tape is to aid educators and copies are available at \$1.50 each to schools and teachers. Write Box 3300, St. Paul 6, Minn.

ASTRO-SCIENCE parent firm of American Electronics (Concertone) has named Richard Bamberg as VP in charge of marketing. He was formerly marketing director of Admiral Corp.

Omission

We neglected to publish a caption for the cover picture which appeared on our October issue, and we submit our apologies. The photo was of a Soundpac Electronics Corp. language laboratory installation at Marygrove College in Monroe, Michigan.

RECORD 4 HOURS... play back immediately on battery-operated, pocket-size

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WORLD'S SMALLEST PUSH-BUTTON RECORDER

Imagine! On the Minifon P 55L you can now record up to 4 hours on a single magnetic wire spool no larger than a silver dollar—or on the Minifon Attache', up to one hour on a magnetic tape magazine, smaller than a post card.

You can record anywhere—on the go—car—plane—train—hotel—home—office. You can record conferences—interviews—reports—speeches, etc.

MINIFON IS THE ONLY LINE OF POCKET-SIZE, FULL FEATURE RECORDERS!

All are pocket-size, battery or AC operated—with automatic push-button control. Available are ear phones and foot pedal control, special microphones for every recording need, speakers for play back to large groups. MINIFON can be used in conjunction with your present recording equipment. You can re-use magnetic tape or wire thousands of times!



MINIFON P55 RECORDER World Famous! Up to 4 hr. recording and playback on a single reel of magnetic wire, anywhere, anytime. Size: 3 1/16" x 6 1/16" x 1 1/16" — Weight: 1 3/4 lbs. Many specialized accessories available.



MINIFON ATTACHE' New!

The ideal all-in-one machine for recording, dictating and transcribing. 60 or 30 minute instant load magazine-tape. Fast forward-fast rewind. Stop-start microphone. For the man-on-the-go. Also for office use.

Size: 3 1/16" x 6 1/16" x 1 1/16". Weight: 2 1/4 lbs.

WRITE OR WIRE FOR DETAILS!

DEALERS—a few
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Please send complete information on MINIFON RECORDERS.
for Our Own Use Dealer Franchise

Name _____

Name of Company _____

Address _____

City _____ State _____

Primo

STABLE PERFORMANCE AND UNIFORM QUALITY

Primo Dynamic Microphone is now being used by 70% of general tape recorder manufacturers in Japan and gaining a high reputation.

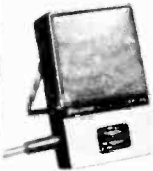
DM-3

DM-4

DYNAMIC MICROPHONE UNIT DM-3, DM-4

Among the every kind of dynamic microphone units we are selling the DM-3, DM-4 are one of the most popular. This really excellent microphone units are now being installed into the microphone cases of the majority of tape recorder manufacturers in Japan, resulting in a complete and perfect tape recorder microphone. Frequency response: 70-10,000 c/s ± 3 dB available Unit Impedance: 40 ohm.

Technical electronic "Know-how" put to practical use in various types of dynamic microphones.



DYNAMIC MICROPHONE WITH VU METER
for Recording-level monitoring

DM-194



DYNAMIC MICROPHONE WITH TELEPHONE COIL
for Transistor Tape Recorder & Office use recorder.

Dimensions:
56m/m (height) X
40m/m (width) X
20m/m (thickness)

DM-173-T



HIGH EFFICIENCY TAPE WITH IMPEDANCE SWITCH SYSTEM DYNAMIC MICROPHONE

DM-172

SPECIFICATIONS
Frequency response: 50-10,000 c/s ± 3 dB
Sensitivity: -73 dB, 600 ohm at 1,000 c/s
Impedance: 400 ohm or 50 k-ohm convertible
Dimensions: 55(dia) X 118*mm
Directional Characteristics: Non Directional

PRIMO COMPANY, LTD.

2043 MURE, MITAKA-SHI, TOKYO, JAPAN

NEW PRODUCTS

BALSYNCR SYNCHRONIZER



Bausch & Lomb Incorporated, Rochester 2, New York, markets a Balsync synchronizer for slide projector-tape recorder synchronization. The Balsync principle utilizes one channel of a stereo tape for the commentary and the second channel provides the signals which, by means of the Balsync, close the remote control circuit of a Balamatic Slide Projector. The signal duration is approximately 0.25 seconds. This duration was chosen so that dependable forward operation would result in the Balamatic Model 300, 305, and 500. The Balamatic 755 utilizes a dot/dash system for forward/reverse operation. A short hold on the remote control cord or pushbutton will change the slide sequence forward, whereas a longer hold will produce a reverse change sequence. In order to provide forward operation only, the secondary of the relay utilized in the Balsync has a built-in closure of 0.25 seconds. For all details and price, write to the manufacturer.

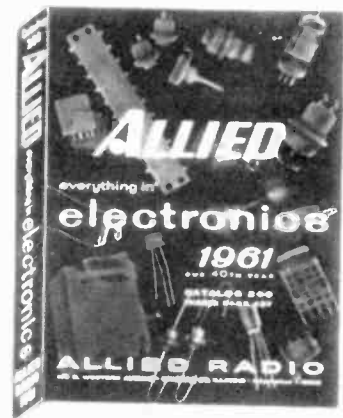
NEW REVERE



The newest member of the Revere Camera Company line of tape recorders is the T-2200 stereophonic tape recorder, a 4-track, dual speed recorder. This machine incorporates two separate channels to permit playing 2 or 4 track recorded stereo tapes. In reproducing stereo, the wide range speaker in the recorder carries one channel,

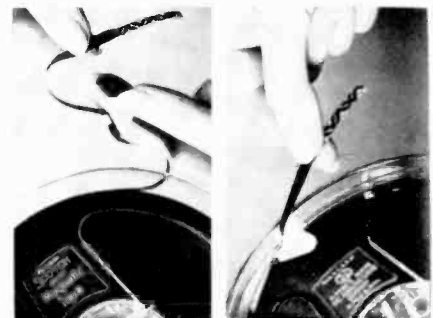
while the built-in preamplifier on the second channel allows connection directly to record player jack of phono, radio, TV or hi-fi system to reproduce the second channel. The T-2200 can be used as an 8 watt public address system. Other features include: automatic stop, one three-position control to operate all mechanical and electrical functions, balanced-tone, instant stop button, dual speed selector on front panel, two-level record indicator, rapid-forward speed, index counter, and appliance power outlet. Cost \$239.50. Write for more information on this machine to manufacturer.

1961 ALLIED CATALOG



Allied Radio Corporation, 100 N. Western Ave., Chicago 80, Illinois, has announced the release of its 1961 general catalog. It lists over 40,000 items and special emphasis is placed upon stereo and monaural high fidelity music systems for the home. There is a large selection of sound equipment and a greatly expanded hi fi section. Latest tape recorders and recorded tapes are listed, as well as disc releases. An expanded line of Allied Knight kits is shown. Complete parts listings feature everything needed for construction and maintenance of sound, phono, recording and home music systems. A copy of the 1961 electronics catalog will be sent without charge upon request. Write Allied for your copy.

SCOTCH TAPE CLIP



Minnesota Mining and Mfg. Co., 900 Bush Ave., St. Paul 6, Minn., has developed a plastic clip that slips smoothly between the flanges of tape reels to hold loose ends securely in place. Called the "Scotch" brand tape clip, the thimble-sized product is being merchandised in packages of 10 at a retail price of 35¢. Molded of polystyrene plastic, this triangular-shaped accessory is sturdy yet flexible. All edges are tapered and smooth to prevent scratching the tape. It fits standard quarter-inch recording tape. Contact the manufacturer for additional information.

NEW 4-TRACK STEREO RECORDER



American Concertone, Inc., 9449 West Jefferson Blvd., Culver City, Calif., is marketing its new 505-4 four-track stereo recorder. A flip of the channel selector switch converts the machine to a single channel, ¼ track, monaural recorder. The head complement and associated circuitry permits multiple track, sound-on-sound recording. It plays ½ track, full-track, 2-track and 4-track tapes. Tape speeds are 3¾ and 7½ ips, frequency response is 30-20,000 cps at the faster speed, flutter and wow is less than 0.2 percent at the faster speed, and signal to noise ratio is 50 db. The price is \$495. Contact the manufacturer for full details.

SONY 101



Superscope Inc., 8150 Vineland Avenue, Sun Valley, Calif., is marketing the Sony 101, and AC operated bantam transistorized dual track monophonic recorder. It has tape speeds of 3¾ and 7½ ips, takes up to 7" reels, has frequency range of 50-12,000 cps at the faster speed, has flutter and wow of less than 0.25% at the faster speed, and it has a recording and playback level control. Complete with carrying case, built-in speaker and dynamic microphone, the 101 sells for \$99.50. Superscope can supply all needed details.

TIME TO CLEAN UP YOUR SYSTEM...

Norelco® T-7 LOUDSPEAKERS

with voice coil magnets of Ticonal-7 steel (30% more efficient* than Alnico V)

*... 30% more efficient response to the full signal range of your amplifier... **WHETHER ITS RATED OUTPUT is 10 WATTS or a HUNDRED...** at any listening level from a whisper to a shout!

Guild-crafted by Philips of the Netherlands to give you

THE CLEANEST SOUND AROUND

Ask for a demonstration wherever good sound is sold or write to:

**NORTH
AMERICAN
PHILIPS
CO., INC.**

High Fidelity Products Division,
230 Duffy Avenue,
Hicksville, L. I., N. Y.



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MOHAWK MIDGETAPE PROFESSIONAL 500 BROADCAST QUALITY POCKET TAPE RECORDER

Used by NBC-CBS and numerous other radio and TV stations, for recording in the field.

This amazing 3 lb., hi-fi, American-made midget recorder instantly records any music, conversation or other sound and plays it right back in rich, broadcast quality.

MIDGETAPE has been successfully used in the ARCTIC... in the JUNGLE... in OUTER SPACE... UNDERWATER... EVERYWHERE MAN HAS GONE.

It's rugged... it's dependable.



- Special built-in "VU Meter" for distortion control.
 - Automatic, cartridge-loaded tape.
 - "Science Fiction" accessories for secret recordings now available.
 - Makes priceless sound movies.
- Take MIDGETAPE to operas... concerts... lectures... and record from wherever you sit.

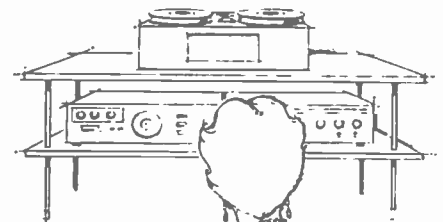
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manufacturers

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SOUND
ON
TAPE

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RCA

SOUND
TAPE

The most expensive hi-fi rig in the world cannot supply the truly superb sound reproduction you expect unless every component is carefully selected for top performance and reliability. Even the finest amplifiers and speakers cannot correct for an inferior recording tape...so you cannot afford anything but the finest tape! RCA Sound Tape assures you high fidelity reproduction...full frequency response from the thrilling highs to the powerful lows...and the best recording and reproduction your tape recorder can deliver.

RCA Sound Tape is available in the popular and economical 5" and 7" reel sizes, on solice-free Mylar* and acetate bases. Ask for RCA Sound Tape wherever superior quality magnetic recording products are sold. Electron Tube Div., Harrison, N. J.



* Du Pont registered trademark

The Most Trusted Name in Electronics

RADIO CORPORATION OF AMERICA

TAPE CLUB NEWS

Resignation Notice Given

Jim Greene, secretary of Tape-Respondents International, has announced his resignation to become effective after a new T-R-I secretary has been named. More complete details of this move are being made in a general memorandum mailed to all members of the club, and this announcement is made in TAPE RECORDING Magazine for the benefit of non-members who might have been contemplating joining T-R-I. The club's listing on this page has been removed, but will be inserted again after the new secretary has assumed duties.

Jim has served as T-R-I secretary since 1955, taking over at the request of the late Fred Goetz, who founded the club in 1950. He explained that personal business no longer permitted him to devote the time necessary to serve as club secretary. However, he will continue as secretary until the affairs of the club are in order and the new secretary has been named. After that, he plans to continue as an active member and possibly hold a minor office if requested by the new secretary.

Since no new members will be accepted in the club until the new secretary is named, special information is being mailed to all recent applicants.

Invitation to Join

The president of the Stereo Tape Club, Africa Division, Alfred H. Williams, wishes to extend an invitation to anyone interested in the exchange of stereo tapes to contact him. His address is 4 Clivedon Court, Main Road, Diep River, South Africa.

A feature which aroused particular interest among club members is the interchange of interesting collector's items. A club committee experimented first with eight arias from the operas on a small tape, which included two items each by McCormack, Schipa, Gigli and Caruso. So great was the response that the club established a private library and now invites inquiries from interested parties.

Another activity of this club is a self-help section. Interested tapers are invited to subscribe and include on their tapes details of equipment used, difficulties experienced, and any other relevant matters, so that members may share their difficulties and assist where possible to overcome them.

A most interesting club, we hope to hear more from them.

New Club Formed

We are happy to welcome another club to our listing in the foreign section. A group of British tape enthusiasts have founded the English Speaking Tape Respondents' Association to promote taping and better understanding in the English speaking world.

This club publishes a directory of members, which comes out in September, with supplements in December and April. News-sheets are also issued three times per year.

The club's British members are seeking more members in the U.S.A. for tape exchanges.

Officers of the club include: Eric Channon, 11 Highdown Rd., Lewes, Sussex—President; Robert Ellis, Schoolhouse, Whit-some, By Duns, Berwickshire, Scotland—Secretary/Treasurer; and Donald Cox, 69 Elmcroft Av., Wanstead, London, E. 11—London Representative.

We sincerely wish the club good luck and speedy membership growth.

Organ Music Enthusiasts Grow

We are happy to note the increase of members in the Organ Music Enthusiasts. The club recently mailed out its second annual directory which has grown to twice the size of last year.

A sad note, however, which the club secretary requested, we pass along since word was received too late for the directory. Donald Fletcher of Mentor-on-the-Lake passed away on September 17th. Our sympathy to the family of this club member.

JOIN A CLUB

AMERICAN TAPE EXCHANGE
Cortlandt Parent, Secretary
Box 324
Shrub Oak, N. Y.

BILINGUAL RECORDING CLUB OF CANADA
Rene Fontaine, Secretary
1657 Gifford St.
Montreal 34, P. Que. Canada

CATHOLIC TAPE RECORDERS OF AMERICA,
INTERNATIONAL
Jerome W. Clarrocchi, Secretary
26 South Mount Vernon Avenue
Uniontown, Pennsylvania

CLUB DU RUBAN SONORE
J. A. Freddy Masson, Secretary
Grosse Ile, Cte, Montmagny,
P. Que., Canada

ORGAN MUSIC ENTHUSIASTS
Carl Williams, Secretary
152 Clizbe Avenue
Amsterdam, New York

THE VOICESPONDENCE CLUB
Charles Owen, Secretary
Noel, Virginia

WORLD TAPE PALS, Inc.
Marjorie Matthews, Secretary
P. O. Box 9211, Dallas 15, Texas

FOREIGN

AUSTRALIAN TAPE RECORDISTS
ASSOC.
John F. Welen, Hon. Secretary
Box 970. H., GPO. Adelaide, South Australia

ENGLISH SPEAKING TAPE RESPONDENTS'
ASSOCIATION
Robert Ellis, Secretary and Treasurer
Schoolhouse, Whit-some By Duns
Berwickshire, Scotland

TAPE RECORDER CLUB
A. Alexander, Secretary
123 Sutton Common Rd.
Sutton, Surrey, England

THE NEW ZEALAND
TAPE RECORDING CLUB
Murray J. Spiers, Hon. Secretary
39 Ponsonby Road
Auckland, W.I., New Zealand

Please enclose self addressed, stamped envelope when writing to the clubs.

TAPE IN EDUCATION

Robert C. Snyder

(This month's column is a continuation of a series begun in September on the theory and practice of instruction in modern foreign languages.)

IN the columns which will follow it will be useful to use terms of specialized meaning such as *language teaching* and *language learning*, and a number of other technical or general terms which I will try to define as they are introduced.

One of the greatest causes of disagreement and misunderstanding among people is failure of the various parties to use the same definitions for terms involved in a discussion. Another major cause, of course, is failure to agree upon the objectives to be achieved. With the hope that it may minimize misunderstanding and confusion, I will try to keep definitions clear and objectives precisely stated.

For example, it seems to me that some of the biggest problems in education and educational administration today result from failure to differentiate between those things that must be *taught* to a student and those things which a student will readily *learn* for himself under reasonably favorable circumstances.

Once it is understood and agreed that many students have the ability to *learn* by themselves much of the content of any properly presented educational course, and that students *will learn* by themselves if *properly motivated*, then it becomes possible to recognize that educational processes can be greatly accelerated if the student is motivated to *learn* all he can *by himself* and the teacher is thus allowed to concentrate almost entirely on *teaching* those concepts and relationships which are beyond the *individual student's* ability to *learn*.

But now, let's go back and see why this is so. First, what do we mean by *learning*, and what do we mean by *teaching*. *Learning* and *teaching* are essentially two aspects of the process of finding knowledge and passing it along to others.

Learning is the process of finding out what something is, how it works, how it is done, etc. *Learning* may occur either as the result of accident or as the result of intention. *Learning* may occur in the *presence* of a deliberate program of *teaching* and it may equally well occur in the *absence* of *teaching*.

In short, *learning* is the process by which we acquire knowledge, understanding, or skill; it may be accidental or deliberate; we may be aware or unaware that it has happened; but — regardless of all else — *learning is something that happens within the individual*.

Teaching—on the other hand—is a process, usually deliberate, by which one in-

dividual *causes* another individual to *learn* some specific thing which the *teacher* has chosen for the *learner* to *learn*. Depending upon the skill of the teacher, the learner will more or less learn the specific thing intended by the teacher.

Learning, it should be obvious, can occur without *teaching*; but *teaching* cannot occur without *learning*. The only possible test, then, of the success of a teacher or a teaching system is how much the students or learners have learned in a given period of time. The only problem in creating a test to rate teachers or teaching systems accordingly is simply that no one seems yet to have been able to determine incontestably whether a learner has learned most when he has accumulated the greatest number of items of information or, instead, when he has learned to reason well even if his store of information is not yet so great.

Thus, we return again to the problem of objectives or goals in education.

Should the purpose of education be primarily to inform and to teach skills, or should it be primarily to teach the art of reasoning? Is it possible, in fact, to say that there is only one acceptable goal or purpose for an educational system?

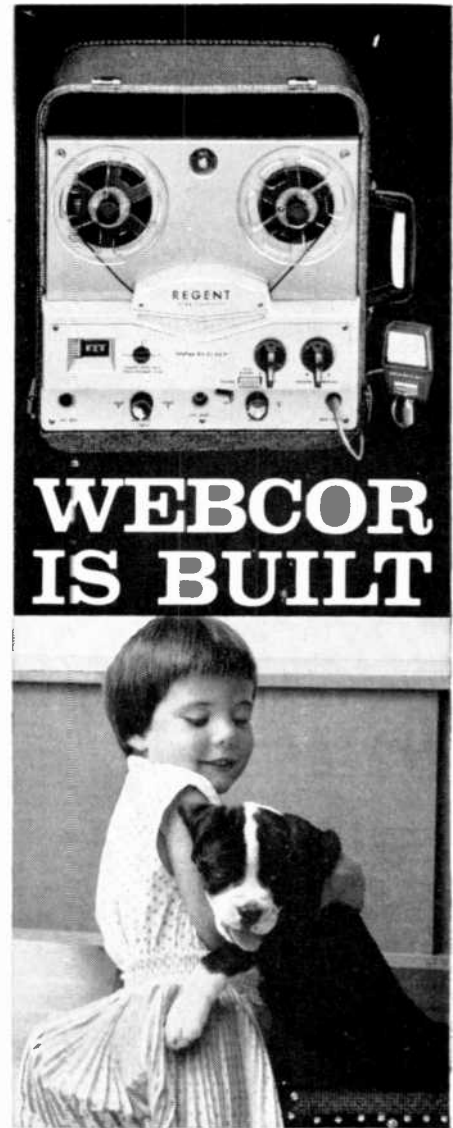
Personally, I doubt it.

First, we must recognize that each student is an *individual* and that *he differs in greater or smaller degree* from every other individual in his learning patterns and learning abilities. Then, if we are to arrive at a democratic educational system we will see that it is necessary to develop a method of educating which will let each individual arrive at the highest level of which he is *individually* capable.

An educational system designed to lead an individual to his highest possible level of *individual achievement* must, of necessity, rely on highly individualized programs of instruction. To achieve a highly individualized learning program, it becomes necessary to rely in large measure on self-learning by the student and also upon permitting the student to move forward at his own pace. When the student is able to learn a subject easily he must be permitted to move forward rapidly through the material which is easy for him. Similarly, when he encounters difficulties he must be able to slow down to the point at which he can understand and learn the material being presented to him.

Beyond some point in his program of learning, as the student develops learning skills and maturity, it may even become necessary—or at least highly desirable—for the student to program his own advanced instruction with appropriate guidance much as university graduate students do today.

(To be continued next month)



to capture
snapshots in sound

Not just *what* was said, but *how* it was said *when* it was said. That's the priceless thing about a candid on imperishable tape. *Take* it, and play it back whenever you've a mind to — on the Webcor *REGENT*. It's engineered to record sharp-focus hi-fi snapshots of all the sounds of life—baby's first words, parties, lessons, speech rehearsals and music. The *REGENT* plays three-speed, dual track; with powerful amplifier, wide-range microphone and speaker—frequency response of 50-12,000 cycles—cathode ray recording level indicator, numerical tape counter . . . the works! Webcor tape recorders start at \$139.95—slightly higher South and West.



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- SCIENTIFIC

Ideal for party music, helping Johnny with studies, language practice, sleep learning, unlimited commercial use... displays, dictation, exhibits, promotions, broadcast programs...

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ENDLESS TAPE

fits any recorder

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AUDIO-VENDOR

If your dealer can't supply you, write direct

FOR AUTOMATIC AND CONTINUOUS PLAYBACK

NOTHING TO CHANGE
NO REWINDING
ALWAYS READY FOR USE

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Tape never leaves magazine, which serves as convenient and protective storage case. Choice of 12 or 26 minute tapes.

record or erase as with standard re-wind tapes

"VOICES OF YESTERDAY"

Echoes of the past . . .
A COLLECTOR'S ALBUM!

Actual voices . . . you won't believe your ears!
Florence Nightingale; Lindbergh; Teddy Roosevelt; 6 U. S. Presidents; Thomas Edison; Gay 90's/ Roarin' 20's/Barbary Coast Frivolity; Will Rogers; W. C. Fields; Lillian Russell & Florida Sextette; Eva Tanguay; WWI & WW2 Fury, FAMOUS TRIALS: Bryan-Darrow @ Tenn./Hiss-Chambers/Sacco-Vanzetti/Nuremberg Nazis.

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in TAPE RECORDING
see the best values in the

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SEE HOW
YOU SAVE!

See products and values available only from ALLIED! Have your money-saving choice of everything in recording: sensational new Knight® complete Stereo recorders, lowest-cost 2-speed recorders, tape decks, preamps, mixers, mikes, heads, phono pickups, tape and accessories. Easy terms—only \$5 down (or less) up to \$200. For everything in Recording, for everything in Electronics, get the 444-page value-packed 1961 ALLIED Catalog!

FREE
catalog

ALLIED RADIO

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- Send FREE 1961 ALLIED Catalog
 Send FREE ALLIED Stereo Tape Catalog

Name _____

Address _____

City _____ Zone _____ State _____

FEEDBACK

Excerpts from readers' letters will be used in this column.

Address all correspondence to: The Editor: TAPE RECORDING, Severna Park, Maryland.

Just Try It!

To the Editor:

Four track tapes are simply wonderful. At last we can get good four-track stereo.

But just try to make a selection in the average retail music store or sound equipment store. *Just try it!* You are not permitted to test the tape. You are not permitted to have a portion of it played to ascertain just what it is. You have no way of knowing whether it will appeal to you or not.

As you know, there is a seal on the end of the tape and no one is even permitted to touch it. And I mean that. I had one sales person take the carton from my hand and put it back in the rack. You get the idea that they do not actually care to sell them. I have tested this attitude in no less than fourteen different establishments. They frankly will not let you make a purchase.

Yet, any one of these same stores (or any store for that matter) will be happy to let you test their disc records as much as you like and to help you make a desirable selection of either one record or a dozen or more records. You may test them and play them until you have made your selection. As you know, they have little cubicles for this purpose to make the choice at your leisure.

Not so with tape! They'll practically throw you out of the place. They think you are crazy. How come?—they say you'll spoil the tape; you'll break it; you are not supposed to; we can't let you break the seal; you're not to touch it—and so on.

Almost every day I play a tape or do something with a tape. What are they trying to do, convince the public that tape is a delicate thing, a forbidden thing, a thing that will literally crumble away at a touch? How ridiculous can they get? I have tapes that have been played hundreds of times and they are exactly the same now as when played the first time.

That's the story. My tongue is hanging out to buy about \$200 to \$250 of four-track tape at this time—but they won't let me.

If you can direct me to some establishment where I can make a selection as I see fit, that firm will make a sale of about \$200 worth of tapes and do me a favor. I'm waiting. I want to buy good recorded tape of my choice.

I know a couple of dozen just like me who want to buy tapes but are not permitted to make any choice. The dealer's philosophy is: You can take it or leave it but you're not going to HEAR anything.—*J. Emmett Cada, Westwood, N.J.*

See our comment in Crosstalk, page 10. Ed.

Are You A Guinea Pig?

To the Editor:

Agreed—mental images may slow ac-

ceptance of radically changed products. In the case of cartridge tape players and recorders let's go two steps farther.

1—Isn't it also true that most people consider anything with reels as a device to record and playback original sound? The concept of tape as a medium of musical reproduction is far from widespread. will take "hard sell."

2—Isn't it also true that most prospects are wary of any specialized lock-and-key relationship, be it special blades for a new safety razor, odd speed phono discs, or carburetors requiring special gasoline? Most buyers have a built-in aversion to being a guinea pig!—*Richard S. Levv, Buffalo, N.Y.*

Both of your points are excellent and we think very true.

Seeks Pal With Speech Problem

To the Editor:

I am a 13 year old girl. Having a Telectro tape recorder I would like to tape-talk with a 12, 13 or 14 year old girl in Alaska. Since I always have had a speech-learning problem and still am taking speech therapy, I feel that finding a tape-talking friend in a far off state will help me. Naturally I would like to talk with a girl who also has had a speech problem and who still may be taking speech therapy. I think we may be able to help one another. My hobbies are Girl Scouting and cooking.—*Kathy Dove, 1620 Parkman Avenue, Baltimore 30, Md.*

Wants Tape Friends

To the Editor:

I urgently require tape pals in the U.S.A. and would welcome anybody in any state. I will reply to every tape within 7 days. I can reply or exchange tapes in either stereo or mono. I have a Tandberg 2 track and a Norelco 400 and can accommodate all comers who care to send me a tape.—*Harry R. Wright, 60 Queensdale Rd., London W. 11, England.*

Seeks ALPHAtape No. 1

To the Editor:

I have been trying for some time to locate a tape which Omegatape once produced. I have written to many tape libraries but all have replied with a negative answer.

As a last resort I am asking for help. I would appreciate it if you would appeal to readers of Feedback for any information leading to a copy of ALPHAtape (OMEGAtape) No. 1 "High Fidelity Jazz.—*Laurence H. Goldman, 3001 S. 16th Street, Philadelphia 45, Pa.*

ALPHAtapes were put out on four inch reels packed in a plastic bag instead of a box some years ago. If any reader can supply the tape or a copy of it please contact Mr. Goldman directly.

QUESTIONS AND ANSWERS

Questions for this department may be sent by means of a postcard or letter. Please Address your queries to "Questions and Answers." TAPE RECORDING, Severna Park, Maryland. The most interesting and widely applicable questions will be used in this department.

Problems Recording Organs

Q—A project I am working on—recording the major pipe organ installations in the city—continues to give me trouble. Without exception, at each record session, I have picked up a clicking noise apparently produced by the foot pedals and carried through induction to the tape.

I own an ampex 960 with Electro-Voice 664 microphones, said by the local engineering company to be excellent equipment. They have tested both tape recorder and wires, as well as the mikes, concluding all to be in top condition.

In using a stereo headset for monitoring, I noticed during the recording that the clicking happens only when the organist depresses a foot pedal. This sound is not audible to the mikes.

The engineering company suggested converting the mikes to low impedance and using transformers on the lines. This reduced the clicking volume but did not eliminate it and it continues to spoil every organ recording I make, regardless of installation.—*Thomas D. Crumpler, 657 Florida Ave., Portsmouth, Va.*

A—Your engineering company has suggested most of the remedies applicable to your problem. You mention transformers on the lines. If this does not include the power lines we would suggest you filter these also using a filter such as the Cornell-Dubilier "Quietone" interference filter which should be obtainable through your electronic supply house. This should be grounded using the post provided.

Your current supply should come, if possible, from a line other than the one supplying the organ console with power and your recorder and mike cables should be kept as far from the console as practicable. Using low impedance mikes, permits longer cable runs without attenuation of the signal and also cuts down stray current pickups.

Do not run the mike cable parallel to the organ control cables if possible.

Apparently the trouble stems from the making and breaking of the contacts on the pedals but why this should apply to the pedals alone and not the keys also we do not know.

If any readers have a possible solution to this problem Mr. Crumpler will be glad to hear of it.

Channel Crosstalk

Q—Although quite pleased with the fidelity of the new four-track tapes, I am disappointed that each and every one of them is afflicted with reverse channel-crosstalk. This is of a very low level but is audible on all quiet passages and the silent portion between numbers.

I am using a Bell T203 deck which I converted to 4 track with the Bell kit. Thinking that my conversion might have been faulty, I deliberately raised the head so that track 1 polepiece was partially

off the tape, thus removing it a safe distance from track 2 of the tape. Upon confining my listening to the track 1 channel, I still heard the reverse cross-talk. I have also used an alignment tape but still the cross-talk is there.

I feel that this is a defect of the tape rather than anything else and I should appreciate your indicating your experience on this. I would be interested to know if any other of your readers have been troubled with this annoyance.—*W. E. H., Niagara Falls, N.Y.*

A—Having had the difficulty with a number of tapes it is unlikely that the tapes are at fault. We would suggest that you check the head itself, it is possible you may have a defective one in which the spacing may be defective between the two pole pieces.

You should also check the alignment of the tape through the guides and past the heads. If skew is present to any degree it is quite likely that you would pick up the other channels. If you have not already done so in checking the alignment, we would suggest that you loosen the head adjustment screws and while playing a tape move the head up or down until the cross-talk disappears. The amount of movement will be very small since the spaces between channels are only thousandths of an inch in width. You might take a loop of tape which has a recording on tracks 2 and 4 and none on 1 and 3, or vice versa, and play this adjusting it to get no sound when the silent tracks are passing the head pole pieces. Such a tape loop could be made by cutting a section out of a four track tape between numbers on one set of tracks but recorded on the other two. This could be respliced back into the tape after serving its purpose.

The only time we have experienced this trouble it proved to be misalignment of the heads. Tape duplicators could not afford to produce tapes which did not conform to standards since their tapes must fit all machines.

Automatic Shut-Off

Q—Would you, or any of your readers, have any suggestions for adapting an automatic shut-off device to the Wollensak T-1500.—*M. J. F., Santa Fe, New Mexico.*

A—The Acro Division of Robertshaw-Fulton Controls Co., PO Box 449, Columbus 16, Ohio makes a switch with a Nylon leaf with rounded corners over which the tape passes. The switch measures only 1½" in length and will handle up to 3 amps up to 250 V. AC. This unit can be mounted on a convenient spot on the recorder and then wired into either the motor or motor and amplifier circuit, depending upon what you want shut off when the tape breaks or the end passes through. The pressure of the tape against the Nylon leaf keeps the switch closed.

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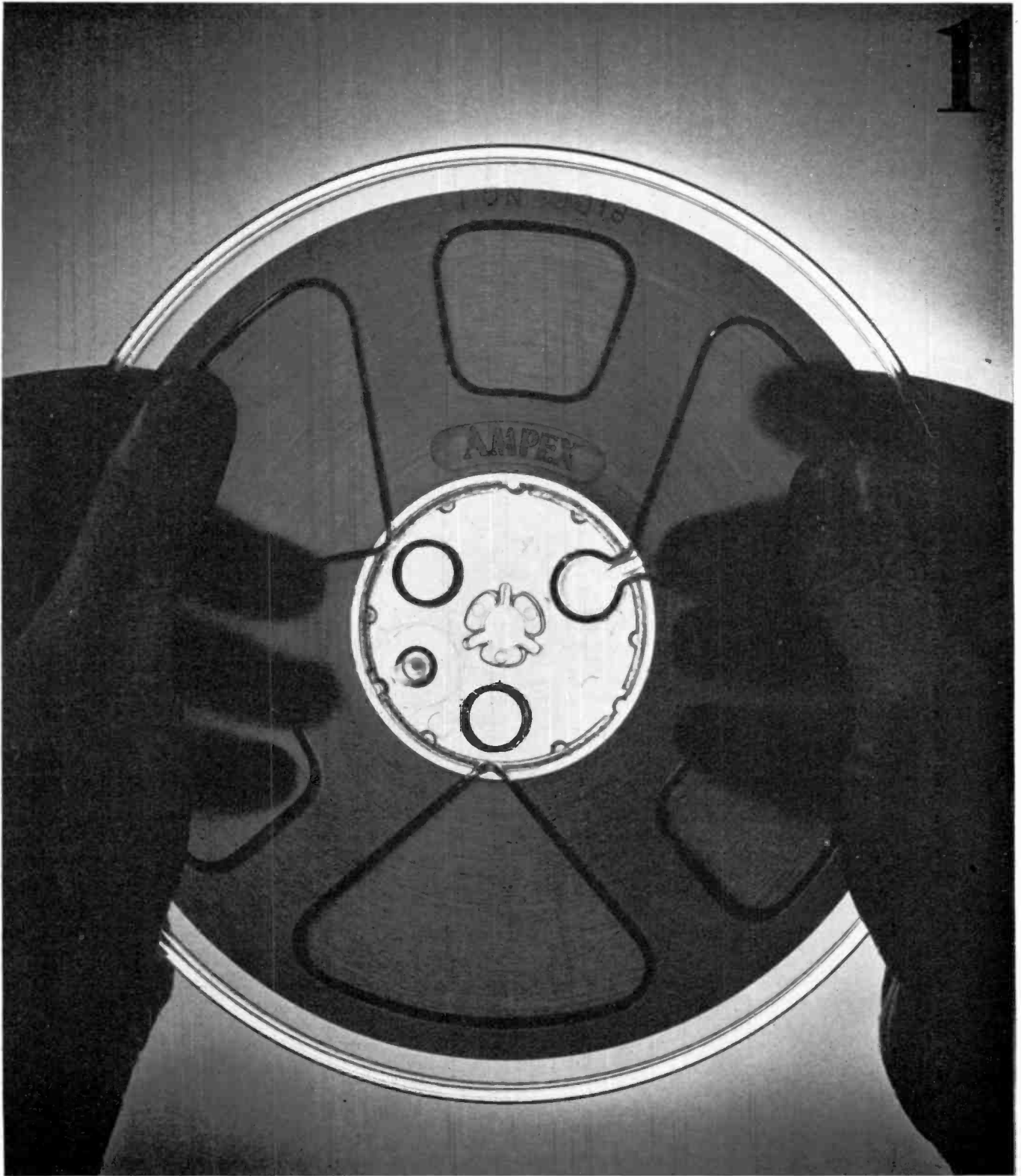


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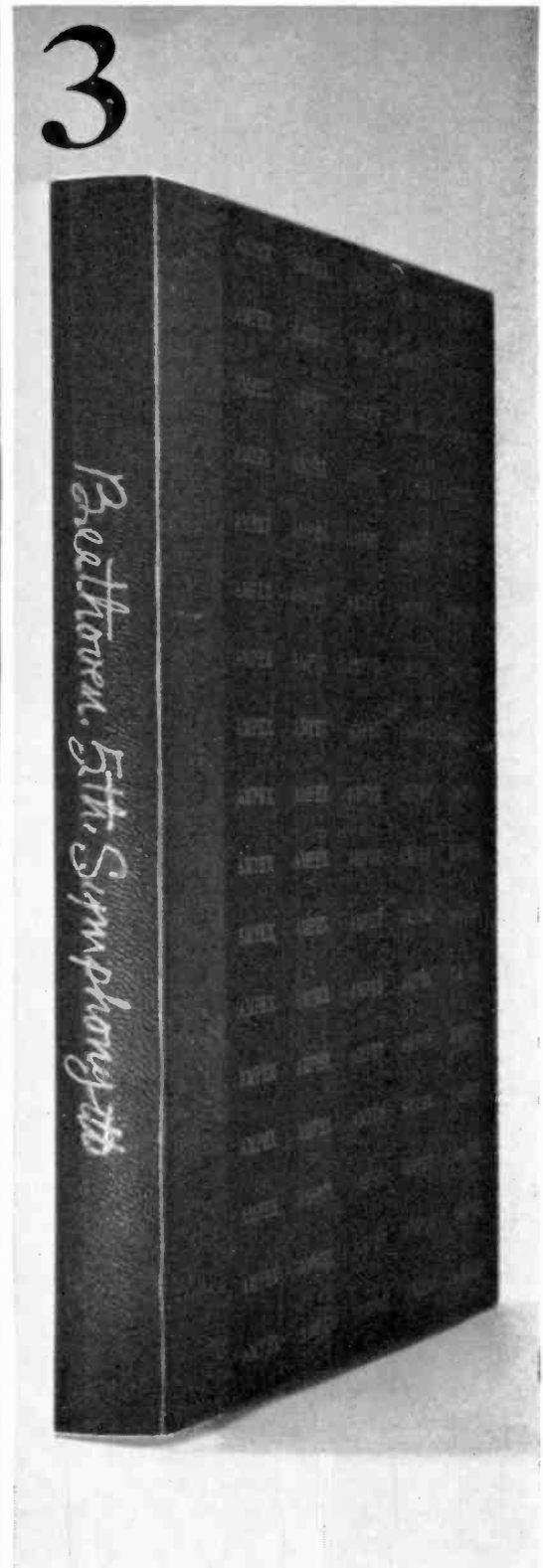
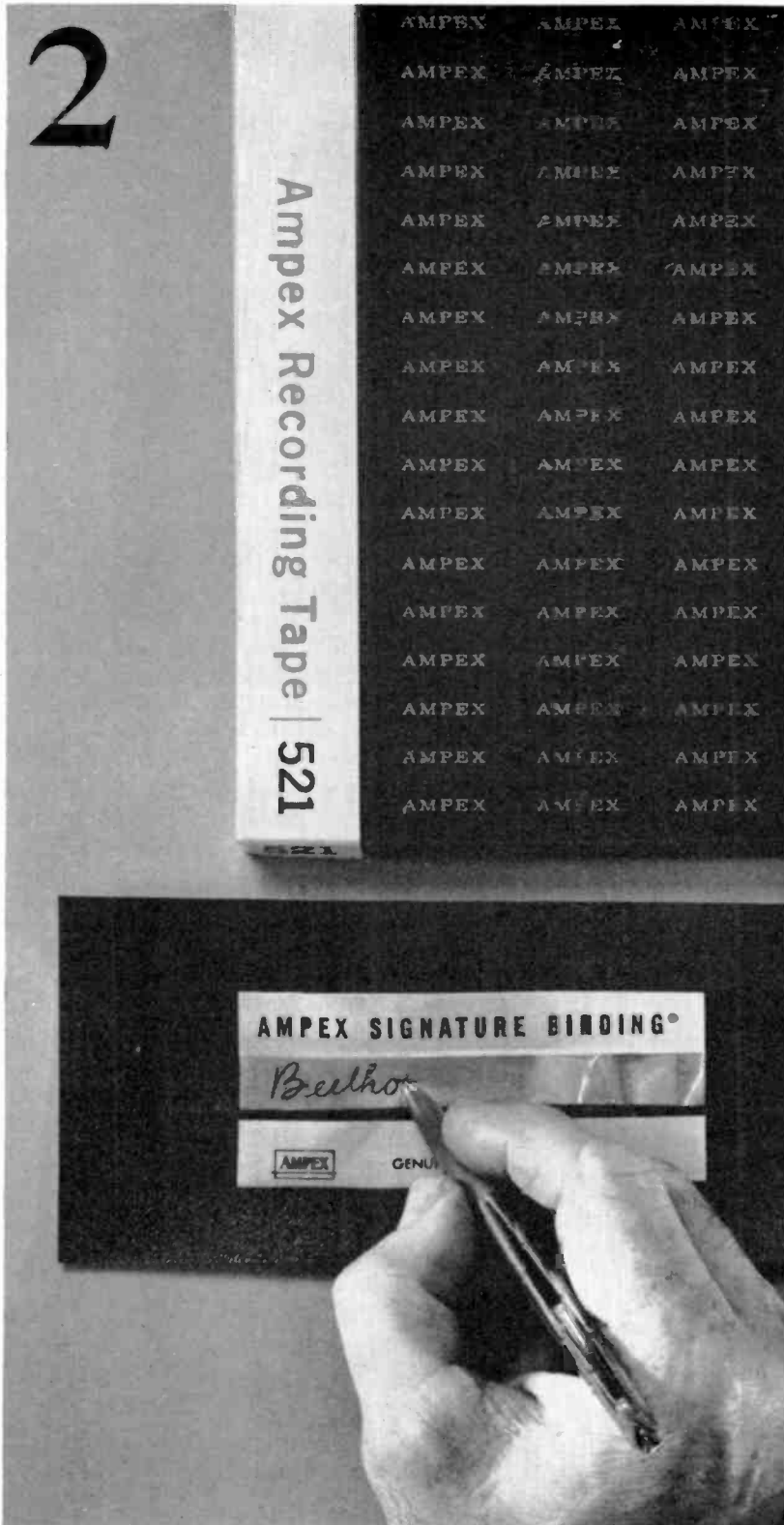
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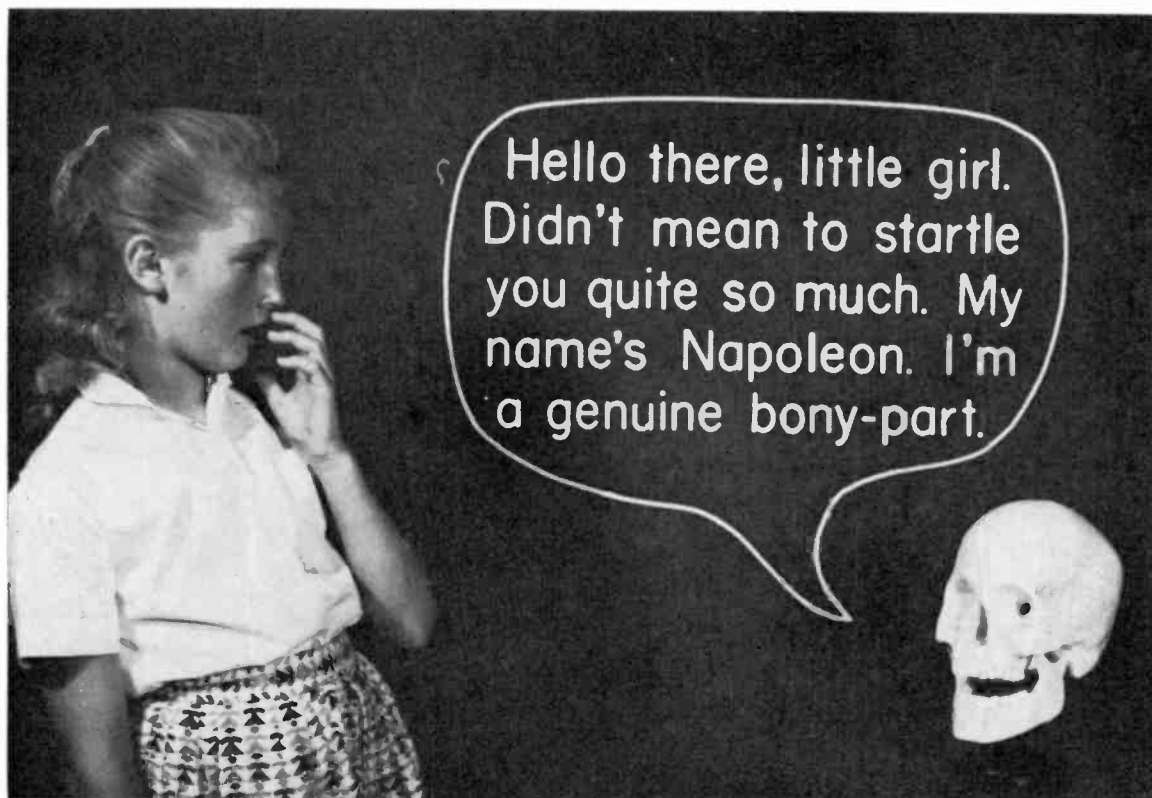


New Ampex SIGNATURE-BINDING* adds a distinctive new look to your tape library! Enclosed in every box of Ampex tape is a handsome simulated leather binding and a strip of gold foil. Simply inscribe the title of your recording on the binding with the foil, using a ball point pen. Then smooth the binding over the hinged edge of the box.

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The best place to hide a loudspeaker, if you really want to surprise your friends, is in a "thing" that is an attention-getter in its own right. This hollow skull sits on the corner of my desk and in a natural conversation piece that arouses the interest of all who see it. Then—when it suddenly starts talking—they invariably jump in astonishment.

Hidden Speaker Fun

by Tommy Thomas

... this idea can manufacture surprising results.

I'VE been having a hilarious time with my recorder the past few months. Ever since last Father's Day, when my family gave me a life-size plastic skull for the desk in my den, I've been investigating the possibilities of stashing away loudspeakers here and there around the house. The results, sometimes quite uproarious, are worth telling about, and you might even find an idea or two you'd like to try out yourself.

Take the skull, for good example. This is my personal favorite. Napoleon, as I call him, was put together in a couple of hours from one of those five dollar model kits you see advertised in almost any magazine you open nowadays. As I was putting the parts together it occurred to me that here was a perfect place to hide a loudspeaker. I imagined what a terrific conversation piece he'd make.

It worked out beautifully. So well, in fact, that what originally started out as a temporary idea to have fun with is now a permanent one. Napoleon is on his pedestal atop my desk right at this moment, firmly bolted down. I even drilled a hole right through the desk top so that I could lead a hidden wire down the hollow pedestal "stem"—going from the concealed speaker to my recorder



The manner in which you fasten the speaker is quite important. Experiment a bit to find the most suitable way. Here, a piece of wood is glued into the "cap" of the skull, then the speaker is fitted in place and fastened tight with wood screws. With this mounting, a hollow "spooky" sound is produced by the speaker.

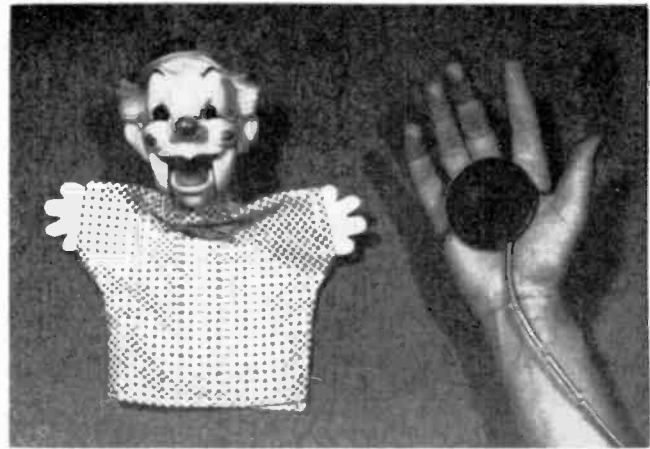


across the den. Now, at a moment's notice, I can plug the skull's speaker into the auxiliary speaker outlet on my recorder and play a special spooky-type recording right through the skull. If possible, I try to get set up ahead of time, when new visitors are expected, but it even works if I set it up after they're already here. Usually they're so intrigued by the skull that I can slip over to my recorder and get it going without being noticed.

Man, are they ever surprised!

Most of the time lately I've been experimenting with hiding just loudspeakers alone, but one time I hid my complete recorder. A new couple had moved into the neighborhood, and it wasn't long before we were good friends and began exchanging baby sitting. Well, when it came their first time to watch our children while my wife and I went out to a movie, they came over and we left. We left instructions as to when to put the kids to bed, where the food was for snacks, etc. But what we *didn't* tell them was that I had hidden my tape recorder in the pantry. It was hooked up to an automatic timer-clock that would turn the recorder on in a few hours. Then, promptly at ten o'clock, all heck broke loose! Sirens wailed, machine guns rattled and all sorts of wild, loud noises (taped from TV) came out of the pantry. Our new friends didn't know what hit 'em. I had even nailed the pantry door shut so they couldn't get in to see what on earth was going on in there. Then, just as they were about to bust down the door, the loud noises stopped and my wife and I (recorded previously on tape) quietly wished our new friends a pleasant good-evening and we hoped that all was going well. Then, for the next fifteen minutes we entertained them with jokes and funny stories.

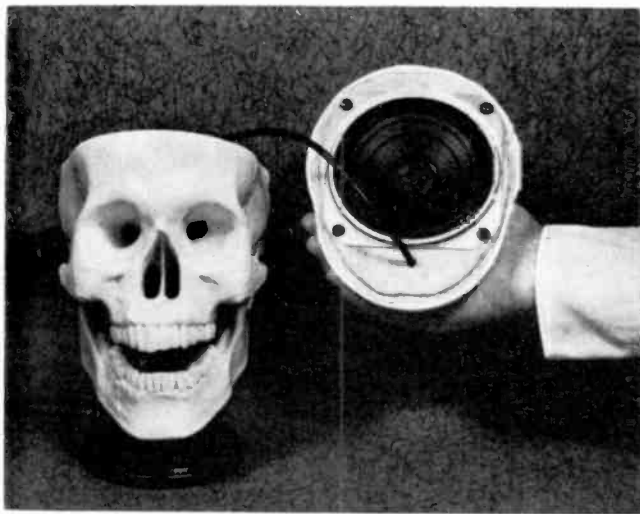
We weren't there to see and hear all this happen, but



Become a ventriloquist the easy way. This works great with small fry and is well worth the small effort involved. You'll need a hand-puppet and a tiny speaker you can conceal in your hand as shown above. Then behind your back go the wires that lead from the speaker to recorder (concealed in a corner or another room). Turn on the recorder and the tiny figure will start talking. Have a squeaky-voiced recording prepared ahead of time, complete with occasional pauses of silence so that you can get in a few words now and then. Let the puppet do most of the talking, though, and keep moving his head and arms. He'll appear surprisingly alive.



The Magic Guitar! Here's a good stunt for parties or a local amateur hour. You sing songs and apparently accompany yourself on an electric guitar. Actually, except for your singing, it's all a fake. The guitar music has been prerecorded on tape and a hidden recorder plays through the speaker as you pretend to strum. Even the "controls" are false, being just white bottle caps taped on.

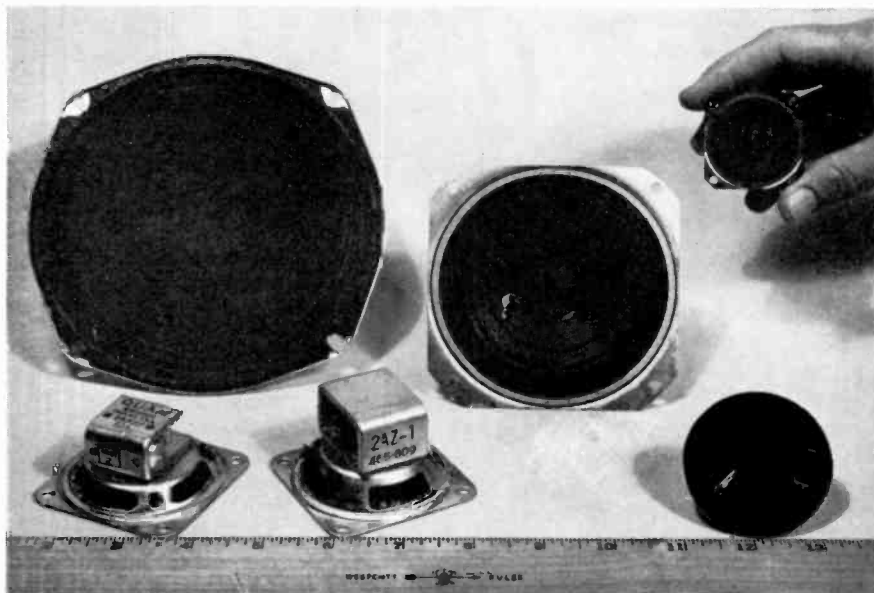


Now is the time, just before permanently gluing the entire assembly together, to double-check your wiring. All connections should be soldered, not just twisted together. And run a last check by playing a recording through the speaker one final time.

when we arrived about a half hour later we found our friends still in hysterics, tears rolling down their cheeks. Never, BUT NEVER, we were told, had anything so outrageously funny happened to them before. Just before ten they had shut off TV and the house was completely silent. Then, out of nowhere came these tremendous noises, followed by our quiet good-evening. The joke was a complete success and the neighbors are still talking about it.

Now, all this sounds a bit overdone, doesn't it? After all, pulling a kid-trick stunt like this on adults. But I've made the happy discovery that most people actually ENJOY being fooled like this on occasion. Done once in a great while and presented correctly, it can completely "break people up." Work it out just right, pick your "victims" carefully (no older folks, please), and you'll have provided your friends with an amusing experience that they'll be talking about for months.

So, let's get down to the actual accomplishing of some of these effects. Small loudspeakers are inexpensively available from any local or mail-order electronics supply com-



Notice, among this small sampling of loudspeakers, the two-inchers at the lower left. They're upsidedown so you can compare magnet size, a factor of importance always, but especially so with smaller speakers. A larger magnet, other speaker dimensions being equal, gives better performance. You won't always have room for the largest magnet, of course, but squeeze in what you can.



Don't forget that your recorder will very likely operate as a small public address system, with no tapes necessary (see your instruction booklet). This way, in another room, you can talk directly into the microphone and have it come out of the concealed speaker which is plugged into the recorder . . . thus permitting the immediate delivery of impromptu or personalized messages.

pany . . . though I'd like to mention the Burstein-Applebee Co., 1012 McGee St., Kansas City 6, Mo., as a good source for getting super-miniature loudspeakers at a reasonable price. These are imported 3-8 ohm speakers made for transistor pocket radios, but they'll work quite well with your recorder. Write for a free copy of the latest Burstein-Applebee catalog. Allied Radio Corp., 100 N. Western Ave., Chicago 80, Ill., is another good source, and they also supply a free catalog upon request. Then too, there is your own local electronics supply house to check with.

The Talking Skull

I used a 4" Quam PM loudspeaker (Quam #4A15, 3.2 ohms, approx. \$3) which was fastened in place as shown in the photos. Most hobby shops sell the skull kit for five or six dollars, or you can order it through the mail. It's easy to glue together, and comes with a black hollow-stem pedestal that is just perfect for sneaking out the speaker wires. People just can't resist examining the skull in detail. If you can time starting the recording so that the voice comes out just as they're running their hand over the skull I guarantee you they'll jump a foot.

Ventriloquism the Easy Way

Most people regard ventriloquism as a difficult skill to acquire, and they're quite right. It takes years of practice to become really adept at this fascinating art. That is, it takes years of practice if you don't have a tape recorder and a hidden speaker to make a tremendous short-cut for you. Of course, this won't really make a ventriloquist out of you, but you sure can do some grand pretending.

Your best audience will also be the easiest one to work for: small children. It's difficult to synchronize a puppet's mouth movements with a tape-recording, and much better to not even try. So just limit your performances to tiny tots—who care not a whit if the little puppet moves his lips or not—and you'll have yourself a ball. For those of you who have young children in the family, this can be a wonderful way to entertain them. And if it happens that daddy is away much of the time when the kids are put to bed, how wonderful to have *his* voice coming out of the puppet, telling the kids good night, sweet dreams, and reading them their favorite stories.

The speaker shown in the hand on page 21 is a Calrad PM-2¼" replacement speaker for transistor radios, 8 ohms, 0.1 watts (Burstein-Applebee Stock No. 22A350, \$2.19 plus postage). It's quite compact, having a depth of only one inch, and fits into the palm very neatly (we use a rubber band to hold it on securely). Plug this into your recorder with 25 or 50 feet of wiring and you can easily wander into the kids bedroom whenever you want to put on a "performance."

The "Magic" Guitar

Actually, this is another version of the ventriloquism effect. If you sit in front of an audience with a guitar in your lap (not too close, now) they're going to expect you to play it. Then if they see you fiddling with the guitar "controls" (which are dummies but they won't know it) they'll be all prepared for the music to come out of the nearby loudspeaker. Finally, while pretending to strum the guitar, start singing along with the recorded music and you'll have created a perfect illusion.

Of course you'll need to borrow a guitar from a friend, and get him to record a few guitar selections on tape for you. Also, get him to give you a few "guitar-holding" lessons. It's not very hard, really. The wire going from the loudspeaker to the guitar is a fake, and only for visual effect, but you *can* put it to really good use if you wish. If you've added a remote control switch (described in the July issue) to your recorder you can have this taped behind the guitar so that you will be in complete control of the taped music. This will give you a chance to get in some occasional idle strumming yourself, or pretend-tuning, to heighten the illusion. (Remember to pretend-turn-off the loudspeaker each time, though, or you'll give yourself away.) Finally, if you wish, you can make a comedy exit by leaving the guitar on the stool when you leave, and have it suddenly start playing *all by itself*. This is your cue to run back embarrassed, grab the guitar and the speaker and flee. It gives the show away but the laugh you'll get will be worth it.

Variation on a Theme

A friend of mine, who'd been out to the house recently, asked me to stop by his office the next time I was down town. Said he had something of interest to show me. This man runs a small ceramic company, and the things they turn out there are so fascinating that it's a delight



Once you get started on the idea of concealing speakers around the house, all sorts of ideas will come to you. Hanging on a den wall, for instance, I have a collection of bugs and spiders which always arouses considerable interest. People are forever asking me about them so I finally made up a tape recorded explanation that I can play through a tiny speaker concealed in a small, hollow witch doctor mask that hangs alongside.

to have an excuse to stop by. When I arrived my friend was out in the plant, busy at the moment, so I waited for him in his office. He finally came in, obviously still busy and with a thousand things on his mind, so I let him get caught up. The executive type! With his left hand juggling through a raft of papers he had on his desk, he had his right hand free to keep answering the intercom that kept buzzing and interrupting him. His secretary called, telling him to be sure and call New York back about that order for fifty thousand "Gilliwogs" (whatever the heck *they* were, I thought to myself). Then the plant foreman called in, wanting to know if so and so data was right on that new order for San Francisco. A few seconds later his secretary was back on the intercom, telling him that the mayor was calling, wanting to know if he had time to go to lunch with him. By now I was ready to leave. I told my friend I'd be back when he wasn't quite so busy.

My friend just roared!

"Hey, better look over here before you go," he said, motioning, and he opened up a big drawer in his desk to show me a tape recorder inside, spinning merrily away. "It's all a gag," he told me, laughing. "The intercom's a fake, just like your skull. What you just heard so dramatically was all on this tape, carefully timed. Even the buzzer noise. How about that? Makes people think I'm a real busy, important guy."

The crazy idiot had fooled me completely!

PLAN AHEAD

by Jean Cover

Cartoons by Gladys Whittenburg

HOW often have you endeavored to do something, and ended up in a state of frustration when it went all wrong because you did not plan ahead. I'll wager it happens often and each time you tell yourself that next time it will be different. And usually the next time, the same situation occurs all over again.

This theory of planning ahead is simply too much trouble for some folks and probably they are the ones who rumble the most when turmoil sets in.

Chaos takes many forms. It may be in the form of a shortage of time, which you did not plan on; it may be in the form of forgetfulness because you did not plan ahead; it may shape up via an argument due to lack of planning; perhaps nonplanning may go the extreme and cause personal or property damage. In many cases it even may go one step further in the form of legal problems concerning one's estate because plans were not formulated ahead for proper disbursement.

So too, not planning ahead can bring about chaos and frustration in magnetic tape recording. For instance, you're taping an opera which is a special program presentation and may never be aired again. Everything is rolling along smoothly until all of a sudden you see the end of the tape approaching and the opera still has about 15 minutes to run. The whole project is fruitless without the ending and you frantically look for a way out.



Without a second machine to start up, you have no way of catching the end of the opera without losing part, during the time it takes you to throw on another reel of raw tape and thread the machine.

Old man Frustration creeps in and you end up reaching for the aspirin bottle.

Now there are precautions you could have taken ahead of your taping which would have alleviated all this confusion, such as checking the exact timing of the program in your local paper, then using a reel with enough tape on it to cover the time.

At one time there was a book titled "The Standard Musical Repertoire" available which contained a listing of musical composition timings. Unfortunately, this is no longer published, but you may be able to obtain an old copy in the public library for reference.

You check the time of the musical work against the length of time obtainable from the tape you are using *before* attempting to record and you know whether or not you will run out.

Should you discover, through checking, that you will run out of tape, you plan on the procedure you will use to make sure you still do not miss getting the recording.

Perhaps you decide to use the "flying splice," which enables you to attach a fresh tape to the one already running without interrupting the recording. All well and good—if you have on hand the necessary accessories to make the splice and are ready for it, this is about the handiest method we know of.

To make this splice, you watch your counter or marker and about two minutes before the end of the tape you reel off the tape onto the floor. On most machines the supply spindle is in free wheeling while recording, so you can spin it faster than normal with your finger. Use a pencil or similar pointer to guide the loop over the side of the machine. As soon as it is dropping freely to the floor it will usually guide itself.

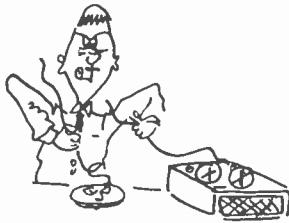
You should let the tape fall in an uncluttered area where it won't get snarled, snagged or stepped on.

The next step is to replace the empty spool with a new one and hastily splice it to the end of the tape you have just unreeled. The main objective is to get the two pieces fairly well lined up and stuck together so the old tape will pull the new one through the machine without having to stop and rethread.

Before all the slack is taken up, make sure the tape is not twisted. Simply rotate the supply spool fast enough to maintain a generous loop until you are sure it is okay. Should there be a twist, you can eliminate it by lifting off the spool and turning it over, but be sure to get it back on the spindle before you run out of slack.

Now your machine is operating with a full reel on each spindle. You will be surprised how much additional tape a full reel will hold. Even though it extends beyond the reel it will not become snarled because the tension holds it taut. You can keep on recording this way until you run out of clearance around the takeup reel, but since this would, in most cases, give you about another hour of recording time, it is unlikely you would need more additional time than this, unless you really were far off base with your time.

Suppose some unexpected splicing crops up—every now and again a tape *will* break you know. Have you planned for such splicing? Do you have on hand a good splicer and proper splicing tape? Or are you one of the "I'll fix it some way or other" crowd who grabs any handy tape, so long as it sticks, and a pair of scissors and does a sloppy, ineffective piece of splicing.



If you belong to the latter group you should be educated to the difficulties which sticky tape that oozes can inflict on your recordings.

A poorly made splice is worse than no splice at all. In the first place, it probably won't hold and you'll have to do it over anyhow. The oozing adhesive can attach itself to the heads and tape guides. One layer gets on another until a jerking of the tape begins, thus causing wow and flutter.

Should your tape ever break unexpectedly and you cannot stop to splice it right then, you can wind the loose end onto the takeup reel with your finger until it binds tightly and keeps winding on its own.

Your accessories should always be within easy reach of your machine. Some enthusiasts who do quite a bit of editing even attach the splicer to the top deck of the recorder.

While we are on the subject of accessories it would be well to mention that maintaining a substantial stock of raw tape is always good practice. To suddenly be caught short in the middle of a conference, social function, or even while doing some home recording can be maddening.

Unless you are a technically minded electronic engineer or equivalent, it is always best to know ahead of a recorder breakdown who and where your nearest local service-repair shop is. When buying any appliance, it is almost more important to have proper servicing available than it is to get it paid for.

Before purchasing any machine you should plan on handling it with care and this care should include regular cleaning and limited lubricating with a good quality cleaner and lubricant such as "Long Life," marketed by The Distributor's Group, Inc., or that put out by Robins Industries.

Other simple precautions such as demagnetizing heads, roughing up pressure pads, gentle handling of the machine, etc. all help in caring for your recorder.



Care doesn't just save wear—more important, it saves money in the form of reduced repair costs, and planning now to give your recorder the care it should have will help bring about such savings.

Building a good, well organized, tape library is not a thing of chance, it too must be planned for. To begin with, we are considering here a *tape* library and this means creative, interesting recorded sound, as well as music.

To obtain the particular recording you are after, whether it be bird calls, Niagara Falls, a 707 taking off, or what,



you should plan when and where you wish to capture the sound.

Perhaps it may be a case of first obtaining permission to even make the recording, such as contacting the minister when you wish to make a church recording. More often than not, any trouble which arises in order to get a recording is more than compensated for by the sound treasure you will acquire.

As for your musical tape assemblage, plan to acquire the releases systematically. Perhaps you will buy one in each category at a time and then begin again from the top.

For those not too familiar with classics, we recommend the music of Brahms, Beethoven, Rachmaninoff and Tchaikovsky as composers whose music will be bound to afford much inspiration and enjoyment. On the lighter side would be Grofe, Offenbach, Ravel and Johann Strauss, Jr.

In the field of the symphony we would suggest Beethoven's Fifth (the "Victory") and the rhythmic, energetic, Seventh. His last, the Ninth, is the "Chorale" symphony which ends with the magnificent "Ode to Joy," and is a most worthy addition to anyone's tape library.

Berlioz's "Symphonie Fantastique" will contribute a variety of moods from dreams of a ball, or a meadow, to wild witch dances.

Mozart's Symphony No. 1 (the "Jupiter") is a wonderful example of the fluid tonal beauty and forceful, triumphant emotion his music evokes.

Serge Prokofieff's "Classical Symphony" lends a more modern yet melodic listening experience.

Tchaikovsky's Symphonies, Nos. 4 and 6, contain familiar themes for, as you may know, many have been lifted for use in the popular music field. His music is filled with color, melody and charming flourishes.

From the symphony we progress to the concerto. Among the violin concertos we believe you would enjoy Beethoven's Violin Concerto in D and Brahms' Concerto in D. For the piano you will find the very popular Piano Concertos Nos. 1 and 2 by Franz Liszt, Rachmaninoff's Piano Concerto No. 2 and Tchaikovsky's Concerto No. 1, and for classical piano, Beethoven's Piano Sonatas Nos. 23 and 8.

There are many orchestral selections available. In a more serious vein are Mozart's "Eine Kleine Nachtmusik," Debussy's "Prelude to the Afternoon of a Faun," Mussorgsky's "Pictures at an Exhibition," Respighi's "Pines and Fountains of Rome," and Tchaikovsky's "Romeo and Juliet."

As to lighter works, there are the "Polovetzian Dances," by Borodin, Dukas' amusing "Sorcerer's Apprentice," Grofe's popular "Grand Canyon Suite" and Ravel's "Rhapsodie Espagnole" and "La Valse" and "Bolero," Gershwin's "Rhapsody in Blue," Offenbach's "Gaité Parisienne" and Tchaikovsky's "Nutcracker Suite."

The tapes which contain diversified selections are a

valuable augmentation to the music shelves. As examples there are "Waltzes and Polkas" of Johann Strauss, Jr., and "Origin of Life," "Song of Your Heart," "Finlandia" and "Pohjola's Daughter" by Sibelius.

There is an excellent selection of religious and choral music to add to your library and an increasing number of solo instrumentalists, such as Sabicas, Kurt Rapf, and George Wright are also showing up on tape.

In the field of popular and Latin music, you can now find almost anything to fit your desires.

One musical category we heartily recommend for every collection is show music, such as that from "South Pacific," "Oklahoma," "Porgy & Bess," etc. Original motion picture sound tracks make excellent additions.

For those folks who like the unusual, having a group of novelty tapes such as Sounds in the Round, or RCA's Bob and Ray tapes, sort of rounds out a collection.

Before any recording session, it is most beneficial to check out your machine ahead. In order to do this properly it would be helpful to make up your own checklist.



This is particularly helpful when planning a recording on the outside. Under such circumstances, you must be certain you take with you all necessary equipment and

accessories such as extension cords, connecting cords, mike cable, an empty reel for takeup, splicing materials, extra raw tape, etc.

A quick rundown of the machine heads, pressure pads, capstan, and general threading area before use can turn out to be a valuable practice indeed. Nothing is more disturbing than to arrive at your destination, get set up for recording, and then have the machine not function properly.

Anyone planning a trip abroad with his recorder as a companion should check beforehand on the power current available at their destination since this varies in foreign countries. There is a handy pamphlet entitled "Electric Current Abroad," published by the government, which is available to anyone at a cost of 20 cents, which gives this information. For a copy, write to the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C.

When planning a party or other home entertainment, by all means include some taped fun. Nothing makes any gathering so dull and embarrassing as a lull in conversation, when everyone stares at someone else, wishing the other person would say something. Every good host or hostess avoids such pitfalls by planning the evening's entertainment ahead. Nothing can beat your recorder and some well thought out taped entertainment designed to fit the guests you are inviting.

In some instances, the unwritten law of fate takes over and some situations turn out fine without planning ahead. However, you take your chances, and you must also take the consequences, for such occurrences are rare. It is far better to be sure than sorry.

PUT "BEEPS" IN YOUR TELEPHONE RECORDINGS WITHOUT COST

Telephone recording broadens the scope of any recordist, bringing voices from any part of the civilized world within his reach. The procedure is rather simple: A small, induction pickup may be placed beneath the base of any combination type (bell-in-base) phone instrument, or slipped over the receiver cap of any telephone. Acceptable signals are thus available for recording from most local or distant calls.

There is one slight "hitch," however: Most state laws and FCC regulations require that the other party be warned that he is being recorded by a "beep" signal. The standard signal seems to be 1000 cycles-per-second, heard at least every fifteen seconds on the telephone line and, of course, in the recording.

Commercial "beepers" may be purchased from suppliers of dictating machines or rented through the business offices of most telephone companies. If you're interested in making recordings of phone conversations on a regular basis it's best to buy or rent such equipment so that it's always ready for use at the turn of a switch.

If, however, you're merely recording for your own enjoyment on an infrequent basis, there is a simple way to stay within legal requirements which requires only that you borrow (or own) a second recorder.

Record a tone on tape—using a frequency (rate of vibrations) as close to 1000 cycles a second as possible. Here are

three ways to obtain a usable tone: 1) From a test record or tape; 2) From a signal generator (test instrument), and, 3) From audio "feed back." This is the squeal produced when a monitor earphone is placed close to a live microphone (the howl of a speaker is pitched a bit low and hollow for our purposes).

The duration of the beep should be about 1/4 second. If you can't manage it by quickly switching the signal on and off, edit the tape to 1" in length. Insert the 1" tone in a loop of 50 inches of unrecorded tape, splicing carefully.

Place the spliced loop on your recorder in the direction in which the tone was recorded. Place empty 7" reels on both spindles as guides to prevent tape fouling. Pencils may also be used as guides to keep tape flowing smoothly.

Put recorder in "play" mode and time beeps. They should be heard every 13 1/2-15 seconds. If time is longer cut out 4" for each second over 15 secs.

Make a test call. Ask a friend to tell you when beeps are heard about as loud as your voice. If they're not audible, or faint, turn up volume and/or move telephone transmitter closer to speaker of the tape recorder.

Get the "beeps" rolling and adjusted before establishing your call. Connect the second recorder's microphone input to induction coil as outlined in directions and make a test recording. Beeps should be heard on the line and in the recording, satisfying legal requirements.

—Richard S. Levy

DEALERS DON'T HAVE IT EASY EITHER

"I know we pressed the wrong button instead of the clutch and used the wrong tape speed but we should have heard *something!*"

. . . .

"I know all about stereophonic tape but tell me . . . why the two speakers?"

. . . .

"My phonograph has four speeds; 16-33-45-78. Has that got anything to do with four track tape?"

. . . .

"Is it true that playing magnetic tape near small children is dangerous?"

. . . .

"My mother is a Rudy Vallee fan, and I just bought a tape recorder; now is it possible that in your stock of new four track tapes, there might be a . . ."

. . . .

"If it's so simple to operate, why do they have a 32-page booklet to go with it?"

. . . .

"What do you call the tape that wipes away the tape you don't like anymore?"

. . . .

"My boss wants me to get a bottle of head cleaner; looking at him though, you'd never know . . ."

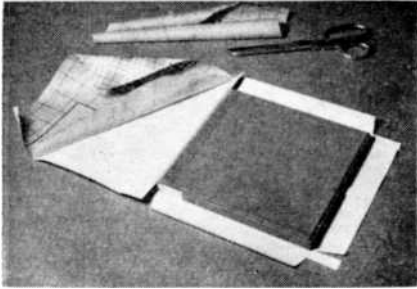
. . . .

"Now that four track tape has arrived, will I be able to trade my old 78 rpm phonograph in?"

—Fred Permitz

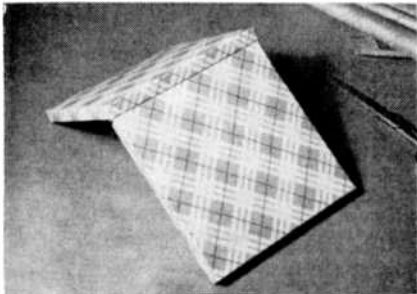
PLASTIC COVERING FOR TAPE BOXES

. . . dress up your tape collection this easy, economical way.

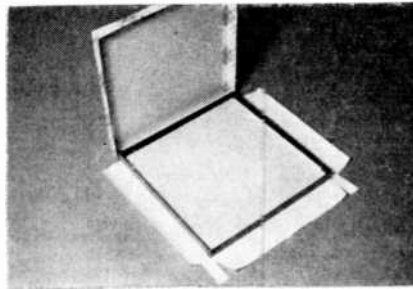


Above: The partially peeled plastic is first applied to the face of the box and to the hinged end; slits and notches are cut in the plastic, and the end flaps are bent and stuck down.

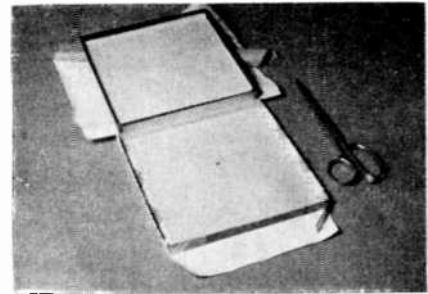
Below: Press down at the hinged joint with fingernail or scissors handle to insure a neat edge.



by
Morris Dollens

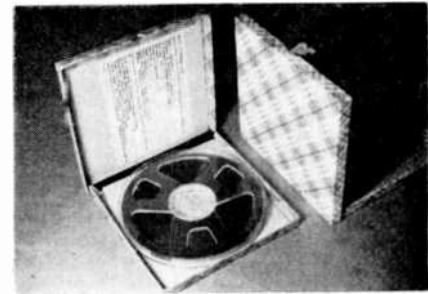


With the box front standing open 90 degrees as shown, the plastic is stuck to the back of the box, making a tight hinged joint, avoiding bulging when the box is opened. Slits and notches similar to the other half are again cut, and folded over in a similar sequence.



Above: Next the top and bottom end-flaps are folded over and pressed down. Then the two small flaps are secured before the final front flap is folded over and rubbed down.

Below: Notch the box cover with a razor blade to facilitate opening. Title and composer can be lettered on the hinged back, with a detailed information sheet pasted inside the cover.



FOR those collectors who record a variety of subjects on tape and dislike the mixed breeds of commercial tape boxes, re-covering offers a way to decorate the boxes and color-code them for easy selection and simplified replacement in the storage cabinet. The rather slick surface of most boxes presents a problem, as it is very difficult to get pastes and glues to stick, and these are likely to be expensive if you use the special stick-to-everything types of glue. I tried spraying some boxes with hammertone paint, with fair results, and later tried enamel, but when the boxes were stored next to each other, they tended to stick together and tear spots in the paper base. After looking around in the variety and department stores, I found a plastic self-adhering sheet, obtainable in six foot rolls and in bulk, at around a half dollar a yard by eighteen inches wide; a great variety of colors and designs is available, including wood grained effects and many decorative patterns, not too gaudy in design.

To cover a seven inch reel box takes the full eighteen inch width by ten inches long, so in buying this material, try to obtain it in multiples of ten inches, such as six feet (72 inches) or three and one-half yards (90 inches), avoiding waste. If the tape boxes are a very dull finish, the sticky side of the plastic may not adhere tightly, in which case the plastic manufacturer recommends a sizing coat of glossy paint first, thoroughly dry.

The procedure is shown in the photos and captions, with a few additional hints herewith. If the inside flaps of

plastic do not stay stuck, overlap a strip of one-half inch paper masking tape to hold the plastic down.

Titling can be done with a pen and India Ink, although the surface will have to be lightly sanded with a very fine abrasive paper first or the ink will flake off. The simplest method is to type the title and composer on a piece of light-colored masking tape and stick to the hinged end of the box, rubbing it down through a piece of paper so as not to smudge the typing. This can be protected by an overlay of clear cellophane tape, if desired.

Another method is to set up a movable type rubber stamp, if you have a number of similarly labeled boxes, as for Folk Songs, Speeches, and so forth, printing this along the edge and on the front of the box. Since regular stamp pad ink dries by absorbing into the paper it is normally used on, it may take weeks to dry on the plastic surface; but a better method is to use a little rubber roller such as those supplied for photo-finishing, about four inches long, spreading quick-drying printer's ink or enamel paint out on a scrap of glass or metal, and using a fresh surface of this ink each impression, spreading a fresh layer often. Test this out on some other scrap plastic first, and have a rag with paint thinner handy in case the impression is not clear, wiping afterward with a clean cloth to dry the surface to take the next impression. Allow a few hours to dry before stacking the boxes.

A little decoration such as this goes a long way to remove the commercial look to a tape collection.



Fig. 1: Recorder installed in front of car within easy reach of driver makes learning while you drive easy. Inverted to supply current may be mounted ahead of firewall or in trunk of car to supply 110 volt current.

Learn While Driving

by *A. N. Baxter*

. . . anyone who does a substantial amount of commuting can use the traveling time to broaden his education.

AT day's end do you wonder where the day went and wish that you had accomplished more? Do you, like many others, spend a large percentage of your waking hours en route? Maybe you're like most people; when you get home from work you're tired, or have other responsibilities. That correspondence course has to wait; the memory work for the lodge, or the speech for Toastmasters gets a fast shuffle. Study for the advanced-license test is ignored. There is no time for that new book, or current magazine.

The following paragraphs describe some do-it-yourself hardware which can make it possible for you to make good use of what might now be wasted time; to learn while you commute. The system is not inexpensive, but like any educational process it can pay dividends many times its initial cost.

Simple System

Basically, the system is simple. The least expensive type consists of only a tape recorder. A more expensive type consists of two or more recorders. The writer currently uses the two-unit system; a second-hand recorder at home; a new, foreign-built recorder in the car. Figures 1 and 2* are photographs of the unit mounted in a Chevrolet. The particular foreign-built recorder installed in the car will function on 110 volts only. Hence, a vibrator power pack is required. (Note. Pulsating D. C. can cause a serious

hum if wires are located close to recorder. Therefore, the vibro-pack should be mounted forward of the cowl fire wall.) Where a transistorized playback unit is used, a vibro-pack will probably be unnecessary, and the car battery may be used as the energy source. The system using

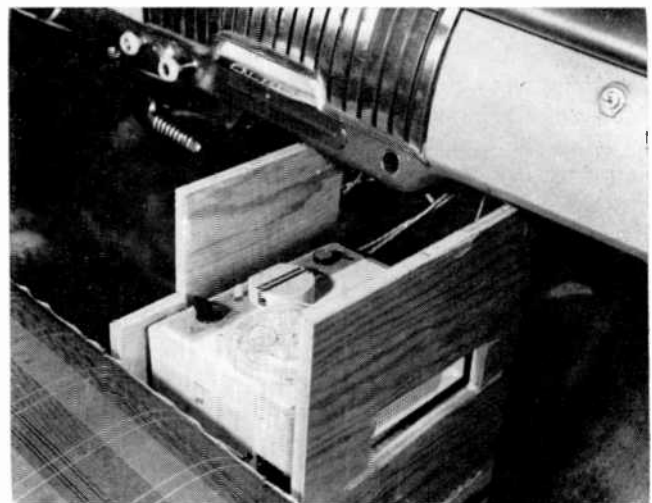
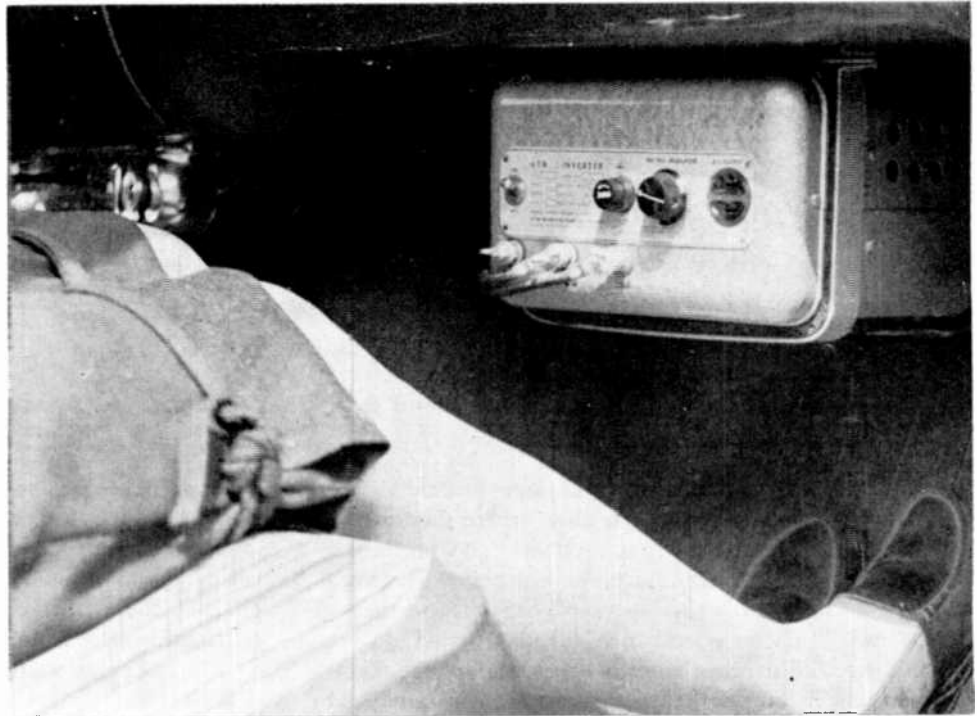


Fig. 2: Wooden frame holding recorder spans "hump" in floor where transmission drive shaft comes through. Floor on which recorder rests must be made high enough to clear the hump. The width will depend upon the recorder used. Cut-out on driver's side allows easy access to the controls. Top, as shown in upper photo makes writing surface for note-taking.

*Photographs by J. Squillante.

An American Television & Radio Co. power supply inverter mounted to car dash. For such mounting, two 9/32" holes must be drilled in the lip of the dash to take the 1/4" bolts which hold the special mounting brackets made to fit the unit. While front brackets are easily attached, variation of car design makes it necessary for a rear support bracket, which attaches to the fire wall and to the rear brackets, to be made locally to fit.

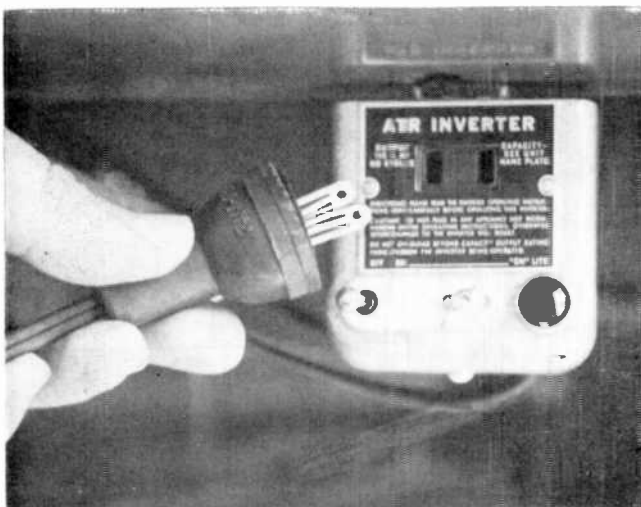


both a home recorder and a car playback unit is the more convenient, because it does not require alternating the recorder between house and car.

Easy Does It

The operation of this "self-education" system is very simple. Recordings are made at home, at school, at work, during special lectures, etc. and played back while one travels. The sources of desirable material are virtually unlimited whether they be newspaper, magazines, company reports, brush-up courses, license manuals, new words, conversion factors, lectures, formulas, etc. (For example, the writer's young daughter earns extra spending money by recording classics, and other literature, which dad doesn't have time to read.)

Recordings are also made from selected radio programs occurring on a non-commercial local radio station. Reli-



A.T.R. remote control unit mounted on the dash of automobile. The inverter is mounted in the trunk compartment. The remote control unit is plugged into the inverter power outlet and the two control leads attached to the proper terminals for operation. This delivers the necessary 110 volts of power for your recorder directly to your dash.

gious and other types of brochures, articles, and books are recorded by the wife, the writer, relatives and friends. It is generally preferable to select articles which have few illustrations, although it is quite possible to observe simple illustrations while the car is stopped. The illustrations may be situated atop the "desk," (Figure 1) The desk and paper-pad are also used for jotting down ideas which occur while driving and/or listening.

Educators have found that repetition is highly desirable during the learning process and for retention of information. With this system you can interrupt the "lecturer" as often, and anywhere you like and make him repeat what you specifically wish to learn. You can cut out what you don't want.

In addition to "home-made" recordings, several organizations currently produce tapes which can be rented. For those who are interested in studying music, a wide variety is available. However, the fidelity of the playback unit must be good.

If your work demands the writing of reports, you will find that the car is an excellent place to dictate them, although special equipment on the transcription end, is highly desirable.

How About Safety?

Someone is sure to ask about safety. After many hundreds of hours of both dictating and listening while driving, the writer can attest that, done properly, safety is improved, not lessened. No longer do the frustrations of traffic snarls and stop-light waiting lines annoy you; you're using time profitably, not wasting it. In addition, one slows down and increases the distance between him and other cars. Stop lights are automatically obeyed.

Make some simple calculations. You'll probably find that you could have taken many advanced training courses during the time you've spent en route. You'll probably convince yourself that the pay-check would be bigger this week if that time had been spent on courses rather than classes.

ACOUSTICS and RECORDING

by John W. Berridge

... sound waves sometimes need a guiding influence to produce desired effects.

OVER the years, manufacturers of tape recorders have refined their products to the point where they're now easier to operate than movie cameras and projectors. They've eliminated all the difficulties which stood between the new owner and many hours of happy recreation—except one!!! There is still that lengthy period during which the recordist learns enough about microphone placement to enable him to get results that satisfy him. And the main reason for this is that few take the trouble to explain anything about the acoustic problems involved in making a good recording. With this in mind, I'm going to try and explain, briefly and simply, enough of the problem so that anyone reading this will have at least a basic idea of how to make a start on good recordings.

Let me start by dispelling the idea that understanding sound takes at least a college degree. It doesn't and never has. It can be explained very simply indeed. Sound waves are reflected from any surface! If you bear that in mind at all times, you have a key to the situation. In much the same fashion as the light from a flashlight, you get a main beam of sound with weaker sound sprayed out in all directions. You can still understand what someone is saying, even though he may have his back to you, though obviously it's going to sound much louder and clearer if he's looking straight at you. Some musical instruments are likewise quite directional, others spray sound more or less equally in all directions.

Take a look at Fig. 1. This shows a microphone set up in a bare room directly in front of the sound source. Sound waves will obviously reach the microphone by the direct path A, and since they have the shortest distance to travel, will arrive in the shortest time. Sound waves will also be radiated out in other directions. These in turn will be reflected from one or more surfaces to reach the microphone (paths B, C, D, E, F). The longer the path and the more surfaces each wave is reflected from, the longer it will take to reach the mike. Each reflected wave will also be weakened in its travels by the greater distance it has to travel and by the fact that it may be partly absorbed by the surface it is reflected from. Quite obviously, hard flat surfaces will reflect more readily than coarse, irregularly-shaped ones.

So now we begin to see that though the original sound emitted from the source may have been sharp and of short duration, what is picked up by the microphone actually consists of several sound waves, the direct one which arrives first and strongest, followed by various reflections which arrive at different times and with decreasing

strengths. This is illustrated by the chart of Fig. 2, which shows the various sound waves. The longer the reflections take to arrive the weaker they will be, and the end result is a dying out of sound as heard by the microphone. Equally obvious, the character of the sound will vary with the relationship between the direct and reflected sound waves. This brings me to another point.

We're all familiar with the phenomenon known as "persistence of vision." It's what eliminates the flicker when we watch movies or television shown at more than twenty-four frames per second. What is not generally known is that we also have a certain "persistence of hearing." It has been found that if a reflection of a sound arrives at the ear less than one-tenth of a second after the end of the sound itself, the ear tends to join the two together. The original sound appears to continue for a little longer, diminish in strength and also (because reflections get a little distorted in their travels) change its tone quality slightly. It's for this reason that I have joined the tops of all the curves of Fig. 2 to show one rapidly falling curve. It's the latter that we actually hear. If the time between each curve becomes more than one-tenth second, we begin to hear a distinct echo. Otherwise we experience what is usually called "reverberation."

The next question then becomes, "How do we manipulate this effect to suit our own purposes?" Answer this and we are well on the way to the secret of good mike place-

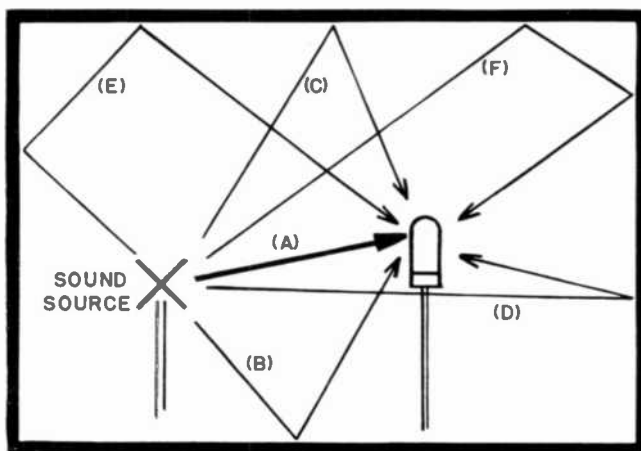


FIG. 1. Reflections from the various surfaces of a room would occur something like this. Moving the microphone or sound source will obviously produce greater changes in the reflected sound waves than it will in the direct wave (A). Reflected waves are weakened when they have greater distances to travel. They are also partly absorbed by the surfaces they are reflected from.

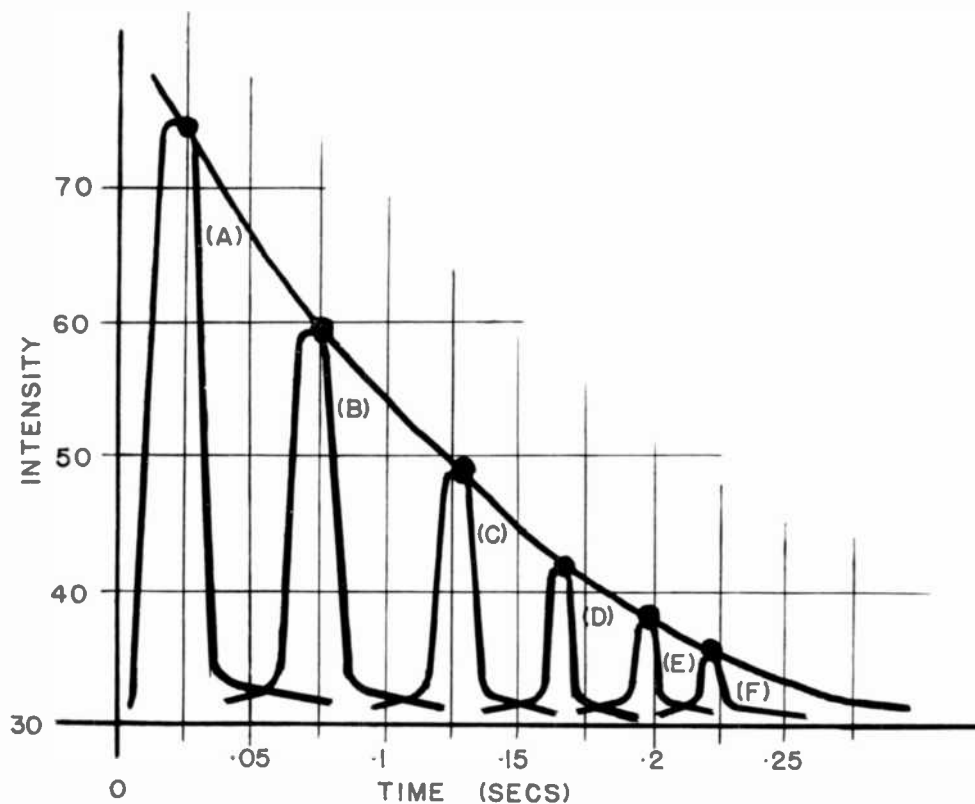


FIG. 2. The direct and reflected sound waves of Fig. 1, if drawn on a graph, would look like this. Though they are entirely separate sound waves, persistence of hearing tends to join them together to give the gradually falling curve shown here. If the spacing between each curve becomes more than one-tenth second, they reproduce as separate echoes.

ment. Our object is to strike a good balance between direct and reflected sound, one that suits us best. I'll repeat the latter—that suits US best. It's important as I'll show in a second. There are two easy ways to alter this balance. The first is to change the direct sound and the second is to change the reflections. You can change the direct sound by moving the mike closer to the sound source (or vice-versa). The direct sound wave becomes stronger, and we then turn down the gain control to avoid overloading the recorder. Note however that the strength of the reflections won't have changed very much. Both the sound source and the mike, though now much closer to each other, are still about the same distance from walls and the like. The duration of the reverberation will appear much shorter, and the balance between direct and reflected sound will have changed radically. Conversely, moving mike and sound source farther apart will make for greater reverberation.

Suppose, however, that you don't want to alter the relative positions of mike and source (close miking does give rise to sibilants and popping sounds). Well, as you move around a room the reflections reaching you change drastically. The same goes for a microphone. The farther away the mike (and the sound source) are from hard reflecting surfaces, the weaker will be the reflections. The balance again changes in favor of the direct sound waves. The thing to remember here is that different types of surface reflect sound to different degrees. If you stay away from hard-surfaced walls and floors, both of which reflect sound the way a mirror does light, your problems should be lessened.

Getting the sound you want is merely a matter of trial and error. There is no other way of doing it. It should be standard procedure with every recording you make to spend the first few minutes recording at least three

or four sentences, listening to the playback and moving things (usually the mike or the person speaking) around until you have the sound YOU want. If you're doing the recording what it sounds like to YOU is what matters. Ignore all opinions. The exception occurs when you're doing a recording for someone else. Get HIS opinion on what it should sound like and abide by it. Ignore your own preferences completely. If said person later changes his mind and doesn't like the sound any more, that becomes his problem. Just make sure he understands that once a recording is made it can't be altered in any way. A golden rule should be to let the person to whom the recording will belong. AND THAT PERSON ONLY, make the decisions on sound quality. Opinions differ so much it's impossible to satisfy even two fairly critical people usually.

Experience will teach you greater technique as you go along, but you can get good results every time if you keep in mind certain things which are unchangeable. Sound radiates in all directions from its source. Sound waves are reflected from any surface, far more from hard, flat surfaces than from soft, irregular ones. Sound picked up by a microphone consists of sound waves direct from the source, together with reflected waves to a greater or less degree. The quality of the pickup depends on the ratio between the direct and reflected sound waves. The balance between these two can only be determined by actually recording and listening to the playback (generally thirty seconds will give adequate time in which to make a decision). These constitute the basic knowledge required to understand simple acoustics. Grasp these and the rest will come with time. Meanwhile, commit these basic ideas to memory, they will help make you more sure of your recordings and they will guarantee reasonable results every time.

NEW PRODUCT REPORT

STA **OK** STED



TELECTRO TELETTE

... Transistorized, battery driven portable with controls accessible from outside of case.

THE Telectro Telette is one of very few American-made battery-driven portables. Measuring only 3 x 6 x 10½ inches and weighing only 6 pounds, 7 ounces complete with case and batteries, it is easily carried.

It is powered by seven 1½ volt AA penlight cells which have a life of up to 30 hours on intermittent service. Motor and amplifier drain is on the order of 100 mils.

Telectro plans to make available rechargeable cells and a charger. The ZM-9 mercury batteries may be used instead of the AA penlight cells for greater battery life.

Also available is an accessory cord which permits the recorder to be operated from the cigarette lighter of a

car (12 volt). It incorporates a polarity reverser. Power requirement for the operation of the recorder is .8 watts.

The recorder is dual track and using 1 mil tape gives a playing time of 40 minutes at the 3¾ ips speed and 1-1/3 hours at the 1⅞ ips speed.

Speed change is effected by means of a speed change control mounted between the reels on the deck. This is raised for 3¾ and lowered for 1⅞.

The function control is located on the top of the case and may be operated without opening the lid. When the recorder is on the carrying case, the flap is lifted to permit access to the function control. The volume control, for both recording and playback is on the side of the case and is always ac-

Product: Telectro "Telette"

Manufacturer: Telectro Industries Corp., 35-16 37th St., Long Island City 1, N. Y.

Price: Recorder, \$129.95. case \$9.95

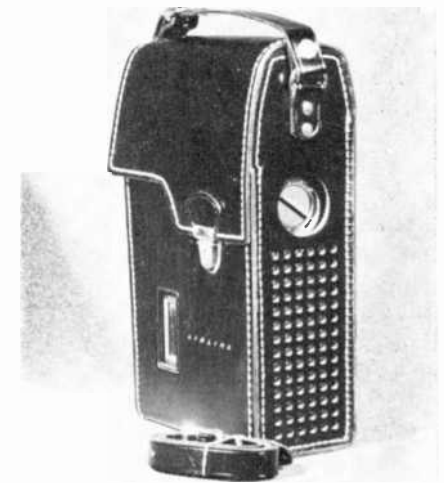
cessible whether or not the unit is in the carrying case.

The function control has four positions, rewind, stop, play and record. A record interlock is operated by depressing a button on the control. Fast forward may be obtained by holding the control between the stop and rewind positions.

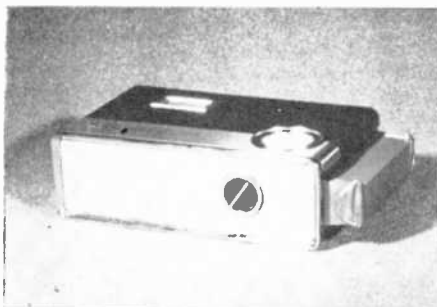
Output of the recorder is 1/3 watt, which is adequate. It uses an etched circuit board and has four transistors. The speaker is a 6¼ x 2½ inch oval.

The Telette uses three-inch reels which are held on by rubber retainers so the recorder may be operated in any position.

The dynamic microphone is very cleverly placed in a plastic housing at the end of the case, beneath the handle. About one-third of the space in the housing is occupied by the mike and the balance is used for stowing the mike cable. The jack for connecting the mike to the recorder is also located under the plastic housing. An extension mike cable is available as an accessory to permit greater freedom of action when the recorder is being used in a car, and is connected to the cigarette lighter outlet for power.



Recorder in its attractive black leather case. Controls may be operated by lifting lid without removing recorder.



Upper left: Recorder has volume control and function control which contains record, play, off, and rewind positions. Upper right: The microphone is incorporated in a plastic shell on the end of the case. This lifts off for use and the shell has storage space for the mike cable. Lower left: The unit is powered by seven pen light cells or, for greater life, mercury batteries. These are held in a plastic case to which the power cord is connected. Not shown is a jack on the rear of the unit to take power from an automobile cigarette lighter. Lower right: View of battery case showing how batteries must be placed.

We found it advisable to remove the mike from the recorder when making recordings. If this is not done, the vibration of the motor and running gear will be recorded along with the signal. This, of course, would be true with any recorder.

Threading couldn't be simpler—the tape passing from the feed reel across the heads to the takeup reel is almost a straight line.

On the rear of the case are two jacks one of which is used when the power is taken from the cigarette lighter by means of the accessory cord and the other is for making connection to an external speaker or for plugging in headphones.

The case is of steel with an attrac-

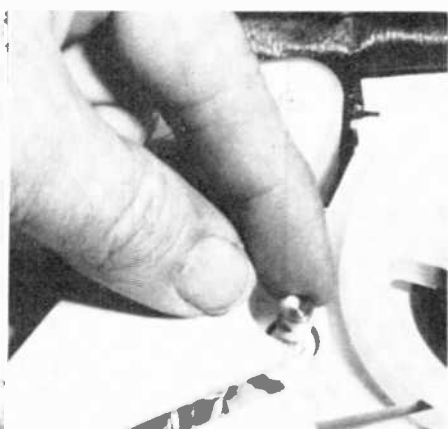
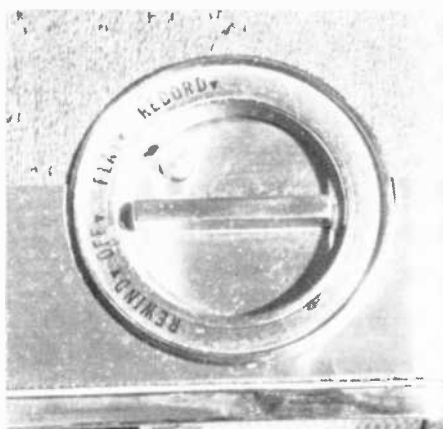
tive black and nickel finish.

Since no recording level indicator is incorporated, the user should experiment to find the best settings and distances for recording level. In speech, this is about 6 to 8 inches with the volume control about one-quarter open. The recorder has adequate sensitivity.

The recorder has a frequency response of 100 to 6500 cycles. No claim is made that this is a hi-fi machine. For voice recording it proved to be very good.

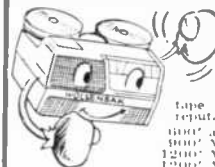
The unit is sturdily made, is attractive in appearance. The controls are readily accessible and easy to operate.

For those who make sales reports, do interviews, etc. in the field it is worth consideration.



Left: function dial. Button is record interlock button which must be depressed to permit recording. Right: unit is two speed, 3 3/4 ips and 1 7/8 ips. Change is made by means of speed control located between reels.

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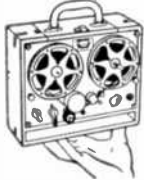
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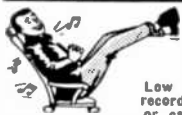


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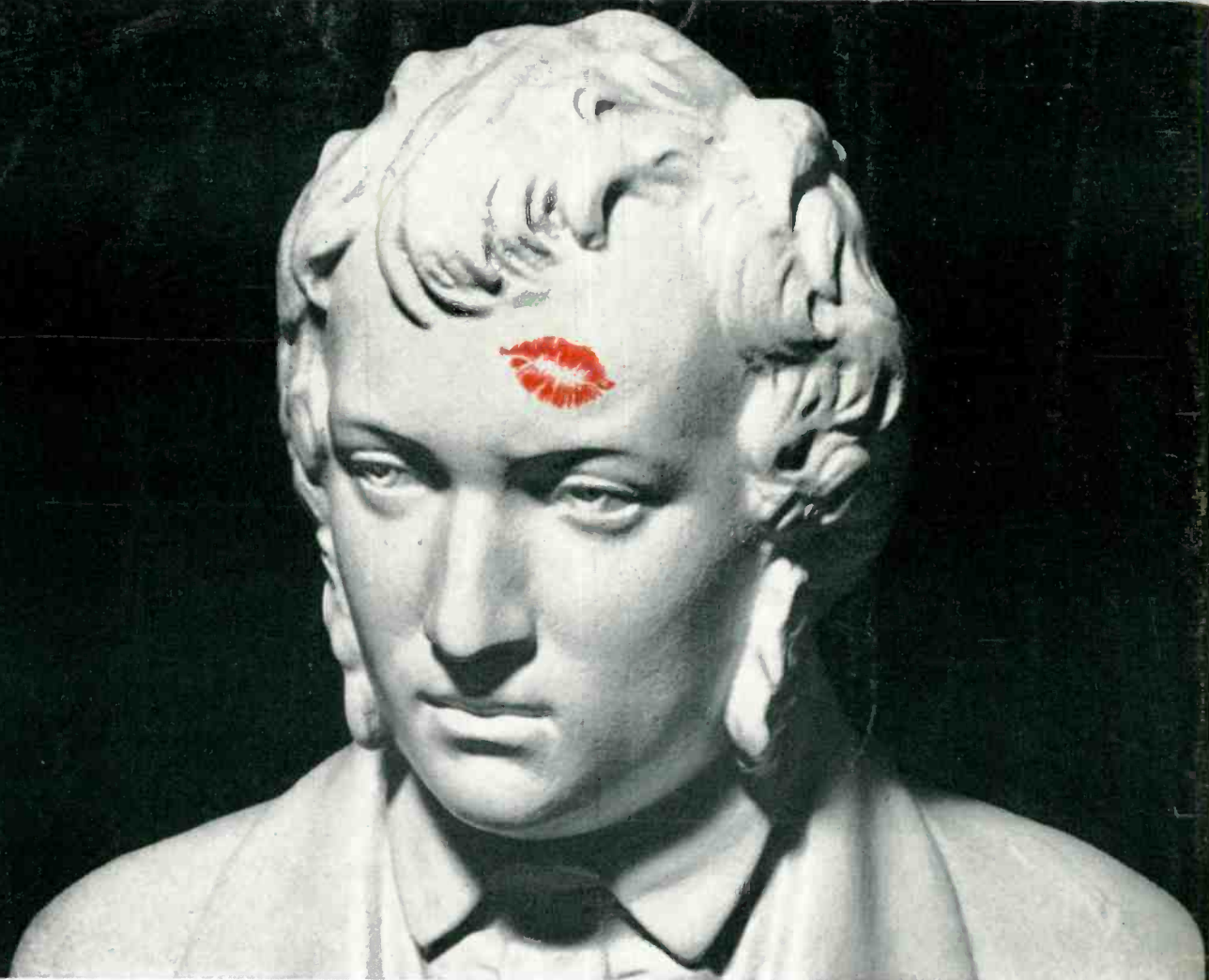
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