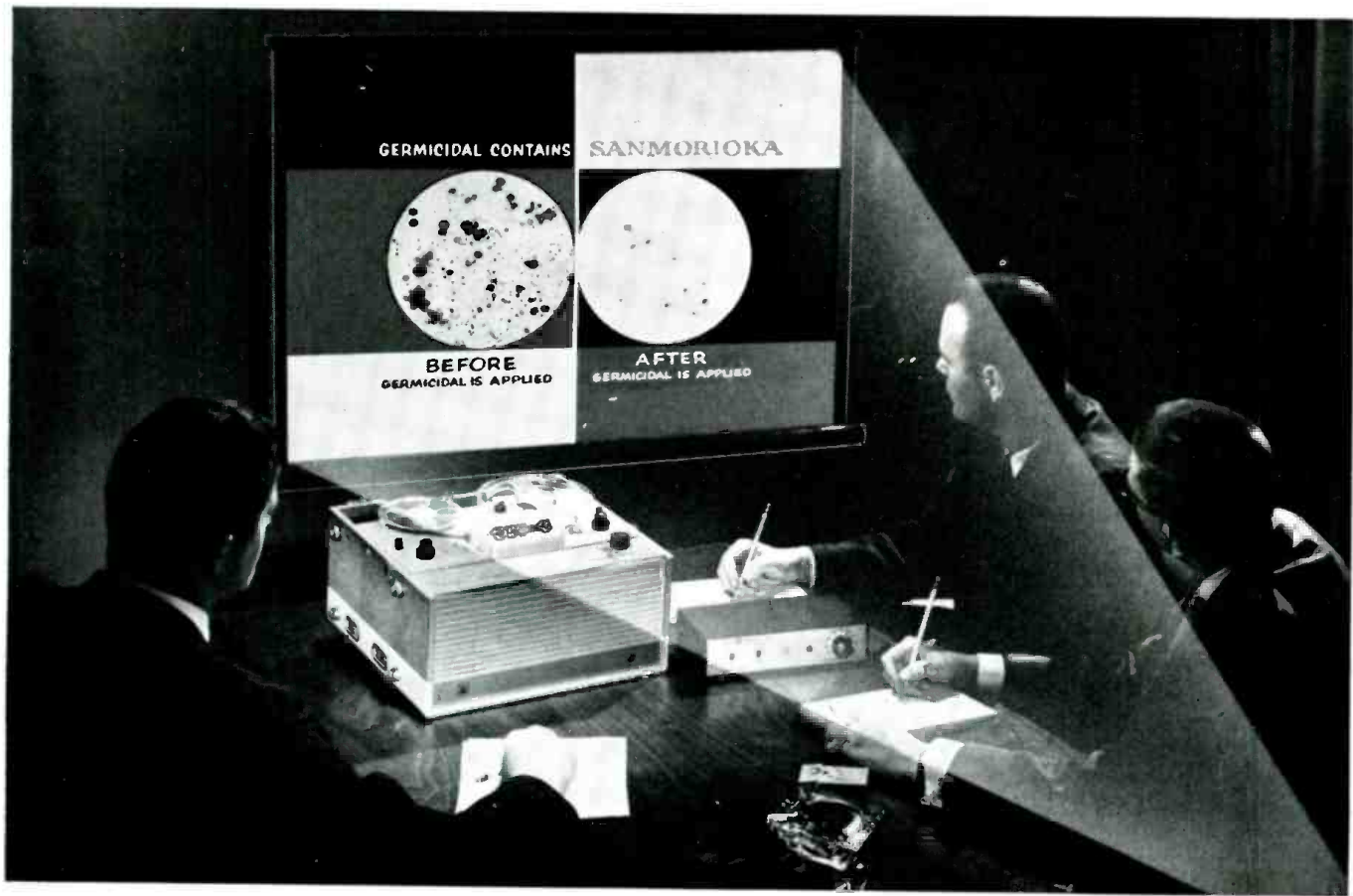


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Recording festival at Viana do Castelo in Portugal.





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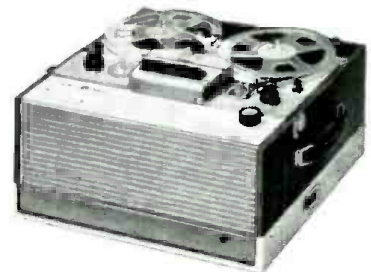
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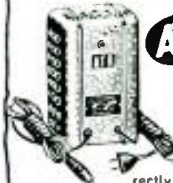
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# TAPE RECORDING

VOL. 8 NO. 8

JULY 1961

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**THE TRUTH WILL OUT**

OR  
**BABY-MAE TO THE RESCUE**

by  
**L. L. PARKAS**  
writer and producer  
formerly with Columbia Broadcasting System

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# NEW TAPES

★ Fair

★★—Good

★★★—Very Good

★★★★—Excellent

## CLASSICAL

Reviewed by Robert E. Benson



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

**WAGNER:** *Tannhauser Overture*  
Florence May Festival Orchestra conducted by Vittorio Gui

**HAYDN:** *Symphony No. 94 in G "Surprise"*  
Mannheim National Symphony Orchestra conducted by Herbert Albert

**TCHAIKOVSKY:** *Capriccio Italien*

**SCHUBERT:** *Symphony No. 3 in D*

**BERLIOZ:** *Rakoczy March*  
Graz Philharmonic Orchestra conducted by Gustav Cerny

**BEETHOVEN:** *Symphony No. 1 in C, Op. 21*  
Mannheim National Symphony Orchestra conducted by Joseph Rosenstock

**LIVINGSTON 4T 100-5**  
4 track, 7½ ips  
\$10.95... 101 mins.

Livingston has attempted to provide here a complete home stereo concert on one tape. While the program above would hardly be well balanced for a live concert, it does contain some fine music with good performances in most instances. Probably no tape collector would want to play the entire tape at one time anyway.

The three symphonies are winners here, well played and recorded with nice hall sound and stereo effect. The *Tannhauser Overture* is equally good. The *Capriccio Italien* is not up to the high standards of the rest of the tape, but this is only a small part of the total playing time. The *Rakoczy March* has a mighty impressive bass drum, but the exciting brass at the concluding climax is pretty well covered up. However, the three symphonies alone warrant the purchase of this tape, and for them alone, it can be recommended.



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

**STRAUSS:** *Waltz from Der Rosenkavalier*.

**DUKAS:** *The Sorcerer's Apprentice*.

**BEETHOVEN:** *Leonore Overture No. 3*.

**BIZET:** *Carmen Suite*. **VERDI:** *Overture to La Forza del Destino*. **TCHAIKOVSKY:** *Symphony No. 6 in B Minor, Op. 74 "Pathetique"* Graz Philharmonic, Florence May Festival, Mannheim National Symphony and the Sinfonia di London Orchestras conducted by Gustav Cerny, Vittorio Gui, Joseph Rosenstock, Miltiades Caridis and Muir Mathieson.

**LIVINGSTON 4T 100-1**  
4 track, 7½ ips  
\$10.95... 100 mins. 40 sec.

A collection of standard classics on a tape practically overflowing the reel, with performances ranging from adequate to very good. Apparently these were recorded some time ago; at least one of them was released on a two-track tape around 1953. Nevertheless, the over-all quality of reproduction is good, with big, resonant sound. Perhaps the best performance of the lot is the Verdi *Overture*. The major work on the tape—the Tchaikovsky *Pathetique*—has several lapses in orchestral playing indicative of insufficient rehearsal, particularly a tardy cymbal in the *Scherzo*. At a price of \$10.95, with a playing time of well over an hour and a half, this is an inexpensive way to build up a collection of classical tapes.



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

**TCHAIKOVSKY:** *Piano Concerto No. 1 in B Flat Minor, Op. 23*  
Van Cliburn, pianist, with the RCA Victor Orchestra conducted by Kiril Kondrashin  
**RCA FTC 2043**  
4 track, 7½ ips  
\$8.95... 35 mins.

This performance has been at or near the top of the best-selling classical record list since its release in mid-1958, and this newly released four-track tape should quickly become one of the best-selling tapes.

The pick-up orchestra sounds rather small to me, and the reproduction is nothing special. Van Cliburn is the drawing card here, and he provides a quietly spectacular, solid performance, clearly displaying the qualities which won for him first prize at the Russian Tchaikovsky competition. Processing to four-track tape has been well handled, with a minimum of hiss. It should be pointed out that a very good performance of this most popular of all concertos is available on Richmond RCH 40003, costing \$4.95, with Peter Katin as soloist, and better sound, surely a better buy than the Victor which is almost twice as expensive.



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

**RIMSKY-KORSAKOV:** *Scherazade, Op. 35*  
Chicago Symphony Orchestra conducted by Fritz Reiner

**RCA FTC 2017**  
4 track, 7½ ips  
\$8.95... 44 mins.

A truly extraordinary performance of this music, with Reiner and the Chicago Symphony in top virtuoso form, showcasing their splendid first-desk players. From a technical standpoint, this is equally fine, unquestionably one of Victor's best recordings, although perhaps just a mite overly resonant.

This new tape has strong competition, notably Vanguard VTP 1612, \$11.95, with Mario Rossi conducting the Vienna State Opera Orchestra, a tape which also contains four of the Liszt Hungarian Rhapsodies, with a total playing time of 85 minutes.

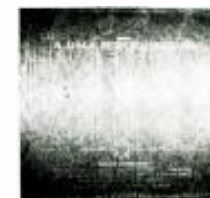


Music ★★★★★  
Performance ★★★★★  
Fidelity ★  
Stereo Effect ★★★

**RICHARD STRAUSS:** *Don Juan, Op. 20*  
Till Eulenspiegel, Op. 28  
Death and Transfiguration, Op. 24  
Cleveland Orchestra conducted by George Szell  
**EPIC EC 805**  
4 track, 7½ ips  
\$7.95... 53 mins.

This tape proves positively that the Cleveland Orchestra is second to none in the United States. Here are Strauss's three best-known symphonic poems, conveyed with bravura style and immaculate articulation on the part of the entire orchestra. Szell keeps tension high throughout the performances, and rarely does sentiment appear, and the result is exhilarating.

Reproduction is potentially very good; at least the stereodisc version was highly acceptable. Evidently somewhere in the tape processing something went wrong, as here the high frequencies are greatly boosted, with tape hiss accentuated accordingly, and bass seems a little light, compared with the disc version. It is to be hoped that later issues of the tape version will be better technically for the performances warrant the permanence of tape.



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

**JOHANN STRAUSS:** *Die Fledermaus* (complete operetta in three acts)  
Hilde Gueden, Erike Koth, Regina Resnik, Giuseppe Zampieri, Waldemar Kmentt, Eberhard Wachter, Erich Kunz and others, with the Vienna Philharmonic Orchestra, the Vienna State Opera Chorus, conducted by Herbert von Karajan



LONDON LOR 90030 (two reels)

4 track, 7½ ips  
\$21.95 2½ hours

*Die Fledermaus*, one of the most popular operettas of all time, here makes a welcome appearance on four-track tape in a distinctive performance, which follows a tradition sometimes observed in European opera houses.

In the second act of the operetta, at Prince Orlofsky's ball, London has masterminded some extraordinary entertainment for the assembled guests, with stunning results. Through maximum effect of the stereophonic medium they put the listener right at the party, and the goings-on are a delight to hear. Johann Strauss himself doubtless would have approved the results. Birgit Nilsson, the great Wagnerian soprano, sings *I Could Have Danced All Night*, sounding perhaps slightly uncomfortable, but obviously having a great time. Jussi Bjöerling's *Yours Is My Heart Alone* is practically worth the price of the tape by itself, and admirers of Ljuba Welitsch will find her beautiful singing of *Vienna City of My Dreams* a poignant reminder of one of the great voices of all times. The gala sequence also includes performances by Renata Tebaldi, Fernando Corena, Mario del Monaco, Teresa Berganza, Joan Sutherland, Leontyne Price, Giulietta Simionato and Errore Bastianini.

The operetta itself is superbly performed with a strong all-star cast. The Vienna Philharmonic and von Karajan get into the mood of the occasion, and it's all a lot of fun. With London's finest sound, this tape is certain to be a source of great enjoyment for everyone. The packaging is beautifully accomplished.

## SHOWS



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

### THE MUSIC MAN

Side One: Overture and Rock Island, Iowa Stubborn, Ya Got Trouble, Piano Lesson, Goodnight My Someone, Seventy-Six Trombones, Sincere, The Sadder-But-Wiser Girl For Me, Pick-A-Little, Talk-A-Little and Goodnight Ladies

Side Two: Marian the Librarian, My White Knight, Wells Fargo Wagon, It's You, Shipooi, Lida Rose and Will I Ever Tell You, Gary, Indiana, Till There Was You, Finale

Original Broadway Cast  
CAPITOL ZO 990  
4 track, 7½ ips  
\$8.98 46 mins.

This show ranks as one of the outstanding musicals of the last decade with a Broadway show as well as a road company now running and a movie version soon to be released. Capitol has issued a 4 track version equally as good as the two track original tape. Robert Preston's performance as the slick salesman is superb! He is the star of the show—a real "Music Man,"

especially when he does Seventy-Six Trombones, the big hit number, as well as several other engaging tunes. Barbara Cook as Marian the Librarian, lends her sweet voice to some tender ballads and the Buffalo Bills; an excellent barbershop quartet, give out some close harmony. The show is packed with fascinating tunes that have a way of making you remember them. Quality of sound is good but stereo effect is limited in giving the suggestion of stage movement.  
—F. N. West



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

### FIORELLO!

Side 1: Overture, On the Side of the Angels, Politics and Poker, Unfair, Marie's Law, The Name's La Guardia, The Bum Won

Side 2: I Love A Cop, 'Til Tomorrow, Home Again, When Did I Fall in Love, Gentleman Jimmy, Little Tin Box, The Very Next Man, Finale

Original Broadway Cast  
CAPITOL ZO 1321

4 track, 7½ ips  
\$8.98 . . . 47 mins.

This original cast recording offers an excellent performance of the best musical of 1960.

In addition to being a top-notch musical, there is a great deal of La Guardia lore woven into the theme—he was a pretty big fellow politically, always carrying the cudgel for the underdog and many times emerged the winner.

The songs are typical of the period when the little man with the big black hat held forth. A waltz rendition of "Till Tomorrow," good barbershop harmony in "Politics and Poker" and a roaring 20's "Gentleman Jimmie" number help to liven the score. Real good presence—just like hearing it from the stage, serves to bring out the splendid voices of the cast. You'll like it.—F. N. West

## POPULAR



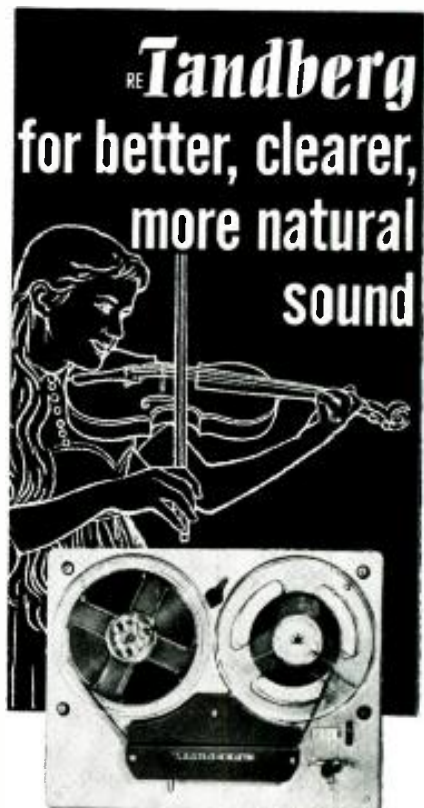
Music ★★  
Performance ★★  
Fidelity ★★  
Stereo Effect ★★

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Side 2: Body and Soul, Little Old Lady, Begin the Beguine and others.

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KAPP KT 45004  
4 track, 7½ ips  
\$11.95 . . . 67 mins.



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TAPE DECK \$498.

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## THIS TAPE FUN KIT CAN BE THE HIT OF YOUR PARTY

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Kit No. 1 contains ten scripts—all different—all amusing. These skits are excellent for affairs where a goodly number of party-goers are present. Everyone has something to say and he or she can say it as his imagination interprets it. The ten scripts encompass 26 different characters, 14 male and 12 female.

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Please send me Tape Fun Kit No. 1. I enclose \$2.00. (  Send First Class. I enclose 24c additional.)

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City ..... Zone ..... State .....

This tape contains two dozen of the songs that became popular in the period from 1930 to 1940, all well known and frequently played on most of today's programs. As played by David Rose and his orchestra, they emerge as pleasant, easy listening or background music while dining or reading. While not an outstanding performance, the selections are all hit tunes that will have a nostalgic appeal for many listeners.—*F. N. West*



#### MORE JOHNNY'S GREATEST HITS

Small World, Someone, Very Much in Love, You Are Everything to Me, Let It Rain, The Flame of Love, A Certain Smile, Call Me, You Are Beautiful, Teacher, Teacher, Stairway to the Sea, Let's Love

Johnny Mathis  
COLUMBIA CQ 300  
4 track, 7½ ips  
\$6.95 . . . 34 mins.

This is a group of additional songs that have contributed to the success of this popular young singer. He has a smooth and easy delivery, which makes it possible not merely to hear what he is singing, but to understand him. Columbia has done an excellent job with this tape—fine recording technique, close miked for presence, and Johnny right up front singing just to you. Good tunes, with arrangements to suit his style, by an unnamed orchestra.

For those who like Johnny Mathis, it is a grand tape.—*F. N. West*



#### OLDIES BUT GOODIES

Chop Suey; Medley: I Didn't Know What Time It Was, Three Little Words, Happy Go Lucky You, and others; A Romantic Guy I, It Must Be True, Clair De Lune, Drums In My Heart; Medley: Cuddle Up A Little Closer, Allah's Holiday, The Blue Room and others; Brazil, Moonlight Serenade, Grinzing Waltz

Griff Williams  
MERCURY STB 60068  
4 track, 7½ ips  
\$6.95 . . . 30 mins.

Here today and gone tomorrow is the unfortunate fate of too many of us. And this applies to the late Griff Williams, too, except that his memory will keep on living in our hearts and minds because of the excellent recordings he left as his monument. Sweet, full sounds, abounding with stereo effect and applied to all time favorites, "Oldies but Goodies" is aptly named, and ably executed. For those to

whom nostalgia has appeal, this is a real "must". You'll whistle and sing as well as dance as Griff brings real life and meaning to these incomparable selections.

Spacious ballroom effect has been added by Mercury recording engineers and is well done.—*F. N. West*



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

#### LIKE BONGOS!

Taboo, Glow Worm, Mack the Knife, Caravan, Baia, Bongo Frailich, Hawaiian War Chant, Babalu, Monterrey, Bongolina, Yankee Doodle Bongo, Tony's Wife

Conceived and arranged by Bob Rosengarden and Phil Kraus

TIME ST/2025  
4 track, 7½ ips  
\$7.95 . . . 31 mins.

The wide spread attention given today to percussive recordings is focussed principally on Bongos, whose principal forte seems to be a means of allowing the average person to take part in a musical activity without too much study. These little drums can be easily played by anyone with a sense of rhythm and with this tape you can play along with the ensemble, led by Bob Rosengarden and Phil Kraus, and add a helpful bit of accompaniment to the group. This is quite a listenable tape, full of stereo effects and considerable variety. Just the thing for Bongo fans.—*F. N. West*



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

#### TUTTI'S TRUMPETS

Track A: I Can't Get Started, Boy Meets Horn, What's New, Trumpet Soliloquy, Trumpet Tango

Track B: Bugle Blues, Tenderly, Louis, Trumpeter's Prayer, Southland

Camarata Conducts  
DISNEYLAND (Bel Canto) WDT-3011  
4 track, 7½ ips  
\$7.95 . . . 33 mins.

Tutti Camarata, a real trumpeter if there ever was one, gives vent to his partiality for this instrument in a musical extravaganza, supported by six of the country's top trumpeter men. As in his other productions, Camarata provides variety of attack, from full instrumentation to overgrown combos. Pleasing in all its aspects, this tape specializes in that smooth easy flowing melody that is a pleasure to hear. Of course, when they play "Bugle Blues," they depart from the smooth to exciting "beat stuff." You'll like the excellent recording, fine stereo effect, and particularly the fact that it's real good trumpet music.—*F. N. West*





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

**SATIN BRASS**

Side 1: Deep Night, In the Blue of Evening, A Ship Without A Sail, Sleepy Manhattan, If I Had You, Just Plain Bill  
 Side 2: First Floor Please, Chelsea Bridge, I Could Write A Book, Stairway To The Stars, You Look Like Someone, Night Flight

George Shearing  
 CAPITOL ZT 1326  
 4 track, 7 1/2 ips  
 \$6.98 . . . 35 mins.

Without losing its identity one bit, the Shearing Quintet combines its talents with a brass choir that scintillates in its own right—result? The smoothest, most distinctive musical sounds you can imagine. Through it all, George's piano leads the way—distinctive—never overbearing, but just right. His talent for arrangement enhances some of the not too well known tunes as well as his own compositions.

A pleasant tape, done in the best melodic Shearing jazz style.—*F. N. West*



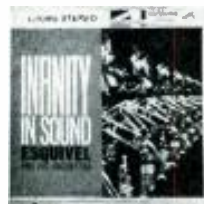
Music ★★  
 Performance ★★  
 Fidelity ★★  
 Stereo Effect ★★

**TOP POP INSTRUMENTAL HITS**

Mack the Knife, Swingin' Shepherd Blues, Dragnet, Peter Gunn, Canadian Sunset, Petite Fleur, Tequila, Moonglow and Theme From Picnic, Theme From A Summer Place, Theme From the Man With the Golden Arm

Cyril Stapleton and His Orchestra  
 LONDON RPE-45020  
 4 track, 7 1/2 ips  
 \$4.95 . . . 26 mins.

Cyril Stapleton demonstrates his fine interpretative ability in this offering of popular hits. From soft and sweet to loud and dramatic, he sways and romps through the various numbers with equal abandon. His musical arrangements are good, lively and responsive, and the orchestra has a big band sound. A pleasing tape with good stereo reproduction, typical of London's quality. Some slight tape hiss present occasionally, but is not objectionable.—*F. N. West*



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

**INFINITY IN SOUND**

Sequence A: Macarena, Autumn Leaves, Frenesi, Marie, Let's Dance, So Rare  
 Sequence B: Softly, As in a Morning Sunrise, Music Makers, My Reverie, Johnson Rag, Harlem Nocturne, Take the "A" Train

Esquivel and His Orchestra  
 RCA FTP 1034  
 4 track, 7 1/2 ips  
 \$7.95 . . . 34 mins.

Esquivel opened his bag of tricks with this one—novel effects—close miked instrumental sequences boom out at you with remarkable presence, only to be followed with soft, cooing choral passages.

Drums, bells, big band sounds and excellent piano passages are all combined through Esquivel's artistry into a rollicking set-to that wouldn't put anybody to sleep. Outstanding stereo effects with crystal clear recording make this a tape that will keep your interest to the end.—*F. N. West*



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

**TOGETHER**

Track A: Together, Paradise, Teach Me Tonight, Nyow, Nyow, Nyow, They Can't Take That Away From Me, I Can't Give You Anything But Love

Track B: When My Baby Smiles At Me, Let's Get Away From It All, Mashuga, Let's Call the Whole Thing Off, Mutual Admiration Society, Begin the Beguine

Louis Prima and Keely Smith  
 BEL CANTO (DOT) DST-25263  
 4 track, 7 1/2 ips  
 \$7.95 . . . 28 mins.

Here is a performance of the Prima-Smith combination at its best. You are invited to come in and pay a realistic visit to this inimitable pair as they romp through the various phases of their many-sided love. Warm, intimate, whispering, growling, purring, whatever the word—Mr. and Mrs. P. are really together on this tape. It's fun-lovin'.—*F. N. West*

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 Every Month!**



If you're a casual reader of TAPE RECORDING, if you buy the magazine just occasionally for a particular feature, now is the time to change, time to make TAPE RECORDING a reading habit. Every issue contains informative and interesting articles written just for tape recording enthusiasts, in addition to regular features such as Crosstalk, Industry News, Tape Reviews, New Products, Tape in Education, Shop or Swap, etc. Each issue also contains a New Product Report on the newest of recording equipment tested for performance by our staff. Think how convenient it will be to have all 12 issues per year delivered right to your door. Fill in the handy coupon NOW!

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 Severna Park, Md.

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# NEW PRODUCTS

## PHONO-TRIX MINIATURE RECORDER



A new, "pocket-size" miniature tape recorder plus a full line of accessories has been introduced by Matthew Stuart & Co., Inc., manufacturers of the Phono-Trix line of transistor tape recorders. Called the Phono-Trix "88", it weighs only 2¼ pounds, including batteries, and measures 1⅞" x 4¼" x 7½". It is fully transistorized and operates either on batteries (3 "C" cells and 3 penlight batteries) or A.C. A 420 foot reel of standard Mylar dual-track ¼" tape for the "88" costs only \$2.50. Each reel of dual-track tape provides 70 minutes of playing time. Forty hours of playing and recording time are obtained from each set of batteries. A deluxe hand microphone with duplicate start-stop controls for remote operation is offered as standard equipment, and a complete line of accessories such as tie-clasp mike, wrist watch mike, pencil mike, stethoscope earphones, etc. are available. It is priced at \$139.95. Write Matthew Stuart & Co., Inc., 156 Fifth Avenue, New York 10, N.Y. for more information.

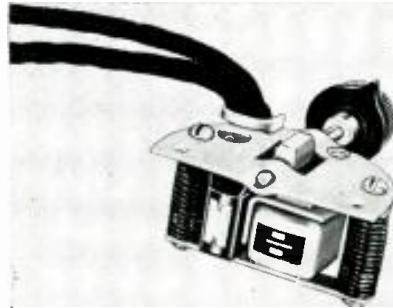
## KNIGHT MONOPHONIC RECORDER



Compact, and easy to carry, the new, low-cost Knight KN-4025 monophonic tape recorder, is offered by Allied Radio Corp., 100 N. Western Avenue, Chicago 80, Illinois. It is supplied complete in a luggage-type case and total carrying weight is 19 pounds. Reels up to 7" diameter may be used; speeds of 3¾ and 7½ ips are fingertip selected and a single-lever control is used for play-idle-record func-

tions. Other features include: 6-watt amplifier, built-in 5" woofer and 4" tweeter with electrical crossover network, separate volume and tone controls, input jack for recording from radio, TV, etc., and output jack for playback through external speaker. A pushbutton record interlock prevents accidental erasure of recorded material and a neon light level indicator aids in making clear, well-modulated recordings. Cost—\$86.95.

## 4 TRACK STEREO CONVERSION KIT



The Nortronics WR-60 four-track stereo conversion kit converts all Wollensak and Revere monophonic and 2 track stereo tape recorders to 4 track stereo. It consists of a 4 track stereo record/play head and a 4 track stereo erase head mounted in a head shifting mechanism. Rotation of the shifter control knob provides three vertical positions of the head assembly, permitting playback of both 2 and 4 track recorded tapes and recordings of 4 monophonic tracks on a single tape. Also, sound-with-sound recordings can be made with a single recorder. The second stereo sound channel for converting monophonic recorders is brought out through a miniature phone jack, and a patch cord is furnished to make connection to an external audio amplifier. The WR-60 is supplied completely wired and assembled for ready installation in the tape recorder. Prices and further information are available from The Nortronics Co., Inc., 1015 South 6th Street, Minneapolis 4, Minn.

## NEW ROBERTS RECORDERS



Two new tape recorder reproducers, Models 440 and 144 DPA, have been announced by Roberts Electronics, Inc., 829

North Highland Avenue, Los Angeles. Outstanding feature of these new Roberts recorders is the exclusive Roberts "Magic Memory" automatic repeat. All or any part of the tape may be repeated simply by pushing the "Repeat" button and setting the "Repeat" knob at the desired position. Complete 1800 feet tape rewind takes just 60 seconds. Thus, with the "Magic Memory," these Roberts recorders can play for a full nine-hour period with just six 60-second silent intervals during that time. The 440 Model comes complete with high fidelity power amplifiers and forward-facing stereo speaker system and is priced to retail at \$699.50; the 144 DPA is identical to the 440 except that it comes without the built-in power amplifiers and speakers. It is priced at \$649.50. Contact Roberts for more details.

## AMPEX INTRODUCES PLAYERS



Two new tape players are announced by Ampex Audio Company, Sunnyvale, California, which contain the Ampex playback head and basic precision transport mechanism as used in the Ampex Model 960 recorder/player. Both are two-speed (3¾ and 7½) and will play four-track stereo tapes, two-track stereo, full-track and monophonic.

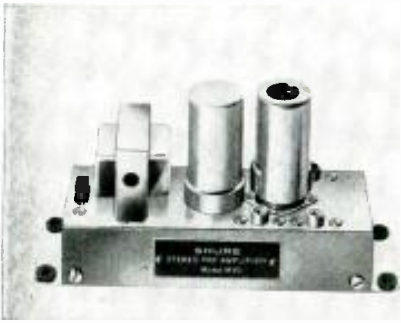
Model 934 is \$199.50, without playback preamplifiers (signal is picked up direct from the playback head for feeding to high-impedance tape head inputs of an external preamplifier).

Model 936, at \$249.50, has self-contained playback preamplifiers, equalized for connection direct to power amplifiers and/or an audio-control center.

Controls on both new models include fast wind, play, stop, speed-control to select either of the two speeds, and a head-shift lever to enable playing of four-track stereo or two-track. The Model 936 includes, in addition, listening level control, and on/off control. Write Ampex for full details.



## STEREO PREAMPLIFIER



Shure Brothers, Inc., 222 Hartrey Ave., Evanston, Ill. has announced a stereo preamplifier which permits the high-fidelity user to locate his turntable or record changer up to 50 feet from the main control preamplifier without signal loss. This M60 preamplifier provides greater flexibility in the location of components. Dual input and dual low-impedance outputs permit up to 50 feet of cable to be used between the preamplifier and the main control center. The M60 can also be used as a general purpose flat amplifier with a gain of 17 db per stereo channel or 34 db monaural gain with microphones, headsets, and test equipment. Frequency response is plus or minus 1/2 db from 30 to 80,000 cps and plus or minus 1 db from 20 to 600,000 cps; hum and noise level is better than 60 db below rated output; separation between channels is better than 30 db. Additional information is available from Shure.

## MAJESTIC MONAURAL PORTABLE



A new monaural three-speed portable tape recorder has been announced by Majestic International Sales, a division of the Wilcox-Gay Corporation. This recorder, model TK-35, incorporates Grundig-Majestic's function of superimposition recording, or impressing your voice over music, by simply pressing a button. It has a permanent built-in dynamic speaker and flywheel drive. At the speed of 1 7/8 ips, the frequency is 50 to 8,000 cps; at 3 3/4 it is 50 to 16,000 cps; and at 7 1/2 ips it is 40 to 20,000 cps. Maximum reel size is 7". Its switchboard contains tone and monitoring controls, tape counter, recording and level indicator. Price and complete details are available from Majestic International Sales, 743 North La Salle Street, Chicago 10, Illinois.

## JIFFY-RASE DEGAUSSER



The Rason Manufacturing Company, 3050 West 21st St., Brooklyn 24, N. Y., is marketing the Jiffy-Rase automatic magnetic tape recording erasure device. The Jiffy-Rase is 5 inches in diameter and it employs an instantaneous On-Off switch which controls the erasing. It is effective on paper, plastic, steel or wire recording materials. It helps provide a lower signal-to-noise ratio on all future recordings by neutralizing both the recording equipment and the tape itself. It is enclosed in an unbreakable high impact "Cyclocac" plastic case. For complete information and price, write to the manufacturer.

## NEW REEVES TAPE



Reeves Soundcraft Corp., Great Pasture Road, Danbury, Conn., has added two new Mylar based recording tapes to its line. The two new tapes are Soundcraft Hi-Fi 50M, and Hi-Fi 100M. Hi-Fi 50M on 1 mil Mylar base features 50 per cent more length plus extra strength in every reel. Hi-Fi 100M on super-strength tensilized 1/2 mil Mylar features 100 per cent more play on a reel. The DuPont Mylar base gives the two new tape products extra strength, greater stability, a high resistance to temperature-humidity changes, and improved tape-to-head compliance. These tapes also feature Soundcraft's "FA-4" frequency-adjusted oxide formulation to capture the full dynamic range of sound. Write to Reeves for full information and prices.



## RECORD & PLAY WHILE AWAY...

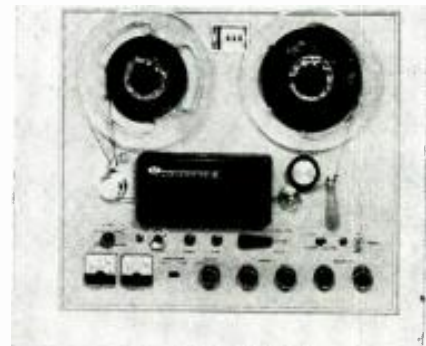
WITH *terado* POWER CONVERTERS PROVIDE HOME ELECTRICITY FROM THE STORAGE BATTERY

Now you can record or play your tapes anywhere . . . in car, boat or plane. Terado Converters change the 6 or 12 volt battery current to 110 volt, 60 cycle A.C., making your recorder and other electronic equipment truly portable. Models from 35 to 300 watts, all filtered for radios and tape recorders. List prices start at \$23.95.

See Your Electronics Parts Dealer, or Writer

*terado* COMPANY  
1063 RAYMOND AVE.  
ST. PAUL 8, MINNESOTA  
In Canada: ATLAS RADIO CORPORATION LTD., Toronto

## CONCERTONE REVERSE-O-MATIC



American Concertone, Inc., a Division of Astro-Science Corp., 9449 West Jefferson Blvd., Culver City, Calif., has introduced its new Reverse-O-Matic four track stereo tape recorder which permits the playing of an entire reel of quarter track tape without attention. It gives up to 1 1/2 hours of continuous stereo play when used at 7 1/2 ips or three hours at 3 3/4 ips. It features two separate four track playback heads and three hysteresis motors. Concertone is also introducing its Kit #540 for conversion of four track record versions of the Concertone 505 to permit automatic reversal. For further information, write American Concertone.



# CROSSTALK

from the Editors

IF YOU WANT TO see what can be done with tape, a visit to your local radio station in the near future might provide some very interesting and eye-opening items.

\* \* \* \* \*

RADIO STATIONS ARE swinging to not only tape, but tape automation for their programming. This was evident in the equipment being offered to radio station brass at the recent convention of the National Association of Broadcasters in Washington, D. C.

\* \* \* \* \*

ONE OF THE MOST fascinating machines was the Schafer Spotter and memory accessory group, made by Schafer Custom Engineering of Burbank, California. Imagine being able to dial, using a telephone dial, any spot on the tape. This can be done with this system and not only does it show numerically which spot on the tape is ready for playing but it will store and recall up to 200 spots feeding them in proper sequence from the dialed instructions.

\* \* \* \* \*

WHILE IT DOES use standard recorder decks (Ampex 354 and a Revere T-1100 in the memory unit) it is all controlled by some rather complicated electronics, as might be imagined. An announcer can dial a number, say 54, on a dial at his announcing position. The tape machine will go forward or backward until it locates spot 54, bring it up to cue position and show the number on a lighted panel so the announcer can double check. To put it on the air, he needs only to press a button.

\* \* \* \* \*

BY DIALING a whole sequence of numbers he can store on the memory tape a whole sequence of spots which the machine will then recall automatically and put on the air.

\* \* \* \* \*

OTHER FIRMS offered such automation as well, some of them permitting a whole day's programming to be set up in advance. The music playing tape will stop after a selection and another machine will switch in to give a station break, commercial, the weather, or what have you. When it concludes, it switches on the music machine again, and so on.

\* \* \* \* \*

CARTRIDGES WERE IN EVIDENCE likewise. Gates had a unit using the Eash cartridge. These were held in racks and the announcer selected the one desired, pushed it in the slot and pressed the button when it was ready for the air.

\* \* \* \* \*

THE COLLINS COMPANY had a recorder which used a 12 inch wide band of tape and the head could be positioned at intervals across it. The tape rolled up like a window blind, there was no capstan and roller.

\* \* \* \* \*

THE MACKENZIE ELECTRONICS COMPANY of Hollywood, California has brought to the broadcast field the cartridges which have been running in Disneyland for years. These are small and are stacked individually in separate holders. They pull from the inside and wind up on the outside, as do most cartridges; however, in this case, the inside hub is driven from the capstan so there is no strain on the tape. The pressing of a button puts any cartridge in play at any time and pushbutton control makes the selection.

\* \* \* \* \*

VIDEO TAPE MACHINES were much in evidence too, including one Japanese machine which, because of its head construction, could hold one frame still on the tape. Color and black and white were equally good and trick wipes, dissolves and cross-fades of the images were done merely by pressing the appropriate button on the console.

\* \* \* \* \*

WE BELIEVE THAT in the years to come a lot of these things will be able to be built into home-type recorders. Right now they are worth a mint of money, as might be imagined but with everything swinging to automation we may wake up some day to find automation in home recorders as well.

# INDUSTRY NEWS

NEW OFFICERS for Magnetic Recording Industry Association were elected at the annual meeting of the organization held in Chicago at the Parts Show. Kenneth L. Bishop, Bell Sound, is the new president, replacing Herbert L. Brown of Ampex who becomes a member of the board of directors.

Vice President is Victor Miller of the V-M Corporation, and Herman Kornbrodt of Audio Devices was re-elected secretary and Charles Murphy of Michigan Magnetics was re-elected treasurer.

Board members include Daniel Denham, Minnesota Mining and Mfg. Co.; William P. Gallagher, Columbia Records; John H. Ihrig of Webcor, Arnold P. Hultgren, American Moulded Products Company, and Neal Turner of the Heath Company.

RCA SALES CORP. will introduce new cartridge recorders which will be lighter, smaller and less expensive than the models brought out previously. They will be available in both monaural and stereo versions and have two speeds, 1 7/8 and 3 3/4 inches per second. The new units will be shown to the distributors in August and will be in the hands of the dealers sometime in September. The units will also have an adapter which will permit them to play reel to reel tapes.

MAGNETIC RECORDING INDUSTRY ASSOCIATION has presented to the USO for its clubs in foreign bases 20 tape recorders, libraries of recorded music and supplies of tape complete with mailing folders. This will enable soldiers, sailors and airmen to record messages to their families and send them home. In addition they will be able to play 4-track stereo in the clubs.

WOLLENSAK is setting up in-warranty repair stations in all principal cities for faster service to owners, according to J. C. Landen, director of marketing for the firm. In addition a new policy of price protection for dealers has been instituted. Price reductions initiated by the factory will be made good to the dealers with units on hand.

UNITED STEREO TAPES marketing manager Bill Muster will leave the firm for a new post as executive vice president and general manager of Pacific Network, a background music firm. Muster was UST's first employee and played a major part in getting 4-track stereo tapes in production and on the market.

EMC RECORDING CORPORATION of St. Paul, Minnesota, producer of educational tapes, will change its name to the EMC Corporation. The firm is also planning to move to new and expanded quarters at 174-184 East 6th Street where it has leased 14,000 feet of floor space.

LIVINGSTON AUDIO PRODUCTS, 147 Roseland Ave., Caldwell, N. J., has resumed the entire distribution of the Livingston tape line as well as those lines previously affiliated with Livingston. A new catalog will be issued shortly and dealer inquiries are invited.

COLUMBIA RECORDS has introduced its own brand of raw tape. A full line of various lengths and base stocks will be available. The reels are of grey plastic and are sealed in a polyethylene bag inside their boxes.

ROBINS INDUSTRIES has come up with a new idea—a "New Product Club for Distributors." Prexy Hy Post says the purpose of the club is to get the new products into the hands of the distributors before advertising and promotion appears. This will prevent customer disappointment. The "club" is broken down into a number of divisions and Robins distributors may join any or all. Larry Post is directing the new club idea and dealers interested in signing up should write to him at Robins Industries Corp., 36-27 Prince Street, Flushing 54, N. Y.

FRANK ROGERS, executive vice president of Reeves Soundcraft, and Mrs. Rogers are making a five-week swing through Europe visiting Soundcraft distributors in England, Germany, Italy and France to discuss expansion of Soundcraft sales overseas.

BELL SOUND SYSTEMS has brought out a new recorder employing the RCA type cartridge. The unit is no larger than a woman's vanity case and weighs less than 18 pounds. It is available in monaural record and playback and also as a stereo record and playback model. Another model, which has its own built-in stereo amplifier, will also be manufactured. The units will have both the 3 3/4 and 1 7/8 ips speeds.

John Boyers, one of the pioneers in the tape field and Bell's manager of engineering since 1956, has been upped to the post of manager of research and development. Merle Roberts has been named manufacturing manager.

MINNESOTA MINING'S new cartridge player has reached the factory prototype stage and dies can now be made for the special parts required. The manufacturing is being done at Revere, which became a part of 3M some months ago. The actual marketing date for the new device is not known at present.

THE MAC-NETIC TAPE COMPANY with plant and offices at High Point, North Carolina, will be in full production of magnetic instrumentation and computer tape in the very near future. The plant has complete testing and lab facilities and will concentrate on the production of the computer and instrumentation type of tapes. It may enter the audio field at a later date. The firm is a division of the Adams-Mills Corporation. C. E. Hart is vice president.

SAM BRISKIN, founder of the Revere Camera Company, died in Chicago on May 15. He arrived in this country as a 17-year-old immigrant sheet metal worker and over the years built up his firm until it became one of the leading manufacturers of tape recorders, cameras and projectors.

## EICO new Transistor Stereo/Mono 4-track Tape Deck

**Model RP 100W**  
Completely assembled, wired and tested with 3 heads, and stereo record and stereo playback preamplifiers.



**Model RP 100K**  
Semi-kit includes transport completely assembled and tested with 3 heads; and control electronics, stereo record, and stereo playback pre-amplifiers in easy-to-assemble kit form.

Write for full specifications

**TAPE STORAGE OR CARRYING CASE**  
reg. 9.95, now 5.95

(Heavy wood construction, waterproof vinyl covering. Holds up to 24 tapes.)

reg. 2.45, now 1.49  
(Pressed cardboard, holds 10 tapes or 60 45 rpm records.)



## SAXITONE RECORDING TAPE

Positive guaranteed not to rub off or squeak—or money back. Compare ours with other "Bartons" tape. You'll find it's more than just "piece" when you deal with us. We are original pioneers in the tape recorder business and our reputation means everything to us.

600' Acetate (plastic), 5"	.75
600' MYLAR 5" reel	.95
900' MYLAR (Polyester), 5"	1.68
1200' MYLAR 1/2 mil. 5" reel	1.18
1200' Acetate (plastic), 7"	1.19
1200' MYLAR, 1/2 mil. (strong)	1.68
1800' acetate (plastic), 7"	1.79
1800' MYLAR 1 mil. thick, 7"	1.99
2400' MYLAR, intensitized, 7"	2.69
2400' MYLAR, intensitized, 7"	2.99

## TAPE STORAGE CAN

Unique twist-lock insures dust-free moisture-proof, non-breakable. High impact styrene. Ideal shipping container.  
reg. 89c now 59c



Plus Postage  
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DYNAMICS  
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**25% off SALE 25% off**  
**ENTIRE STOCK PRE-RECORDED MUSIC TAPES**  
If we do not have it we'll order it for you

## NORELCO SPEAKERS

DISCONTINUED MODELS: Famous 9777—successor to 9710M (with cone—original list 39.95, 140-20,000 cycles usual NET 23.97, **NOW 14.98**). Also 3800M—list 16.00, usual NET 9.00, **now 4.95** while they last. PLUS POSTAGE. Other sensational speaker reductions on a first come, first served basis. SEND FOR SPEAKER SPECIFICATION SHEET.



## SAXITONE TAPE SALES

(DIV. OF COMMISSIONED ELECTRONICS, INC.)  
1776 Columbia Rd., NW, Washington, D.C.

## TAPE RECORDERS



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SLEEP LEARN KITS

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Free 1961  
Catalog

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Low cost, high  
quality recording  
tape, in boxes or cans.

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## RENT stereo tapes

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- 2-track and 4-track
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- Postpaid to and from your home

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stereo-parti **GO**

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## OVER 50% OFF

Pre-recorded Magnetic Tapes.  
900 titles in stock, available as  
2-track Inline Stereo or Monaural at  
7 1/2 ips, open reel only. Catalog  
\$1.00, refunded first order.  
Satisfaction guaranteed!

## CAL-WESTERN STEREO

P. O. Box 299  
Aptos, California

# TAPE CLUB NEWS

## Member Classification

The Magneto-Vox Club has announced that there will be two classes of members in its club. These will be Class A members who have paid full admission fee and yearly dues; and Class B (associate members) who will be accepted on a very reduced rate.

Class B will be composed of tape recordists who will not participate in Round Robin tapes and some other activities sponsored by the club, nor will they have voting rights, but they will have their names put onto the membership list with special identification, and will receive the complete list and supplements as they become necessary. Class B members will be free to exchange personal messages or general recordings with any other active Class A or B members.

If, at a later date, any Class B member wishes to become more active in club projects, they will be allowed to apply for Class A, and thus get their call-sign and participate in all club activities and also will benefit from all club services.

The fee for Class B membership is just \$1.00. To join, it is only necessary to send along the fee, your name and address, languages spoken and tape recorder information. The club address is listed in our roster.

## French Speaking Club Grows

When the Union Mondiale des Voix Francaises (World-Wide Union of the French Voices) was organized, people from Canada, France, Belgium and the U.S. rushed to join it. There seemed to be a need for a club using this language, and quite possibly there may be a need for other clubs using other languages. Articles about the French speaking club were published in various newspapers and the French radio broadcast special programs about it, all of which helped it in its progress.

Union Mondiale Des Voix Francaises is not exclusively for French people. Anyone who speaks French fluently or who is learning and wants to practice French is welcome. Many club international round-robins are circulating through different countries including France. This is a wonderful opportunity and yet the easiest way to know more about the living French culture and to make congenial French friends. For more information contact Emile Garin, club secretary, at the address listed in the roster.

## Hobby Organization

We have received a notice from Ralph Holder, who is the General Secretary of a newly formed tape hobby organization, known as "The Society of Tape Hobbyists." This is a group of young men dedicated to the use of tape. These fellows record music, sounds from life in general; they use tape in sleep learning; they build, design and repair tape equipment—in short, they do whatever they can think of to utilize tape.

This organization has an Executive Board which handles the business of the group, consisting of a chairman, vice-chairman and

general secretary. They also have a treasurer and two permanent departments—public relations and a technical dept. which is in charge of technical planning, service and repair of equipment and the club's monthly publication called "The Tape Journal."

The Tape Journal is published monthly and mailed out to interested parties in tape reproduction and audio fidelity. This group wishes to know of any organizations on the

## JOIN A CLUB

TAPE RECORDING Magazine assumes no responsibility for the management or operation of the clubs listed. This directory of clubs is maintained as a service to our readers. Please write directly to the club in which you are interested regarding membership or other matters.

**AMATEUR TAPE EXCHANGE ASSOCIATION**  
Ernest Rawlings, Secretary & President  
5411 Bocage Street  
Cartierville, Montreal 9, P. Q., Canada

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

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

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

**INDIANA RECORDING CLUB**  
Mazie Coffman, Secretary  
3612 Orchard Avenue  
Indianapolis 18, Indiana

**MAGNETO-YOX CLUB**  
J. M. Roussel, Sec.-Exec.  
8140, 10 Ieme Avenue  
Montreal 38, Que., Canada

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

**STEREO INTERNATIONAL**  
O. B. Sloat, Director  
1047 Flatbush Avenue  
Brooklyn 26, N. Y.

**THE VOICESPONDENCE CLUB**  
Charles Owen, Secretary  
Noel, Virginia

**UNION MONDIALE DES VOIX FRANCAISES**  
Emile Garin, Secretary  
886 Bushwick Avenue  
Brooklyn 21, N. Y.

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

## OVERSEAS

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

**ENGLISH SPEAKING TAPE RESPONDENTS' ASSOCIATION**  
Robert Ellis, Secretary and Treasurer  
Schoolhouse, Whitesome By Duns  
Berwickshire, Scotland

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

**THE NEW ZEALAND TAPE RECORDING CLUB**  
Kenneth M. Tuxford  
P. O. Box 7060  
Auckland, W. I., New Zealand

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

order of theirs and would like to tapespond with them.

For more information about the Society of Tape Hobbyists, we suggest you write to Mr. Holder, 116-06 139th St., So. Ozone Park 36, N. Y.

## ATE Board of Governors

"The American Tape Exchange, PO Box 324, Shrub Oak, N. Y., is now operated by the following board of governors: Director—Cortlandt Parent Jr., Peekskill, N. Y.; Associate Director—Sam J. Yanofsky, Halifax, N.S.; Newsletter Editor—Evelyn Upton, Massapequa Park, N. Y.; Network Control—Lee W. Holm, Brainerd, Minn.; Librarians of South African Tapes & Slides—Fred and Francis Godwin, Phoenix, Ariz., and, Founder and Advisor—Stuart Crowner, Chapel Hill, N. C. These seven officers, scattered across the United States and Canada, keep in contact with each other by means of a round robin tape."

## WTP Seeks Tape Exchange News

Tape enthusiasts everywhere who exchange personal tape messages with friends in other countries are urged to send news of such tape exchanges to Harry Matthews, Chairman of the Tape Recording Committee of the People-to-People Program, for inclusion in the People-to-People News.

"There is no activity available to the average person which has more People-to-People appeal than tape exchange," says Mr. Matthews. "In order for Tape Recording to be given more public recognition as an important People-to-People activity, we need more news of individual tape exchanges." All news should be directed to P.O. Box 9211, Dallas 15, Texas.

## Ohio District Deputy Contest

A spirited contest has developed in the Ohio District Deputy election being held by The Voicespondence Club. Jack and Mary Conrad of Hamilton, Ohio, are running as a team against incumbent Dan Moran of Marion, Ohio. Dan, who has been the Club's Ohio District Deputy since its incorporation as a non-profit organization in 1955, has served his constituents well over the years. The Conrads have been active as counsellors to the Club's teen group and as assistants on its Service Committee to aid the handicapped, and are well-known throughout the membership for their faithful help. Whichever way the election goes, it is certain the Ohio members can't lose!

## Mid-West Tapevention

Do you live in the mid-west, and would you like to meet and talk to other recordists? Then you are invited to make plans right now to attend The Voicespondence Club's mid-west Tape-Vention to be held Saturday, August 19, at the home of Dr. and Mrs. Ernest Norris on E. Shore Drive, just south of Culver, Indiana. The Norris home is on beautiful Lake Maxinkuckee, and ample facilities for picnicking, bathing, and boating will be available. You do not have to be a member of the Club to attend and there is no charge of any kind—except you'll have to furnish your own eats! Most of the Club's officers are planning to be there, and you can meet them and talk recording to your heart's content.



# TAPE IN EDUCATION

Robert C. Snyder

(This month's column continues a series begun in March)

What are the principal contributions that programmed learning techniques can make to educational theory and administration?

First, programmed learning is based upon the concept that information must be presented in an orderly fashion in small manageable bits in logical sequence so that each new bit of information presented is soundly based upon those which have preceded it.

Second, the system incorporates a testing procedure which automatically requires the student (or learner) to demonstrate at each successive step that he has learned and understood the application of the bit of information just presented—plus, in many cases, its relationship to other bits of information and/or concepts presented earlier—before permitting him to move on.

Third, the testing process automatically requires the learner to go back and learn unlearned or misunderstood bits or sequences of information or instruction before proceeding further.

Fourth, when the student has properly learned and understood the information and instructions received, the testing procedure informs him of this fact at once by indicating that his reply is correct and permitting him to move forward, thus providing reinforcement to the learning already accomplished.

(Incidentally, current programmed learning terminology defines *information* as the specific fact, principle, or bit of knowledge presented, and *instructions* as the directions which tell what use is to be made of the *information*, or what is to be done with it or about it.)

Several valuable concepts are implicit in the principles of programmed learning which have often been overlooked in the preparation of instructional materials and instructional programs in the past.

For one thing, confusing and distracting elements which interfere with successful learning are intended to be eliminated during the process of programming the particular sequence of instruction in order to permit the learner to move most directly to the learning desired.

For another, the student is caused to move from "success to success to success" rather than through a sequence of partial or complete failures. It should be obvious that the procedure of requiring the student to master each small element successively before moving on to the next element will produce better learning, and experimental evidence bears out the greater degree of learning and retention in the programmed learning procedure as compared with conventional methods of instruction in which testing and reinforcement (through learning the results of the tests) are often only remotely and loosely connected with the sequence of instruction.

In conventional instructional methods, the student is not only permitted but is required to move forward through the instructional sequence whether he has learned and understood the preceding instruction or not.

Moreover, in programmed learning the testing procedure is directed entirely at determining whether the student has or has not learned the specific item or sequence under instruction and is never designed to be deliberately difficult, tricky, or obscure, as examinations sometimes are in conventional methods of instruction.

Programmed learning techniques by design, therefore, put the emphasis on learning, application, and retention of information and concepts at the optimum rate for the learner rather than upon any necessity to move at a predetermined rate.

As a consequence, programmed learning techniques, when applied in an auto-instructional or teaching machine system, permit the student to move as slowly as necessary, or as rapidly as he is able, without throwing a classroom instructional procedure out of order.

This flexibility in speed of progress makes it possible for the individual learner to move at varying rates through different courses of instruction in a school situation and thus gives a clear indication of a practical method of moving the school of the future away from lock-step classroom teaching and into the ungraded type of school. In the ungraded school, the student is able to progress successfully to the maximum of his abilities in accordance with his individual profile of aptitudes and motivations rather than being required to conform to a generalized pattern which may not be at all suited to his individual skills and interests.

The skillful and successful teacher may well say that there is nothing new here, that these are the ideal principles which are used in tutoring and should be used in all teaching.

This is true, but the difference is that programmed learning and teaching machine methods offer the first practicable opportunity for applying these principles to the instruction of large numbers of students simultaneously.

In other words, *programmed learning and teaching machine methods approach the ideal situation of providing each student with a one-to-one relationship with an individual tutor for each subject.*

Such methods will not do away with the skilled teacher, but they will greatly increase her efficiency. In conjunction with new techniques of organization of teaching and school clerical work (such as those being recommended by Dr. J. Lloyd Trump of the National Association of Secondary School Principals—a division of the National Education Association, Washington, D. C.), these methods will permit the student to instruct himself in as much of the material as he can manage by himself.

The well qualified teacher will thus be enabled to concentrate on those areas of instruction which are beyond the auto-instructional abilities of individual students or which lie outside the areas of the programmed course, but within the scope of interest of the exceptional student.

And, the student will benefit from a sys-

tem of education suited to his requirements and adjusted to his abilities in which he can achieve to the maximum of his ability, whatever his level of ability may be.

Is it fair to ask how many presently unhappy and unsuccessful people might have become adjusted and successful in a field suited to their talents and interests if our educational system had, in the past, been designed to conform to the needs of the student rather than designed to make the student conform to it?

A point of interest to educators, of course, is relative costs of programmed learning and teaching machine systems as compared with conventional methods.

First, it must be recognized that the teaching machine, itself, is only a device for administering a programmed sequence of instruction. The device, in itself has no value beyond the value of the course administered through it.

Consequently, the types of teaching machines or administering devices used in the future can be expected to be determined, at least in part, by the comparative costs of the results obtained by the various machines or devices.

It is worth noting that the scrambled book appears at this moment to have just as much value in auto-instructional systems as does a comparable sequence of instruction administered through a "box" using discs, printed tapes, etc.

In a paper entitled "Some Economic Realities of Teaching-Machine Instruction," presented at the meetings of the American Psychological Association in Chicago, Illinois, on September 3, 1960, David J. Klaus and Arthur A. Lumsdaine reported that through use of microfilm in inexpensive projectors (which they state can readily be developed) or through large issues of inexpensive pocketbook editions, the costs of programmed learning methods can be brought down to \$1.00 or \$2.00 per student per course per year.

This is a figure which is not unreasonable for other textbook and instructional materials costs at the present. And, if the programmed learning methods produce the superior results and flexibility of education expected, then surely these costs are well within reason.

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# FEEDBACK

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

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

## Cartridge Correspondents Wanted

To the Editor:

I would like to correspond with others who have a cartridge type tape machine. I have an RCA recorder and am very satisfied with its operation, especially the cartridge itself which, in over a year, has yet to cause me the first minute's trouble. Recorded tape is not available locally but is obtainable out of New York City and undoubtedly other places. I know these machines are few and far between but if they will manufacture them up to the quality of mine I can see a future for them. If I am not mistaken, the gap in the playback head is so narrow that the fidelity at 3¾ ips is as good as machines using 7½ ips. I have thought about joining some of the tape correspondence clubs but due to the scarcity of these machines I thought it best to use this medium to contact others with the same type player as mine. Let me hear from anyone with a cartridge player.—*Duane Davidson, RR #3, Lafayette, Indiana.*

## Crestwood Wanted

To the Editor:

I am the same fellow who wrote you regarding the AC hum in the Crestwood a year ago. I still have the Crestwood and am thinking of buying another one just like it . . . IF I could locate one. Maybe you could assist me in finding a Crestwood 303 in good working order. I like these machines as they do an excellent job, are very easy to use, and although they would be considered a little obsolete for this age of stereo, I would buy one if I could find one reasonable enough. Most of the recording I do is from FM although I do record some weddings, etc.

I want to again congratulate you folks on your excellent magazine.—*Leonard Blanchard, PO Box 253, Clayton, N. Y.*

*Anyone have a 303 in the closet?*

## Noise?

To the Editor:

I need not say anything about liking your mag as plenty of others have already done it far better than I would be able to do it.

I, however, have a pet peeve which disgusts me highly when I read copies of letters

sent you claiming that a stereo copy from a fonograf sounds better than a monaural. The latest one of these letters came from W.M.H. of Williamsport, Pa., saying he improves a fono record by copying using stereo.

May I ask him whether he means an improvement of tonal quality or an improvement in the volume of the sound he obtains?

If he is a volume bug, I will agree that his copy of a monaural fono record onto a stereo tape definitely will give him a much greater volume. May I suggest he do a bit of experimenting. Copy the same record using a full width head and he will get the entire full volume greater than he gets on his stereo job . . . yes even on twin track stereo. I may also suggest that he will get greater volume if he buys a 500-watt amplifier.

Why can't the magazine run an article explaining that a single source of sound would produce strictly monaural whether copied on a monaural or on a stereo tape. I am supposing that there are strictly no echos. Let us suppose a copy is being made from a fonograf (directly coupled) violin solo, person singing or talking, Hammond organ or any other single source of noise. There can only be monaural production of that noise. Yes, it even includes a baby bawling.

Let us get down to cases. I am definitely not talking of volume now but strictly of tonal quality. I have already agreed that he would get greater volume by using 2 tracks. I have done the same thing by changing the heads on my Crown to full track.

Would it be possible for you to write an article explaining to these that they are struggling against a mistaken idea in copying a monaural source onto stereo tape. These persons are generally kicking about the high cost of tape. They would save tape if they took the monaural look at sources of noise.

Before you or anyone else tries to call me on my use of the word "noise," may I suggest that they look up the word in Webster's and they will find that noise is noise whether it is Harry James, Louis Armstrong or merely the brat squawling. If WMH would care to argue this out on a tape letter, let fly.—*Roy E. Madden, 47 Third Street, Costas Court, Lodi, N. J.*

## Almost—

Much of your Crosstalk page in the February issue (*about cooperation between radio stations and tape recordists—Ed*) pleases me although the line "If tape recordists paid more attention to the creative side of the hobby, etc.," doesn't exactly tie in with the cover pix, which to my notion is just an unworthy purpose of tape. But anyway—

I actually put together a sequence such as you suggest, on the off-beat subject of the Chicken in Music. First I wrote a script, then made a mock-up tape, using excerpts from all my disc recordings of music por-

traying or imitating chickens, interspersed with readings of short lyrical poetry or humorous verse about chickens, with women's voices doing the hen pieces and men's doing those of the roosters. The timing was noted on the margin of the script.

The idea was then presented in detail to a local non-commercial listener supported station in Berkeley. They liked it and asked to see the script. They were all for doing it, but with their own equipment, which was vastly superior to mine. That was fine with me and they were on the point of making the tape when an accident put my leg in a cast. By the time I was able to climb their long stairway again, they had been taken over by a station in New York and they were too busy and too serious, suddenly, to play around with my little notion.

I still think it was a good idea and I hope your editorial stimulates more of the same.—*Mrs. P. T. Hering, Los Altos, California.*

## Sturdy Tape Boxes Needed

To the Editor:

I have been a regular reader of your magazine for 5 years and have a pet peeve I would like to air. Why is it that the people who manufacture tape, ALL OF THEM, stress that tape will last for years . . . and then they package the same tape in flimsy cardboard boxes that fall apart in a week? Couldn't they put the lifetime tape in a better box? I have over 100 reels of tape in shabby boxes. I don't like tin cans either. Couldn't they put a coat of clear plastic to strengthen the boxes and keep them from falling apart? How about some help on this subject.—*J. B. Donald, New Orleans, La.*

*Plastic containers can be obtained from Ferrodynamics, Lodi, N. J. or American Tape Co. 1122 S. La Cienega Blvd., Los Angeles 35, Cal.*

## Civil War Sounds

To the Editor:

I am in need of Civil War sounds, battle noises, the firing of Civil War type guns, music and other sounds from that era for a series of documentaries. Perhaps you can assist in locating such sounds for me.—*Robert H. Farson, WCTC, New Brunswick, N. J.*

*Anyone who has taped any of the re-enacted Civil War events, including the firing of the old pieces is invited to write directly to Mr. Farson.*

## It Could be the Reel

To the Editor:

I have been using tapes of various makes for as long as tape has been in use ( I had a wire recorder before that) and I still use these tapes after many erasures.

Once in a while one of them develops a squeal and I have found that sometimes it is not the tape but the reel. I take some Long Life lubricant and with the brush that comes in the bottle go over the top edges of the reel of tape. Also I clean the inside of the reel with the lubricant for the reels do get soiled at the edges from handling. I have no more trouble with the tape squeal. I thought this might help someone with the same trouble.—*Mrs. Charlotte de Min, Phila., Pa.*

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# 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 question will be used in this department.

## Checking for Splices

**Q**—Is there any quick way of checking tape for splices? I am wondering if one could purchase a reel so transparent that by holding it up to a light would reveal the splices.—M. M. H., Andes, N. Y.

**A**—Splices can almost always be seen if the reel of tape is held up to a strong light and examined carefully from the side. The regular plastic reels offer no resistance to this type of inspection.

## Two-track—Four-track

**Q**—I would like to ask you a question about two-track tapes. I have seen no reviews at all in yours or any other high fidelity magazine of two-track stereo tapes. Are these out of production? I have a two-track stereo Ampex machine and as I have been given the impression that the two-track tapes are superior in reproduction to the four-track, would like to be able to procure the two-track rather than have my machine converted or purchase a new four-track recorder.—K. S., Philadelphia, Pa.

**A**—Improvements in heads, duplicating and amplifiers have resulted in four-track tapes being the equal of the older two-trackers and it might be a good idea for you to convert your present equipment to handle four-track. This is easily done and for a nominal sum which you should quickly recover in savings between the costs of two and four-track tapes. If you do convert to four-track, the unit will still be able to play the two-track tapes you now have although you will not get the same amount of volume out of them at a given setting.

Bel Canto, Livingston, Columbia and RCA still make two-track tapes. All the tapes handled by United Stereo Tapes are four-track only. Your dealer can obtain two-track tapes for you.

## Crosstalk

**Q**—There is a problem to which I cannot find a solution. I have a Viking 85ESQ with RP62 preamps with which I cannot play back 4-track recorded tapes satisfactorily. The confusion of sound is intolerable.

It appears that there is cross channel interference of some kind. Also, I note that on one tape, side 1 is much longer than side 2. When side 2 is completed you hear faintly the other track. I therefore will not purchase any more tapes.

I do not have this trouble with my own recorded 1/2 track tapes. Hoping you can enlighten me in regards to the above as this is a most discouraging thing.—G. M. B., Philadelphia, Pa.

**A**—We would say that your problem is simply one of improper head alignment. To check this put a recorded four-track tape on the recorder and play it. With a pencil

or similar, shift the position of the tape as it plays until you clear up the crosstalk and it is no longer heard. This will indicate the direction in which the head must be moved to make the permanent adjustment.

Shift the heads in the indicated direction and play the tape again, continuing the adjusting process until the crosstalk stays out permanently.

Tapes which you have recorded yourself on the machine will naturally play back properly without crosstalk because they are running over the same heads on playback as were used in making the recording. However, to use commercially recorded tapes your heads must conform to the standard used on the duplicators, so it is you who must make the shift.

After the adjustment has been made for proper positioning of the heads, the azimuth should be checked to make sure that the head gap is vertical. This can usually be accomplished by ear, adjusting the head slowly with the azimuth adjusting screw until maximum volume is obtained on the highs.

The length of music on one side of a tape will seldom be the same as that on the other. Unfortunately, the composers didn't give a boot how long or short they made their compositions and, as a consequence, have caused many sleepless nights for the tape library people who must join together on one reel two different compositions.

## White Box Tape

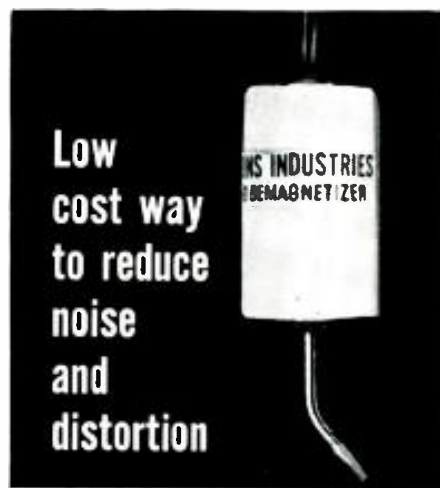
**Q**—I have bought several reels of "white box" tape over the past couple of years—one mil. After several months of storage without use, under perfectly favorable conditions, I found that some of these reels were perfectly good. Others, however, developed a curl at both edges, making a snug wind impossible. I had to make copies and scrap the originals. Is it possible to suggest probable causes of curling?—R. E. P., N. Bellmore, L.I., N.Y.

**A**—Curling or cupping is usually due to a differential absorption of moisture by the base and binder although it may also be brought on by improper tracking in the slitting machine when the tape was cut from the web or by careless winding or an improperly adjusted recorder. Once the tape has been deformed the best treatment is that which you gave it—make copies and discard the originals for it can never again be made to wind properly. Excess tension in winding the tape on the reel is to be avoided.

## Footage Indicator?

**Q**—I own a tape recorder which is supposed to be a good one (judging from the price paid) but there is one thing which puzzles me.

As I understand it, if the machine is operating properly it should run 37 1/2 feet



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per minute of tape yet the footage indicator on the machine shows only 25.3 feet. Why should the footage on the indicator pick up from 18 ft. on the first minute to 41 ft. on the 42nd minute? I just supposed that the footage indicator was controlled by the tape through the head, not by the revolving spindles or the reel. I use the recorder in conjunction with the projection of home movies and would like to get some semblance of synchronization.—J. L. R., Polson, Mont.

**A**—Most indicators on tape recorders do not show the footage or time but are simply numbers which allow you to find any spot on the tape in fast forward or rewind. Movie camera indicators are, of course, footage indicators since this is important and the only way of knowing how much film may be left in the camera.

Since the device is simply an indicator you will have to make up your own time scale based on the numbers. Once your film editing is completed you could make the recordings while the projector is running or make them on a time basis and edit them to fit the running time on the projector.



# Recording a Radio Show in Portugal

by John H. Lerch

*... business and pleasure combine in this recording assignment.*



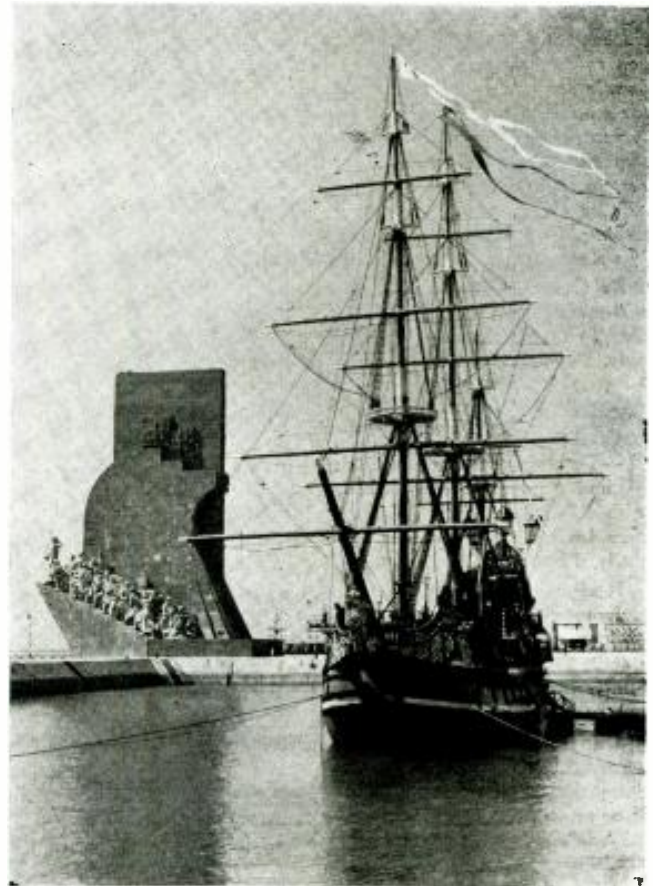
Merry-making during festival at Viana do Castelo. There is quite a bit of folk singing to record at this gathering. These women carry gaily decorated baskets on their heads.

THE sudden flare of rebellion which focused melodramatically on the Portuguese cruise ship, *Santa Maria*, has receded into history. And Portugal resumes its traditional placid posture; although we know for certain that all is not well in the slumbering dictatorship of Salazar. However, less than a year ago, in August, 1960, the much-anticipated special event of the year was a positive, peaceful one: an international naval review in honor of Prince Henry the Navigator and the "Age of Discovery." Imagine, if you will, a day of halcyon skies, fleecy white clouds, and the reflected glitter of a few hundred diplomats, admirals, generals, and scholars assembled at Sagres (site of the original School of Navigation) to commemorate Portugal's past glory. From the press box in a specially constructed reviewing stand, alongside the BBC, Eurovision, Emissora Nacional, RDTF, and Radio Italiana, I witnessed the modern "armada" of NATO ships sail slowly from Sagres to the port of Lisbon. This was part of the story I had come to record and to include in my documentary treatment of modern Portugal.

Perhaps I ought to begin with a short word of introduction about the nature of reporting special events overseas. Journalistically, there is no difference in the technique that one would use in covering the Cleveland Air Show, the Pasadena Parade of Roses, the New York Horse Show, the

Inauguration, or maybe Old Sturbridge Village's Muster Day. Hopefully one is briefed on the importance of the event, identifies the performers, is aggressive enough to get the story completely and accurately. In Europe, however, a journalist conducts himself differently. Reserve, restraint, diplomatic politeness are essential; and a brash, impertinent approach really repels! The key word is gentlemanliness. Credentials are absolutely necessary. I would far rather have lost my passport in Portugal than the green-colored identification paper from the Central Information Office in Lisbon which stated the purpose of my visit: "to record a radio program in Portugal for the Canadian Broadcasting Corporation." It took considerable effort, waiting, and pressure to obtain this. But I know from previous experience in Spain that one must carry papers. And I also knew how to get tapes through customs!

Ingenuity is tested daily in a country like Portugal. The slowness of pace and the quadrupled red-tape are genuinely



A Portuguese caravel or three masted schooner of the Age of Discovery. Monument of Prince Henry, the navigator, unveiled at Lisbon, August, 1960, is seen in background.



John Lerch, the author, interviews Celeste Rodriguez, one of Lisbon's leading singing stars who specializes in the fado—the typical sad song of fate.

frustrating. However, an active internationalist learns how to cut corners and to dig in quickly. If you are really an "intercultural-adaptor" you will thrive on a foreign assignment and there will be few roadblocks; moreover, a warm smile and a ready sense of humor will let you glide over linguistic barriers smoothly. Your supreme concern should



A girl from the Duoro Valley. She is from a village near Oporto. Heavy silver and gold filigree jewelry is worn about the neck.

be that of the late Frank Buck: Bring 'Em Back Alive—on tape! And so if you are functioning effectively as a field reporter in Portugal or Laos or in Cuba these days you become a kind of one man task force, an unofficial information agency. There are times when you can corroborate or correct the natives! Information that is fresh and accurate is sometimes maddeningly hard to get, despite the government's over-all wish to disseminate it. Remember that in Portugal there is no free flow of information as we know it; the country is hermetically sealed in a sense. There is no real press, no vital journalism, no medium for the exchange of ideas other than at universities on a limited scale. And one sees this in the people themselves: they are quiet and subdued. The Portuguese are sometimes described as a "closed society"—an interlocking network of cousins.

It is important, also, to suspend judgment, not to make up your mind what final shape this program will take, not to pre-conceive your material. My best advice on this is to prepare by wide reading beforehand so that you have an accurate economic profile of the country in your mind; but develop your leads on the scene, keep a log book of contacts, interview potentials, subjects, and ideas in general. And be ready to discard this at once if you meet a really rich "source." Sadly enough, the professional is rarely satisfied and realizes too frequently that he just scratched the surface when it is time to pack up and leave. Here then is another test of ingenuity: strategically arrange even thin material in the best light possible!

#### ON THE ROAD RECORDING

I had given myself seven weeks to do the job which I felt was ample both for pleasure and for business. In fact, I tackled the job at once so that I could theoretically loaf many days in the sun at Estoril. I had entered Portugal at Vilar Formoso coming in from Spain. I was driving a new Volkswagen and my trusty EMI (Electrical Mechanical Institute Recorders, made at Hayes, Middlesex, England, retail for about \$395 without microphone) was right beside me. My recorder is two years old, is not transistorized, and does not have direct loud-speaker playback as do the latest





Top: A pousada, or country inn, operated by government control. This was at Sao Braz d'Alportel where the author headquartered for his two weeks stay in the Algarve. Bottom: Typical Algarve farmhouse. People here express their individuality through the decorative chimneys on these houses.

models. The older EMI used for years by both the BBC and the CBC weighs about 14 pounds and is a most trustworthy piece of equipment. Incidentally, to lessen the jolt of knocking about in the car and in accidental bumping, I had placed three strips of half-inch thick foam rubber on the bottom of the recorder and two sides—snugly tucked in between the outer case of the recorder and its canvas carrier. I brought in about 10 small tapes (600 foot reels which at 7½ ips meant 15 minutes each). But I had a supply of about 20 waiting for me in Lisbon. Essentially, I wished to convey some of the excitement and enthusiasm of a new adventure, a discovery. This is part of the secret of a good show, isn't it? Mine was going to be a "regional exploration" of an ancient land. I saw my material roughly in three large blocks: (1) authentic music which I would record, getting my own *fados* or songs of fate in Lisbon and in the South. (2) A galaxy of mixed sounds and activities both as background and essential illustrations: fish markets, bells of a country church, train station in Lisbon, fireworks shot off at a "romaria" or fair. (3) The outside narrator, actually a Portuguese journalist it developed, who would contrast my views (as co-narrator) add balance, and serve as the "patiently explaining" voice of experience.

The program as I originally sketched it out in my mind before arriving in Portugal, would be divided between three regions: the North centering around Oporto; Lisbon and suburbs; and the extreme southwest, the Algarve. It worked out that the program is roughly divided into three almost equal portions along these lines.

Realistically speaking, my journey began in the misty Duoro Valley in the North. And I made my headquarters for about a week in Oporto—Portugal's second city. It is the business capital of Portugal, noted for its Port wine, which along with cork and sardines constitutes the eternal trio of Portuguese industry. I stayed most comfortably at the Gran Hotel do Porto which provided its guests with free bottles of Port and three gargantuan meals a day. The first day of serious recording, I bagged the following: an auctioneer selling housewares in an open market, a fishmonger shouting her wares very musically, a scissors sharpener plying his trade with an ocharina as symbol of his work, the sound of which is very pleasing; an interview in remarkably good English with an affable wine exporter. These street noises later blended into a sound-montage showing busy activity and tending to offset the notion of "tranquil" Portugal. The next day I had secured an interview with the Director General of the Port Wine Institute who spoke for 15 minutes about the history and importance of the valley, the sunlight on the grapes, the soil, and the world importance of Port wine. He had to be cut to one minute in the final version.

I also used the local studios of Emissora Nacional—the National Broadcasting Agency of Portugal. This was a regional station with 2-3 studios, Ampex equipment, a music library, and an affable and most congenial staff. We went out to Viana do Castelo, up in the mountains, in the Emissora staff car using *their* Nagra and an engineer; and we recorded the folk-singing of this most colorful country festival.

This was a tremendously exciting affair, with all the zest and fun of a country fair which the local people put on for their *own* amusement. People everywhere in the North were cooperative when I questioned them or asked directions or needed help. But I did meet up with one case of official government censorship—self-imposed. I was talking with the Director of the Experimental Theatre over coffee. He was most voluble, expansive, free and easy before we went to the studio to record. There he clammed up and said monotonously "Yes" or "No" to my over-long questions. I found out later he was really afraid of reprisal in the event this got out that he complained about Lisbon's interference with the selection of plays, etc. But, on the other hand, one famous artist, a portraitist in Oporto, Antonio X— admitted that he could not work freely in Portugal and made his money and his fame elsewhere. He had painted Greta Garbo and other celebrities in Paris; and this was his preferred headquarters.

The mood and morale of average Portuguese were important to the show, and I came up with some fine discoveries. The bits and pieces were adding up; and I saw that they were patient, humanistic, humorous, certainly hospitable. I also asked for comment on *saudade*—the unique Portuguese trait of character. *Saudade* means wistful melancholy, longing, sadness. It is hard to define. It is one of the constant refrains in the program for it is basic to an understanding (historically) of the Portuguese.

Before I left Oporto, my log book was full. I had aver-



aged about five interviews a day; and I had made connections which would serve me where I was headed: Lisbon and the Algarve. I had spoken with the mayor, the head of the Port Wine Institute, English shipping families, hotel managers, fishermen, and many others. Most rewarding, I think of the whole Oporto experience was the privilege of recording a boys' choir inside a country church where they had assembled especially to sing a beautiful North country hymn that rightly expresses their closeness to the soil: *Adeus al Campo*—Farewell to the Field.

As I sped along the surprisingly smooth highway to Lisbon, I had about 4 hours of recorded material "in the bag." There was no problem in getting the 1.5 volt flashlight batteries anywhere. I did have to check to make sure they were fresh. The second day after arriving in Lisbon and staying in a very picturesque ex-monastery made into an elegant and aristocratic *pension* I had my cue for a typical Lisbon sound. The omnipresent old woman fish-seller who carries a tray of fresh mussels, crab, and lobster and sing-songs her wares very early in the morning. For a few escudos, I managed to trap one such vociferous sales-woman into singing a dozen times.

In Lisbon I talked with 50 people or more in the two weeks I headquartered in this fascinating city. I was fortunate in catching the noted Australian writer, Allan Villiers in his hotel right after the Sagres ceremonies. He'd been invited over by the Portuguese government and has written extensively about Portugal in the *National Geographic* with special reference to her fishing fleets. Perhaps the most "glamorous" interview was conducted with celebrated fado-singer Celeste Rodriguez in her night club in the Barrio Alto, the old quarter of Lisbon. She has made a specialty of the typical sad songs of the workers and fishermen; she has dozens of LP's to her credit; and was seen not too long ago on the Dinah Shore show treating Portugal. Celeste was in a good mood and although her English is a bit trying, we got a lot of good comment on fado singing. She said: "Hearing speech is to listen. Hearing fado is to feel. Fado is the singing expression of the Portuguese soul."

I was glad that I allowed two weeks for the southern jaunt. And I was glad in a way to get away from glittering Lisbon and move into the primitive country of the southwest—where the Moorish influence is still apparent.

I stayed at the government-operated *pousada*, or country inn at Sao Braz d'Alportel. This inn charges a flat rate of about \$3.50 per day with all meals and taxes. The place is about 200 miles from Lisbon, but takes a good 8 hours steady driving. It is the "unvisited, unexploited" country. Each day I made side-trips to neighboring villages and towns, returned to the comfort of the inn at night. I met an old retired American Foreign Service officer at Sagres, Samuel Wiley who now lives in retirement there. He commented on the stark beauty of the landscape and compared this "continual succession of beaches" to Land's End. He spoke most knowledgeably about the architecture and the farming methods (irrigation in particular) used by the Moors. He became a "resource person" as had Allan Villiers in Lisbon. I gathered much material for my script; for in the evenings, seated on the terrace of the inn, one becomes reflective and philosophical and begins to put the experience into perspective, and this I needed as much as a whole range of new sounds.

I did have luck with the manager of a cork factory who explained the growing, stripping, and processing of cork



The lobby of Boston University's School of Public Relations and Communications which contains an exhibit of books, tapes, script, and chronological story of Journey Through Portugal. John Lerch explains a point to Mrs. Carol Hills, Professor of Public Relations.

over the sounds of employees cleaning heavy machinery and packaging cork for shipment. A banker talked over coffee about the solidity of the escudo—the Portuguese currency. A surgeon talked about his small hospital. And frequently I cornered the guests at the inn for opinions or comments on life in the Algarve as they were experiencing it.

In my final narration I arrived at no firm conclusion about the Portuguese, but I did, in newsreel fashion allow a complete "spectrum" of opinion which went something like this: (1) There is no juvenile delinquency here. (2) Youth is apathetic. (3) They're a romantic people. (4) They're hard-headed businessmen. (5) They're sapped of vitality. (6) All suffer from inferiority complexes. (7) A good symbol for Portugal is the ox-cart. (8) They do not think far enough ahead. (9) The ideal country for the poor gentleman. It rings a bell of a lost humanity. (10) Money is less important than hospitality and friendliness. (11) What great tranquility and peace there is here!

And so it went, a rich mosaic of the raw material of exploratory travel. There is a sense of adventure in the finished product which is precisely what I hoped to convey. The listener will obviously draw his own conclusions and is not asked to like nor to endorse the government of Portugal.

From over 15 hours of original, taped material, I boiled this down to less than 45 minutes of actual taped segments. Still, the variety of landscape and the variety of responses offer a panoramic view of a country which show that the reporter did not pre-conceive his material nor pre-judge the "climate of ideas" he would be working in.

This has been a detailed account of seven weeks' recording in Portugal. Perhaps you will understand my desire to return to Portugal sometime soon, and merely sit in the sun or stare at the sea.

**SOUND STORY NO. 5**

**PORTUGUESE FADO**

by John H. Lerch

Fados are songs of fate—sad songs. They are typical throughout Portugal. Such songs are full of expression and meaning.

7 1/2 ips, dual track, \$1.00

Order from Sound Story # 5, Tape Recording



Memories of vacations and trips are much more vivid if you have recorded the sound. Here a tourist uses a Webcor Microcorder to pick up the talk by a guide at the United States Naval Academy. This on the spot narration can then be used with a slide show at home.

## RECORDING AWAY FROM HOME

by Bart Pierson

*... There's a lot of sound around but you have to go where it is to get it.*

**R**ECORDING away from home can range from your own yard to the wilds of Africa or anywhere in-between. Subject matter can vary from the gang singing around your barbecue cooker to the roar of a jet taking off from a foreign airport.

For this you can use a regular home-type tape recorder, provided it isn't too large, or one of the battery operated, self-powered portables.

### Current Supplies

The biggest problem is the supply of current to operate the recorder. Of course, if you have a battery powered portable, you have no worries on this score at all. If you are using a regular recorder there are a number of ways in which the current may be obtained.

First, is bringing with you enough extension cord to run the power to where you need it. The extension should

be of heavy enough wire to prevent too much of a current drop between the power source and your recorder. As the length of line increases, the current delivered to the recorder will become weaker and may reach the point where the machine will not be able to get up to speed nor the electronics operate efficiently.

If you are planning to take your recorder abroad it is well to invest 25 cents and obtain the booklet "Electric Current Abroad" which is put out by the Department of Commerce and is obtainable from the Superintendent of Documents, Government Printing Office, Washington 25, D. C. This booklet lists all the known currents available in the various cities and countries and they are many and various. Machines built for the 60 cycle, 110 volt AC used in this country must either be equipped with a transformer that will deliver the correct current or be powered by inverters or converters.



In any location away from home, it is good to check the kind of current available before plugging the unit in. In some cities, especially in the older sections and in some hotels, the current is DC. This is not suitable and may ruin a recorder. Since the advent of electric shavers, many hotels that had only DC have added an AC outlet and this is usually found near the bathroom mirror.

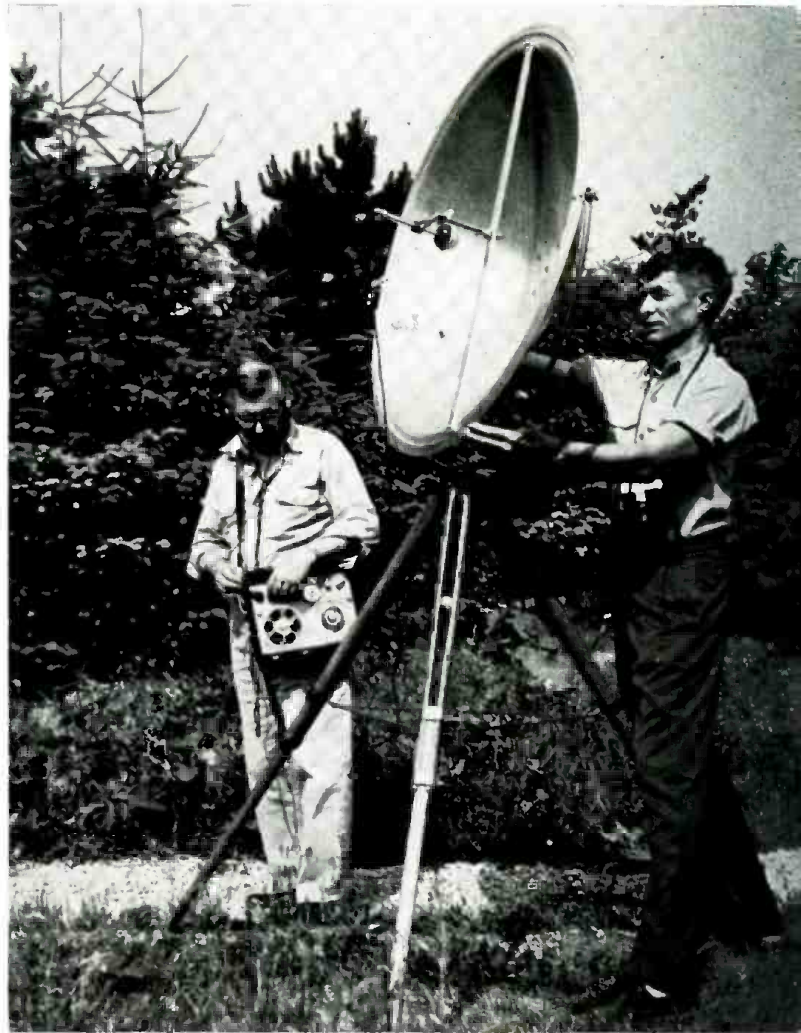
There are three types of equipment which will change one kind of current to another. One of these is the transformer, which can be used to step the AC voltage either up or down. A transformer will not operate on DC current nor will it change the cycles of the current. Since many overseas countries use 50 cycle instead of 60 cycle, a transformer is not suitable. A recorder used on the wrong number of cycles will heat up and will also run slow.

The second device is the inverter, such as those made by the American Radio and Television Co. and Terado. These units are used to convert direct current (DC) to the proper voltage and frequency for recorder operation. Usually they are used in conjunction with a storage battery. The output of these devices is actually a pulsating DC voltage but to the recorder electronics it makes no difference and the machines work well.

The third type of current altering device is the converter. Unlike the inverter, which employs a vibrator to get the pulsating DC and a transformer to get the proper voltage, the converter is actually a motor, which runs on the available current that drives a generator or alternator to produce the current desired. These may be driven from storage batteries, or from any other current source which will run the motor.

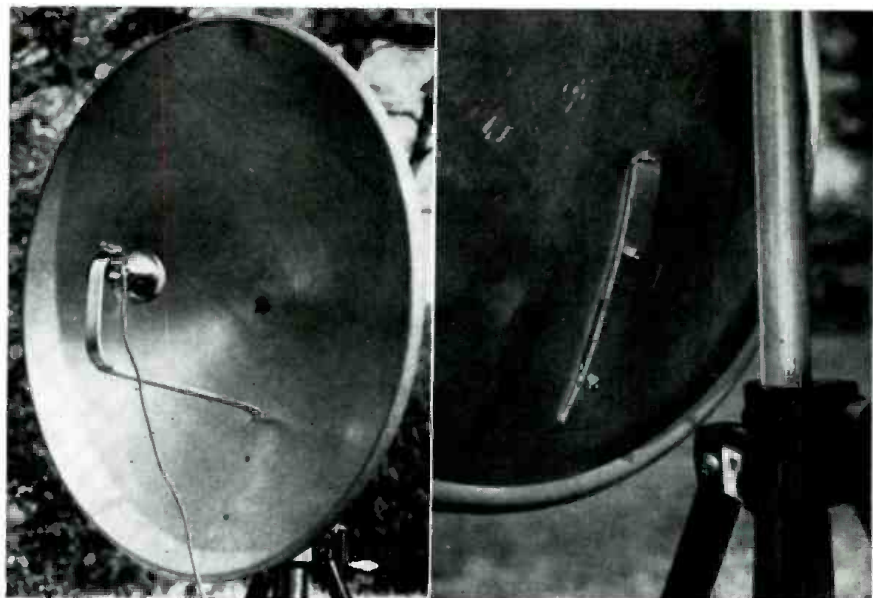
Battery drain with conversion devices is usually pretty high and it is best, if possible, to keep the car motor running to keep the car battery up if recording is being done on location. Of course, if the recording is being done while the vehicle is in motion then the car generator will keep the battery up.

The self-powered portables may run either from dry cells, mercury batteries, which have a longer life but are



Recordists working in the field away from power sources, capture a bird's melody with a Magnemite portable, and microphone mounted in a 40 inch parabolic reflector. The parabola is aimed by sighting through a small hole near the center.

Left: the microphone is held to the aluminum strip with a pipe clamp. A slot was drilled and filed in the reflector to allow the aluminum strip to pass through. The part inside the reflector was formed by bending the aluminum so that the center of the microphone was opposite the center of the reflector. Right: the aluminum strip was bent down to follow the curve of the reflector on the back and held in place with stove bolts and nuts. The metal is easily worked. The unit was mounted on a tilt-top photo tripod.





more expensive, or from rechargeable wet cells which are usually charged by means of a trickle charger from regular 110 volt lines.

In some models, the tape drive mechanism is run from wind-up spring motors and most units of good quality have a governor of some sort to hold the speed even. The use of a spring motor drive makes for less battery use since the batteries are only used for the electronics and if these are transistorized there is only a very small drain and the batteries last a long while. It is running a motor that pulls them down.

Careful check should be made of the condition of the batteries before undertaking any recording job. Weak or exhausted batteries will not only fail to get the recorder up to speed but also may affect the functioning of the electronics so that full range recordings are impossible.

#### Microphones

The microphone is the most delicate part, or accessory, of the recorder. Whenever the unit is transported the mike should be adequately protected, not only against shock damage but against excessive heat and dampness. This is especially true of crystal microphones, other types, such as ceramic, dynamic, etc. are more sturdy.

When making a recording outdoors, there are a number of factors which are not met in indoor recording. One of these is wind blast. On a windy day, the air moving across the microphone will make thumps or even blot out the sound momentarily. To avoid this, either use the mike in a shielded spot or cover it with a handkerchief so the moving air cannot get to it directly.

This, of course, cuts down also on the amount of sound that reaches the mike diaphragm because it must first go through the cloth so a higher recording level must be used.

If the recording is to be made some distance from where the recorder is set up, such as in a hall, if recording indoors, or outdoors at a public event, then long mike lines may be necessary. For the average high impedance mike furnished with most recorders, the maximum length of cord permissible is about 25 feet. Above that point the highs drop off and the recording quality is affected.

The answer to this problem is to use a low impedance microphone with a microphone transformer at the recorder to change the output of the mike back to high impedance to match the recorder input. There are some mikes on the market which have switches incorporated in them so that they may be changed from high to low impedance when desired merely by the turning of the switch. Thus when the line from mike to recorder is under 25 feet, the mike can be switched to high impedance and the cord plugged directly into the mike input on the recorder. When used with a long line and a mike transformer, the mike is switched to low impedance to take care of the situation.

In general, it is best to place the microphone as near the sound source as is possible. In this way the recorder gain need not be turned up so high and it will prevent the pickup of unwanted sounds.

It is amazing how noisy the world really is, even out in the country. Many recordings of bird calls and other small sounds have been ruined by the passage of an airplane overhead, the barking of a dog or the passing of a car on the highway. By getting the mike close up, these sounds can be relegated to the background where they belong.

If the mike cannot be taken close to the sound, then the sound must be magnified or concentrated for the mike.

This can be accomplished through the use of a parabolic reflector which concentrates the sound at its focus—where the mike is placed.

Parabolas suitable for use with a mike may be obtained from the C. W. Torngren Company, 236 Pearl Street, Somerville 45, Mass. A unit of sufficient size for microphone work will cost in the neighborhood of twenty-five to thirty dollars. A small reflector (under two feet) clips off the bass part of the sound to some degree and the bigger the dish the more sound you collect at the mike.

The parabolic reflector works like a searchlight in reverse. In a searchlight the arc or lamp is placed at the focus of the reflector and the reflector shoots the rays out in a parallel beam that keeps the light concentrated in a cylinder for long distances.

When a reflector is used with a microphone, the sound waves are reflected from the curved surface to a point at the focus. The microphone is placed so the diaphragm is at this focus and thus receives the maximum sound.

Grandpa and his ear trumpet had the right idea, for by concentrating the sound, unwanted sounds are almost eliminated and what you want comes through loud and clear.

If the signal, even with a reflector, is too weak, it is possible to use a microphone amplifier which is put in between the mike and the recorder input.

#### Recording Outdoors

In all outdoor recording there is one thing missing that is present, in greater or lesser degree, in all indoor recording and that is reverberation. Except in a totally dead room, such as is found in a radio studio, every room will have some sound reflection characteristics that will lend color to the sound being recorded. In a room such as a gym or a bathroom the hard shiny walls, floor and ceilings bounce the sound and make it very live. The average hall or auditorium also has a certain liveness to it which makes sound recorded in it have a characteristic that is peculiar to that place.

Outdoors, unless you are near a wall, in a quarry or near cliffs that will echo the sound and reflect some of it back to the mike, there is no reverberation at all and the recording will have a tendency to be "dead" rather than live.

On the other hand, this dead quality can sometimes assure very clean-cut sound with no interference from reverberation that can reflect back to the mike out of phase and cause poor resolution.

*Voice:* In recording the voice outdoors, the mike should be kept as close to the person talking as is possible, without getting below the minimum distance where the sound may be distorted. Normal mike distance of 8 to 12 inches is fine.

The principal benefit from close miking is cutting down of the background noise. Because the signal is strong, the volume can be turned down, making the mike less sensitive to more distant sounds.

*Bands:* Outdoor concerts make interesting recordings and again, the mike should be brought as close to the sound source as possible. A front row seat should be sought so that the sound from the band will reach the mike with the least possible distance. A center position is the best for then the best balance is obtained. If off to one side or the other, you may get too much of one type of instrument.

If you can secure permission to set up a mike along with the other mikes on the bandstand, this will be fine; however it also means you will have to check things out in advance. Recording with regular recorders which are not self-contained and battery driven means you will need a current supply. This can often be obtained from lighting on the stage or bandstand and here again, you must have permission.

If the location has a PA system, and most of them do, the sound man may let you tap off the PA amplifier in which case you will be recording the pickup of his mike. Such a tap should usually be plugged into the radio-phono input on the recorder unless the takeoff is a high impedance source on the PA amplifier.

PA systems can cause some difficulty also, especially if you are seated in the audience with a portable recorder in a spot where you get both direct sound from the stage and amplified sound from the PA speakers. In a large area, where there may be a good number of such speakers, the sound will reach you at different intervals and unless the PA system is properly balanced in this regard, the sound will not be good, either to your ear or to your recorder. If you have the opportunity, it is best to find a location where the sound is good before starting to record.

In locations such as football stadiums, or with marching bands, the wind can play tricks too by blowing the sound away. You have doubtless noticed this on radio or TV pickups where the band suddenly fades and then just as quickly comes whumping back in again. This is due to the effect of the wind on the sound waves emanating from the band. A parabolic reflector or a mike with a narrow beam can help some in situations such as this but cannot eliminate the wind effect altogether.

*Bird Songs:* One of the most challenging of outdoor recordings is recording bird songs. The best opportunity for this type of recording occurs in the spring and early summer. In the late summer the birds are moulting and tend to keep very quiet and as inconspicuous as possible.

Bird song acts as a mating call and also as a warning to other male birds. As the nesting season approaches, the male bird will pick out an area which he considers to be his and will drive from it all other birds of his species. To "stake out" this area, he sings from the corners of it. This works to the recorder's advantage for once having located these singing spots, the mike may be positioned near a convenient one and a good pickup made.

For recording in the field, a parabolic reflector for the mike is a necessity. This may be mounted on a photo tripod, preferably one with a tilt-top head for aiming the rig at the sound source.

In all these instances, headphone monitoring of the sound being picked up by the mike is very, very helpful.

#### Recording for Slides or Movies

The addition of the actual sounds of a vacation or trip either to color slides or home movies is a prime reason for taking the recorder along. In many instances sound has proved to be the stronger than sight in achieving mental recall of sensations. When you combine sight and sound you have the ultimate.

The big problem, insofar as the movies are concerned is the synchronization of the sound with the pictures. Lip synch should not be tried without special equipment



Any recorder may be used in the car if an inverter is used to provide 110 volts from the car battery. Insets show the ATR inverter mounted in the trunk and the small control panel for the dash. The recorder should be strapped to the seat to take care of sudden stops.

but general synchronization is easily attained and adds much.

With slide shows, there is no problem at all since you can make your own tape of narration and musical bridges and edit in the original sounds wherever they are needed.

Using one of the new recorder-projector synchronizers, the cues for changing the slides are put on the tape and the whole show then becomes automatic.

#### Recorders in Vehicles

The time most people spend driving to and from work can be made productive by the installation of a recorder in the car. In fact, the Audio Digest Foundation puts out monthly tapes for doctors to which the physicians can listen as they make their house calls and keep up to date on the newest developments in the profession.

Learning a language, rehearsing for a play, listening to music you like are all things you may do with a recorder in your car.

For this kind of use a small regular recorder and an inverter are best, rather than a battery operated job. The Wollensak T-1700, Home-Auto recorder is specially made for this kind of service and has the power supply built in. Current is obtained from the cigarette lighter.

Some of the battery driven portables also may be operated from the cigarette lighter but they will not take the big reels.

A tape recorder is a "natural" for use on a boat since the motion of the boat will not affect the playing as it would a phonograph.

Any craft which has a battery system can make use of an inverter or converter for power and when at dockside can hook into the shore power. Besides the obvious use of playing music while underway, those recorders which may be used as a PA system offer a means of amplifying the voice or other sounds for shouting across the water.

The world is full of sound, varied sound and interesting sound but you have to take your recording gear to where it is to get it. Auxiliary power supplies are not expensive and they can extend the use of your recorder many, many times. Not only that, but they can provide a means of making the recording of sound a really rewarding hobby.



# DIRECTORY OF BATTERY OPERATED PORTABLES

Edited by Jean Cover

*Specifications, features and price information contained herein were obtained from the manufacturers and are correct as of date of publication.*



AMERICAN GELOSO ELECTRONICS, INC., 251 Park Avenue, South, New York 10, N. Y.—STENOTAPE TR-711. Powered entirely by six penlight batteries. Measures 6 x 6 $\frac{3}{4}$  x 2 inches overall and weighs five pounds. The two standard tape speeds of 1 $\frac{1}{8}$  and 3 $\frac{3}{4}$  ips are available with 3 $\frac{1}{4}$  inch self-threading reels, affording a recording time of two hours. A front panel jack permits recording from outside sources such as radio, television, hi-fi, telephone, etc. Equipped with a foot panel control. This machine is made by the Victor Company of Japan. Price: \$199.50.

AMPLIFIER CORP. OF AMERICA, 398 Broadway, New York 13, N. Y.—TRANS MAGNEMITE (top). Operates on small dry rechargeable batteries which have a life of about 125 operating hours. Double barrelled Swiss-steel spring-motor; high-speed rewind; ultra-precision balanced fly-ball governor; transistorized rewind indicator; push-pull ultrasonic bias oscillator; eleven transistors; size—11 x 10 x 7 inches; weighs 15 lbs. Other features include: high-speed VU meter, large precision capstan, take-up guide post, adjustable tension pressure pad, etc. Various models with different tracks and speeds are available, all with VU meters. Write for literature. Prices range from \$740-\$840 list, \$445-\$505 net.

TRANS FLYWEIGHT (middle). Electric motor battery-operated portable available in various speeds and tracks. Has cast, machined, and dynamically balanced fly-wheel, separate rewind motor, ten transistors, weighs 8 lbs., and is powered by six replaceable or rechargeable mercury batteries. 12 volt car operation accessory available which enables motor to operate from cigarette lighter socket. Other features include long-life brushes and ball-bearing construction throughout, a VU meter for measuring recording and playback level and battery voltage, and a multiple shielded motor with special auxiliary noise suppressors. Furnished complete with batteries,



tape, microphone plug, and instruction booklet. Other accessories available. All with VU meters. Prices: From \$438-\$529, net.

SECRET RECORDER (bottom). Quiet running, concealed in false compartment of a standard-size genuine top-grain cowhide leather briefcase. Normal speech may be recorded at a distance of 25 feet. Starts and stops instantly by touching a patented combination slide-lock and switch. Continuous recording for 3 hours at 15/16 ips on a 5" reel 12 volt car operation accessory available which enables motor to operate from cigarette lighter socket. Features similar to those of machines above. Available in varied speeds and tracks. All with VU meters. Prices: \$475-535, net.

CONCORD ELECTRONICS CORP., 1549 North Vine St., Los Angeles 28, Calif.—HOSHO MODEL 500. Operates on

3, 9 volt batteries; weighs 3 lbs., reel size is 3"; tape speed 15/16 ips; maximum recording time 4 hours; frequency response 60 to 5000 cps; built in speaker; VU meter; AC adaptor available. Price: \$169.96 including carrying case and microphone.



CRAIG PANORAMA, INC., 5290 West Washington Blvd., Los Angeles, California —MODEL TR-403. 2 speed miniature transistor, operates in the case in any position. records up to 68 minutes on one tape. V-U meter checks recording level and battery condition while operating. Standard, penlight batteries supply power. Fully equipped with microphone and case, reel case and earphones. Accessories available. Price: \$139.95.



DeJUR-AMSCO CORPORATION, Northern Blvd. at 45th Street, Long Island City 1, N. Y.—STENORETTE-VERSATILE. Can operate on three different sources of power: a nickel-cadmium rechargeable battery that will accept 15,000 charges; a dry cell mercury set of batteries that will furnish up to 40 hours of service for the motor; up to 60 hours for the amplifier; and an AC power pack that will operate the machine on either 110V or 220V for world-wide operation. Users can obtain up to 45 minutes of continuous dictation on each reel or magazine of tape. Weighs less than 6 lbs., requires no warm-up time, is completely push-button operated, has automatic recording level volume control. Accessories available. Price: \$149.50.





DICTAPHONE CORP., 730 Third Avenue, New York 17, N. Y.—DICTET. Battery-powered, with visual battery life indicators. Self-contained, weighs two pounds, 11 oz., and is 2 x 4½ x 6 5/16 inches. Each tape comes in a magazine and is for one hour's recording. Any tape can be played back immediately by pushing a lever and holding the microphone to the ear. The mike is start-stop which enables the speaker to control the recording operation with his thumb. The Dictet fits snugly into a leather carrying case, complete with shoulder strap and compartment for microphone and spare batteries. Accessories available. Price: Contact manufacturer.



ELECTRONIC APPLICATIONS, 194 Richmond Hill Avenue, Stamford, Conn.—STELLAVOX SM 4 (top). Operates on four miniature dry cells, type RULAG, amplifier contains 7 transistors and 1 diode. Cells provide about three hours operation on an intermittent basis. Accessory charger available. Uses 3½" tape reels, with a

recording time of 20 minutes. Frequency response 30-14,000 cps, plus or minus 2 db, signal to noise ratio about 50 db, weighs about 4 lbs., size—2¾ x 4¾ x 10¼ inches. Other features include high frequency erase head in ferrite and combined record playback head for half track or two track, rewind is manual by use of a small handle, comes in a sturdy wooden case covered with grey leatherette. Price: Contact Electronic Applications.

Model SM5 Stellavox with deluxe operating features will be available July, 1961. Write for information.

NAGRA III (bottom, col. 1). Not a pocket unit, but a small, light recorder which runs on 12—1.5 volt flashlight batteries. 20 hours operation is available from ordinary batteries and up to 70 hours from long-life Eveready cells. Has a special connection for remote operation; accommodates standard 5" reels with cover closed and 7" reels with it open; some models have more than one speed; has recording level meter and battery check. New automatic record position which controls microphone sensitivity and attenuates low frequencies. The Nagra IIIb has speeds of 15, 7½, and 3¾ ips. Frequency response at 15 ips is 30 to 15,000 cps. dimensions—8¾ x 12½ x 4¼ inches, weighs 15 lbs. Power packs for adapting the recorder to almost any power supply or mains are available.

Nagra model for film synchronization IIIp is available with incorporated pilotone head as Model Npp. Prices: Contact Electronic Applications.



EMI/US LTD., 1750 N. Vine Street, Los Angeles 28, California—manufactured by Electric & Musical Industries, Ltd. of England. Battery operated; transistorized portable; weighs 17½ pounds; measures 14¼ x 8 x 6¾ inches; uses standard 5" reels; 7½ ips for 15 minutes; frequency response —3 db., 50 c/s to 10 Kc/s; battery supply—12 V. from 8 cells; signal to noise ratio is better than 44 db. Price: Contact EMI/US, Ltd. (distributor).

ERCONA CORPORATION, 16 West 46th Street, New York 36, N. Y.—STUZ-ZI MAGNETTE (top). Battery operated; amplifier system has seven transistors and two diodes; weighs 8 pounds; vibration proof; speeds of 17½ and 3¾ ips; dual track; dimensions—11 x 4½ x 8 inches; battery life up to 100 hours; maximum



playing time up to 2 hours per reel; frequency range 50-9000 cps at faster speed. Other features include battery life indicator, separate motors for fast wind/capstan drive, can be used as a portable PA system, velvetouch pushbutton controls, VU level magic-eye, etc. Price: \$269.50.

E.M.I. (bottom, col. 2) manufactured by Electric & Musical Industries, Ltd. of England. Battery operated; weighs 14½ pounds; measures 14 x 8 x 7 inches; uses standard 5" reels; available in three models—3¾ ips for 30 minutes, 7½ for 15 minutes, or 15 ips for 7½ minutes; frequency response at 15 ips is within plus or minus 2 db of the response at 1000 cps, between 50 and 7000 cps, and within plus or minus 3 db from 7000-10,000 cps; signal to noise ratio is better than 45 db. Price: Contact Ercona (distributor).



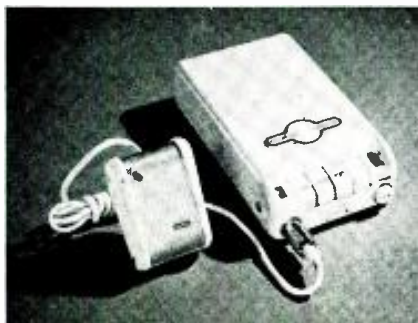
FILNOR PRODUCTS, INC., 156 Fifth Ave., New York 10, N. Y.—TELTAPE. Imported from West Germany. Power supply—4 type C flashlight cells (good for

about 15 hours of continuous use), is  $8\frac{1}{2}$  x  $6\frac{1}{2}$  x  $2\frac{1}{4}$  inches, weighs two pounds, has a two-stage transistor amplifier. Plays for 16 minutes with 3" reel, response to 4,000 cycles. Other features include instant braking, fast rewind, automatic slack take-up, and separate record-playback, erase heads. Price: \$29.95.



THE GBC BATTERY OPERATED "TRANSI-VOICE"

GBC AMERICA CORP., 89 Franklin Street, New York 13, N. Y.—TRANSI-VOICE. Operates on 100 hour standard Eveready, Burgess or Ray-O-Vac batteries (or equivalent); all transistor circuit, uses  $3\frac{1}{2}$ " tape reel; records up to  $1\frac{1}{2}$  hours at  $3\frac{3}{4}$  ips; weighs little over 4 pounds; push-button controls; built-in conference speaker; accessories available. Price: \$129.95.



GEISS-AMERICA, 6424 North Western Avenue, Chicago 45, Illinois—MINIFON ATTACHE. Uses magazines; fully transistorized—fully automatic; weighs  $1\frac{3}{4}$  lbs.;  $3-15/16$  x  $6-11/16$  x  $1-9/16$  inches; battery (rechargeable) or AC operated; has push-button controls; 30 minutes recording time; built-in battery meter; fast forward-fast rewind; automatic tape-end stop; tape speed  $1\frac{7}{8}$  ips; frequency response 150-6000 cps; has 3-stage transistor amplifier; comes in lightweight sturdy metal case; has a start-stop microphone; accessories, including connecting cord for automobiles, available. Price: \$249.50.

This company also produces the Minifon P55 pocket size wire recorder which weighs just 28 oz. and gives up to 4 hours operation. Write for details.

LAFAYETTE RADIO ELECTRONICS CORP., 165-08 Liberty Avenue, Jamaica 33, N. Y.—TRANSCORDER. Completely transistorized; operates on one battery; weighs three pounds; size— $8\frac{1}{2}$  x  $3\frac{7}{8}$  x  $1\frac{7}{8}$  inches; one hour recording time at



$1\frac{7}{8}$  ips; uses tape cartridges; microphone picks up conversation as far as 30 feet away; has visual battery life indicator; transistorized power amplifier and 2" speaker (supplied separately) fit into the battery compartment. Complete with combination microphone—playback speaker—one hour tape recording cartridge and 12 hour battery. Price: \$249.50 list, \$189.50 net.

The RK-120 (middle) is self-contained with built-in speaker and amplifier, 5 transistors and 1 thermistor. Powered by 6 standard penlight cells; half-track heads—records and plays up to 68 minutes at  $1\frac{7}{8}$  ips; 34 minutes at  $3\frac{3}{4}$  ips. Single function lever operation, special safety record button, and built-in level meter. Volume control plus jacks for earphones, radio and microphone are accessible from

the front. Accessories available. Price: \$79.95.

The RK-125 (bottom). Powered by 2 standard 15V flashlight cells, and one 9V transistor battery. Measures 6" x  $8\frac{1}{4}$ " x  $2\frac{3}{4}$ "; weighs  $2\frac{1}{2}$  lbs. Records and plays up to 34 minutes on a standard 3 inch reel of tape. Built-in speaker and amplifier; single function control switch. Microphone and earphone jacks are located on front panel. Price: \$29.95.



MAJESTIC INTERNATIONAL SALES, 743 N. La Salle Street, Chicago 10, Ill.—NIKI (shown above). Battery operated (4x1.5V monocells plus one battery—3V.), approximately 15 hours on one set of batteries, jack for car battery 6 volts-DC, dual track, recording time approximately 30 minutes, frequency response 150-6000 cps. Other features include permanent dynamic speaker, 2XOC71, 2XOV72, OC602, special transistors, 3 way jack, jack for car battery, and a durable moulded plastic case with carrying strap. Weighs approximately 5.5 lbs. Price: Contact manufacturer.

TK-1 DELUXE all transistor portable. Operates on 6 x 1.5V flashlight (4 large-2 small) batteries; recording time—30 minutes; dual track;  $3\frac{3}{4}$  ips; frequency response is 80-10,000 cps; has permanent dynamic speaker, 5 ohms; has 3-pin jack (input/output) for microphone, radio, phono and 2-pin jack for 6V car battery. Controls consist of single knob selector to start, stop, playback, record, fast rewind; temp. stop; recording safety; record level control with magic indicator; and volume control. Price: \$129.95.





MATTHEW STUART & CO., INC., 156 Fifth Avenue, New York 10, N.Y.—PHONO-TRIX MARK II and MARK III. The Mark II (top, page 28, col. 3) has speeds of  $1\frac{7}{8}$  or  $3\frac{3}{4}$  ips, pushbutton control is powered by 4 standard flashlight batteries, is dual track, has up to 90 minutes recording time, and uses 3" reel tapes. It also has a built-in speaker, monitor switch, and it weighs 5 lbs. Price: \$79.95.

The Mark III (bottom, page 28, col. 3) is dual track,  $3\frac{3}{4}$  ips, measures  $9 \times 5 \times 4\frac{1}{2}$  inches, uses standard 3" reel tapes, operates on 4 standard (size D) flashlight batteries, and gets 44 minutes recording time on single 3" reel of tape. Other features include a fully governed motor, pause button, pushbutton control, recording monitor switch, fast rewind, volume control for recording and playback and an auxiliary output jack. Auxiliary cable for use with 6V auto battery available for both models. Price: \$99.95.

Matthew Stuart & Co., Inc. also has a miniature recorder known as the Phono Trix "88." It weighs  $2\frac{2}{3}$  lbs., including batteries and measures  $1\frac{7}{8} \times 4\frac{1}{4} \times 7\frac{3}{4}$ ". It is fully transistorized and operates either on batteries (3 "C" cells and 3 penlight) or AC. Each reel of dual track tape used provides 70 mins. of playing time and can, of course, be used over and over. The "88" offers, as standard equipment, a hand microphone with duplicate start/stop controls for remote operation, and is all push-button. A complete line of accessories is available. Price: \$139.95.



MOHAWK BUSINESS MACHINES CORP., 944 Halsey St., Brooklyn 33, N. Y.—MIDGETAPE. Operates from a small battery pack or from regular AC lines; weighs  $2\frac{1}{2}$  lbs.; motor batteries last 25 hours and amplifier batteries 60 hours; records for one hour on two tracks at  $1\frac{7}{8}$  ips; the tape is contained in a cartridge; has automatic volume control; frequency response is 150-4000 cps. Accessories available. Contact manufacturer for price.

PETELY SALES CORP., 300 Park Avenue South, New York 10, N. Y.—HI-DELITY MODEL TR-403 (top, middle col.). Has built-in speaker and transistorized amplifier. Power for amplifier—6VX4 penlight dry batteries; for motor—9VX6 penlight dry batteries. Battery life is 204 hours continuous use. Two speeds— $3\frac{3}{4}$  and  $1\frac{7}{8}$  ips. AC adapter, dual track, recording time is 34 minutes at  $3\frac{3}{4}$  ips and 68 minutes at  $1\frac{7}{8}$  ips, dimension— $2\frac{3}{4} \times 7\frac{1}{2} \times 6\frac{7}{8}$  inches, weighs 5 lbs. Accessories available. Price: Contact manufacturer.

HI-DELITY MODEL TR-401B (bottom, middle col.). 10 pencil type dry batteries supply all necessary power. Single



lever control for Play, Record and Rewind; battery life for amplifier 6 hours, for motor 3 hours; four 2T66 transistors; tape speed  $3\frac{3}{4}$  ips; dual track. Price: Contact manufacturer.



STANCIL-HOFFMAN CORP., 921 N. Highland Ave., Hollywood 38, Calif.—MINITAPE. Has an extremely sensitive preamplifier with an unusual electronic gain control; uniform recording quality is assured with no meters or magic eyes to watch. Weighs only 13 lbs. and in its watertight aluminum case, it is built to operate in snow, rain or desert heat. Five inch reels furnish 30 minutes recording time at  $7\frac{1}{2}$  ips (speeds of  $3\frac{3}{4}$  or  $1\frac{7}{8}$  may be ordered); flutter and wow less than 0.35% RMS; three all transistor amplifiers on plug-in cards, 7 transistors, 2 diodes, and 1 thermister; hermetically sealed nickel cadmium storage batteries power the amplifiers and drive motor for over 4 hours; battery may be charged from a 12 volt cigarette lighter attachment or an accessory automatic charger. No bearing can ever "freeze" and no oiling is required. Accessories available. Price: \$494.

To record synchronous motion picture sound, a two track version of the Minitape is available. On one track the audio signal is recorded, and on a second track 60 cycles is recorded to synchronize with a motion picture camera. The 60 cycles may be derived from a miniature generator which produces 60 cycles when the camera is running at its correct speed. On playback, the audio can be re-recorded to magnetic motion picture film, or reproduced through a standard loud speaker system. The 60 cycle signal of the second track is fed to a power amplifier, which, in turn, can drive a synchronous motor on a magnetic film recorded, or a

synchronous motor on a projector. Model M9S with the two track head assemblies and facilities for synchronous recording, but not including a camera generator—\$700.



STAR-LITE MERCHANDISE CO., 37 W. 23rd Street, New York 10, N. Y.—MINY, Model TRT401. 4 transistors plus 1 diode. Battery operated, works on 3 "C" cell flashlight batteries and 6 penlites. 2 track,  $3\frac{3}{4}$  ips,  $3\frac{1}{2}$  pounds, recording time—15 minutes each track. Features single switch operation for play, record, rewind and stop; instant stop button and separate volume control. Accessories available. Price: \$49.95.

Model RA-11 (shown). Operates on one Eveready 216, or equivalent, and two UM-2's. Uses RMA standard 3" reels, measures  $2\frac{3}{8} \times 6 \times 8\frac{7}{8}$  inches and weighs  $2\frac{1}{2}$  pounds. Comes complete with microphone, earphones, empty reel with 100' of tape and 9V battery. Price: Contact distributor.



TAPE-RECORDERS, P. O. Box 852, Sherman Oaks, California — Miniature Transistorized Tape Recorder. Uses standard portable radio battery (RCA No. VS-323, Eveready No. 216, Burgess No. 2U6). Two medium size (UM-2 cells) flashlight battery cells are used to power the motor. Measures  $9 \times 7 \times 3\frac{1}{2}$ ", weighs  $2\frac{1}{2}$  lbs., and has built-in amplifier. Plays up to 15 minutes on each side. Each unit contains carrying case, battery, tape, speaker, ear phone and microphone. Price: \$26.95 plus \$1.95 for handling.



# THE SELECTION AND STORAGE OF TAPE

*Part of the Series of Articles on Tape*

*Part VI—Conclusion*

by

Mark Mooney, Jr.

**A**S HAS been mentioned in previous articles in this series, the best assurance that you are buying good quality tape is the integrity of the manufacturer who makes it. Tests to determine the electrical quality of the tape cannot be performed with ordinary equipment hence, like the gasoline that goes in the tank of the car, you have to depend upon the maker.

There are basically two different levels of tape quality, first rate and others.

First is the name brand tape. On this the manufacturer proudly prints his name and his brand. This, he says in effect, is the best tape we can produce and we are proud of it.

This is not to say that all first grade tapes are equal for there are differences between the manufacturers and each keeps as a trade secret his own formulation of the oxide and binder. Which particular brand will perform best on your machine will depend upon your own results based on recording and playing back on your own equipment.

Then there is the so-called "white box" tape. This is generally far lower in price than the name brand tapes and usually with reason. It is not as good.

The sources of this tape may be various. If for instance, one of the major manufacturers has a run of tape which is not up to specification, they can sell it off as "white-box" tape. This tape has flunked one or more of the many, many tests that the manufacturer gives to all his tape. It isn't good enough for him to put his name on it.

What may be wrong with it is something that you never know. The oxide may not be able to record the full frequency response, the lubricant may be faulty resulting in excessive head wear, the coating may be uneven. "You pays your money and you takes your choice." In tape recording, as in everything else, for top quality and an assurance of top quality, you get what you pay for.

Another kind of "cheap" tape is the spliced tape. This is generated by the tape duplication firms. They buy their tape on 4800 or 5000 foot hubs and run this on the familiar 7 inch reels of recorded tape. Usually each hub will provide about four 7" reels of tape and there is an end left over which may amount to a few hundred feet of tape. It is too good to throw away so the tape duplicators splice these hub ends together and fill up 7" reels with them which they sell for enough to recover their costs of the bulk tape. There is nothing wrong with this tape, other than the splices, for the duplicators use first grade tape in making the musical tapes that you buy.

Because the manufacture of first quality tape is such a critical process every step of the way, it is natural that any manufacturer will produce batches that are not up to specs. By selling off this reject tape, they are able to recover the cost of the materials and thus hold down the price of the first grade tape. If this were not done, then the cost of first

grade tape would have to be higher to cover the junking of products that were not first class in every respect.

So why should you plunk down the additional money for first grade tape? In the first place, if you have a good recorder, you can't get the full value out of it and realize its full recording and playback potential by using tape of doubtful ancestry. With hundreds, or perhaps thousands, of dollars invested in recording equipment it is simply poor economy to use a tape which will not live up to what the recorder is capable of doing.

Another factor is the possibility of increased head wear from tape which does not have the proper lubrication and also such troubles as squeal, or interlayer sticking may develop. This may not show up the first time you use the reel but may crop up six months or a year later. To use questionable tape for a recording which you want and which happens only once, is asking for trouble.

Buying tape is like buying a suit. A \$19.95 suit may look fine and make you look like a million the first time you wear it but a few months latter it's another story. A high priced suit will look fine the first time and, if not abused, will look just as well a long time later.

There is nothing wrong with a bargain—provided it *is* a bargain! You can buy a bargain book, for instance, you can examine the paper, the printing, the binding, the jacket and, from experience, you can decide whether or not it is a bargain.

Bargain tape you have to guess at. Is the binder OK? Is the lubricant in the binder? Will it wind properly on the reel? Will it squeal a year later? Will it dry out and become brittle? Will it record the full frequency response of which the recorder is capable?—You don't know and without equipment capable of running a chemical analysis, and more gear to measure the electrical characteristics, you never will know.

It would be unfair to say that all off-brand tape is "bad" for such is not the case. It may be perfectly suitable for some uses—again the criterion is know the seller.

In purchasing any tape the following points must be considered:

1—How much playing or recording time do you need per reel? The answer to this question determines what *thickness* of tape you should buy. As shown in the table accompanying this article, the 1½ mil tape is standard and, at the 7½ ips speed, will provide 32 minutes per track. 1 mil tape will give 50% more recording time on the same size reel and ½ mil tape twice the recording time. The ½ mil tape is not recommended for some recorders since it is difficult to handle and may give trouble, especially in fast wind or rewind. It is also more prone to print-through if the recording is too heavy in terms of volume.

Your selection of the playing time will govern, to some extent, the type of base material. The 1½ mil tape is

available in acetate, Mylar or polyester, and Tenzar bases. The 1 mil tape is available in acetate and Mylar and the 1/2 mil tape in Mylar alone.

2—Which type of base do you need? Acetate base is the most widely used base material for tape. It is good for all general purpose recordings. Mylar, or polyester base, is stronger than acetate, is impervious to changes in length due to heat or humidity and is also a bit more expensive. It requires little care in storage. Tenzar base is similar to Mylar in characteristics.

3—What kind of oxide do you need? There are three basic types (eliminating such kinds as instrumentation, video tape etc.) and these are regular, high output and low-print-through. These are not available in all brands. (See Tape Directory in last issue).

The high output tape has a greater dynamic range and will not distort on signal peaks. It has the most signal output at low frequencies. It also has greater sensitivity.

The low-print-through tape has an oxide specially compounded to resist the printing through of the magnetic image from one layer to the next. It is advised when masters are being made that will be kept for years.

The regular oxide is of normal sensitivity and resistance to print-through and is suitable for all general recording purposes.

As mentioned previously, there are differences between brands and among similar types of tape. The manufacturers are trying to please you, the tape customer and some think one way and some another. While the similarity between first grade tapes is great, all are not equal to each other nor will all have the same physical or magnetic characteristics. The best bet is to find the kind which works best on your recorder and stick to that.

One point to remember in this welter of possible choices is that you can record anything on any tape. Some types will do some jobs better than others but if you need a tape and the kind you want is not in stock—another will do the job, perhaps not as well but it will do it.

#### STORAGE OF TAPE

Fortunately the optimum storage conditions for tape are very close to the ideal living temperatures and humidities found in our homes. The best handling and normal storage of tape is at 70° F. and 50% relative humidity. For long

time storage of masters and other material not frequently played, a temperature of 50° F. is better.

Tapes should be stored on edge in their boxes or other containers. This is done to prevent the deformation of the reels through gravity loads. If tapes are stacked flat, then those on the bottom of the pile are subjected to the weight of all those above and the plastic reels will be deformed.

Tapes kept over a long period of years should be inspected every two years and rewound in such fashion that the curvature of the tape will be opposite to that in storage.

Tape should not be wound too tightly on the reel for this may lead to deformation of the tape if it is subjected to wide variations in temperature and humidity. Tape machines should be properly adjusted to produce a good even wind at relatively low tension.

It takes a reel of tape approximately 6 weeks to adjust to a new environment and if tapes are to be stored away for long periods they should be held at 70° F. and 50% relative humidity for that period and then packed in sealed cans or other airtight containers.

The foregoing applies especially to acetate base tapes. While polyester base tapes will be affected little by changes in temperature and humidity the binder which holds the oxide to the base may not be as stable as the base itself.

Print-through in storage will not be a problem provided the tape is properly recorded originally (about 4 db below normal recording level). If it does develop it may be removed by selective erasure using a device such as the Audio Devices Echoraser.

Storage shelves should be of wood or a non-magnetizable metal and for maximum protection during shipment, the tapes should be in protective containers. Exposure to strong magnetic fields should always be avoided.

A "strong" magnetic field is one which will actually physically attract the tape. Fields of this strength will erase it completely. Ordinary electrical fields are generally so weak that they cause no harm. The ordinary house wiring and extension cords, for instance, have fields which generally cancel each other because of the closeness of the conductors. Of course, the tapes should not be placed near powerful speaker magnets and the like.

Tape, with proper care, is a sound storage medium of unsurpassed capabilities. Repeated playings have no effect upon it and storage conditions for general use are not critical.

## PLAYING TIME CHART

### SINGLE TRACK AND 2-TRACK STEREO

#### TAPE SPEED

### DUAL TRACK AND 4-TRACK STEREO

#### TAPE SPEED

TAPE LENGTH	SINGLE TRACK AND 2-TRACK STEREO				TAPE LENGTH	DUAL TRACK AND 4-TRACK STEREO			
	1 1/2 I.P.S.	3 3/4 I.P.S.	7 1/2 I.P.S.	15 I.P.S.		1 1/2 I.P.S.	3 3/4 I.P.S.	7 1/2 I.P.S.	15 I.P.S.
150 ft.	15 min.	7 1/2 min.	3 3/4 min.	—	150 ft.	30 min.	15 min.	7 1/2 min.	—
300 ft.	30 min.	15 min.	7 1/2 min.	3 3/4 min.	300 ft.	1 hr.	30 min.	15 min.	7 1/2 min.
600 ft.	1 hr.	30 min.	15 min.	7 1/2 min.	600 ft.	2 hrs.	1 hr.	30 min.	15 min.
900 ft.	1 hr. 30 min.	45 min.	22 1/2 min.	11 1/4 min.	900 ft.	3 hrs.	1 hr. 30 min.	45 min.	22 1/2 min.
1200 ft.	2 hrs.	1 hr.	30 min.	15 min.	1200 ft.	4 hrs.	2 hrs.	1 hr.	30 min.
1800 ft.	3 hrs.	1 hr. 30 min.	45 min.	22 1/2 min.	1800 ft.	6 hrs.	3 hrs.	1 hr. 30 min.	45 min.
2400 ft.	4 hrs.	2 hrs.	1 hr.	30 min.	2400 ft.	8 hrs.	4 hrs.	2 hrs.	1 hr.

Shown above is a table of recording or playing times based on the length of tape on the reel. Using 1 1/2 mil as standard, 1 mil will have 1/2 times as much footage and 1/2 mil twice the footage for any given reel size.



# NEW PRODUCT REPORT

STA **OK** STED



## NORELCO CONTINENTAL 200

*... lightweight, 4-track, single speed monaural record, stereo playback.*

Norelco engineers have taken a new approach in the design of this machine which has but a single speed— $7\frac{1}{2}$  inches per second.

The building of a single speed machine is simpler than a multi-speed unit for it needs fewer parts. It also eliminates difficulties caused by belts and drive pulleys or pucks and makes for a more stable and flutter free performance.

Their reasoning followed the lines that since the advent of various thicknesses in tape bases and the use of four tracks on the tape, there was no need for the additional speeds since enough recording could be done on any one reel, using the single speed for highest fidelity.

At the  $7\frac{1}{2}$  ips speed, using standard  $1\frac{1}{2}$  mil tape on a seven inch reel, there is available 32 minutes per track or a total recording time of over two hours per reel. Using the 1 mil tape, which has 1800 feet of tape per reel, this time is extended by half to 3 hours plus per reel. With  $\frac{1}{2}$  mil Mylar or polyester base, the time becomes one hour per track or four hours per reel.

The above applies to monaural recording which is what this recorder does. It does have stereo playback, however, and again the  $7\frac{1}{2}$  ips speed was designed into the recorder because this is the speed at which all the currently available reel-to-reel stereo tapes are made.

The unit has a narrow gap record/playback head for full frequency response which is from 50 to 14,000 cycles per second.

The output for the stereo channel is purely a head output and an external preamplifier and power amplifier and speaker must be added.

The recorder will record each of the four tracks separately and play them back separately, either through the speaker in the recorder or through an external hi-fi system.

Small size and light weight are both features of this machine. The case is of two-tone polysterene which is high impact proof and the size is only  $13\frac{3}{4} \times 11\frac{3}{4} \times 6\frac{3}{4}$  inches with a weight of 18 pounds. The power consumption is 60 watts which makes it a practical machine for use in autos, planes or boats with an inverter power

*Product: Norelco Continental 200*

*Distributor: North American Philips Co., 230 Duffy Ave., Hicksville, L. I., N. Y.*

*Price: \$179.50*

supply.

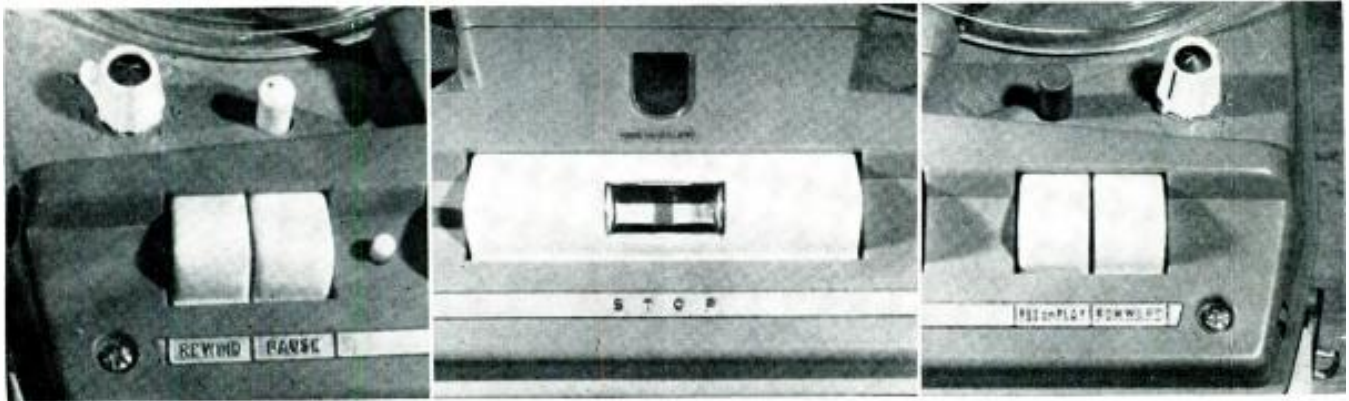
Normally the machine is set for 115 volts AC but it has a built-in transformer which will also enable the machine to be operated on 120-135 volts, 220-330 volts or 230-250 volts. The adapter is located at the back of the side compartment and a window shows the figures for the voltage for which the machine is set.

Despite the small size of the machine it has a number of controls. Of course, all the standard controls are present such as fast forward, rewind, record/play stop and record interlock. In addition it has a pause control to hold the tape still at any time. This can also be operated by a foot switch which is useful for dictation purposes. This is available as an accessory.

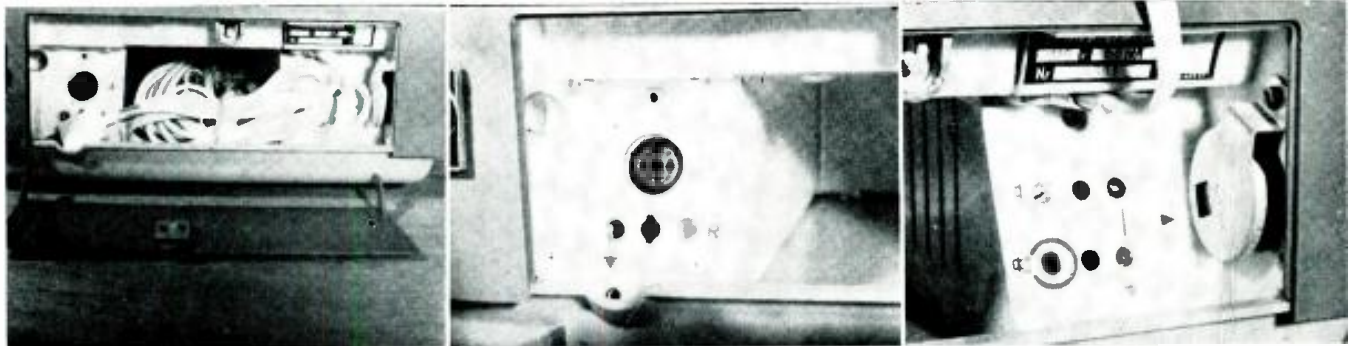
The unit also has a "sound-on-sound" button which permits making one recording on top of one already made on the same track. This is suitable for adding background effects



Finished in two tones of grey plastic the recorder has a detachable handle. Complete weight of the unit is only 18 pounds.



Left: left side of recorder deck showing left volume control, tone control (with dot), rewind and pause buttons and super-impose button. Center: stop bar with recording level indicator in center. Right: record interlock button, right volume control and record/play key and fast forward key. Volume controls are separate for mike and radio-phono inputs.



Removable door in side of case covers storage compartment and inputs and outputs. Left: cords and mike fit in center well. Center: PA amplifier switch is metal button at upper left of photo. Grouped on panel are microphone jack, radio-phono input jack and output jack for playing through separate amplifier. Right: other panel contains headphone jack, external jack and voltage adaptor (with small window).

and the like but since what is on the tape cannot be heard the tape should be marked in some way to denote the start and stop for the over-recordings.

A very useful feature of the machine is its ability to mix the two input channels, one from the mike and the other from a radio-phono or other sound source.

Since each input channel has its own volume control, the two can be balanced as desired and can be monitored, as can any recording, by plugging in a pair of 1000 ohm headphones in the monitor jack on the right side of the machine.

The volume indicator is of the magic eye type with two advancing lines of light. It is incorporated in the clear plastic stop bar which also serves as a magnifier, making it easy to see even in daylight.

In the side of the recorder is a storage compartment which will hold the mike and accessory cords. This also serves as a connection point for the inputs and outputs. There are two panels in the space, which is covered by a plastic door, and the jacks are found on these.

Outputs include: external amplifier, external loudspeaker, headphones and

the stereo head outputs. Inputs are for mike and radio-phono.

The unit may also be used as a PA system by pressing the PA switch until a click is heard. This switch is in the storage compartment likewise. Since both inputs (mike and phono) can be mixed, when the recorder is used as a PA system, announcements can be made over the music.

An odometer type counter is situated at the top of the case between the reels.

The tape threading is straight line from reel to reel. The tone control is situated to the left of the tape slot. This is effective in playback or PA modes.

To the left of this is the track selector with 1-4 and 2-3 positions. This is a dual knob and also includes the on-off switch and the left volume control which controls volume during playback and when recording from a radio or phono.

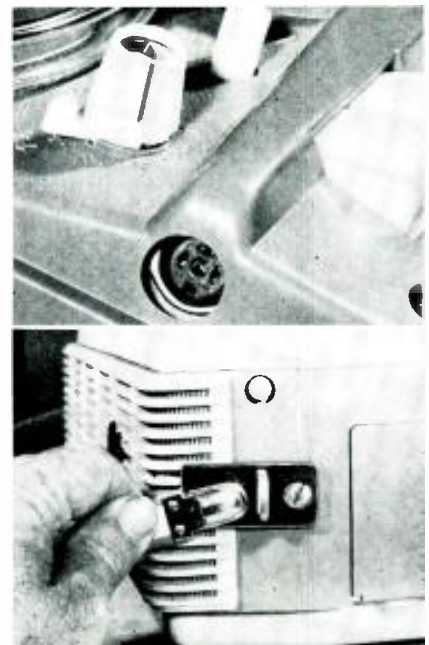
The carrying handle is detachable and may easily be attached or removed. For home use, the unit then looks less like a "suitcase" as so many recorders do when set up in the living room.

The test report on the unit showed that it performed, as the tester put it,

"Just like it says in the book."

The mechanical functioning of the push buttons, etc. was smooth and positive.

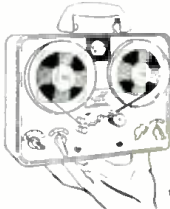
We think the recorder merits your consideration.



Top: track shift lever is at base of volume control, stereo output in end of case. Lower: handle is easily detached as shown.



# New "TransFlyweight" 8lb. Professional Field Recorder



Fully transistorized, battery-operated, electric-motor portable tape recorder. Studio quality performance assured with complete independence from AC power. Exceeds NAB standards for frequency response, flutter, wow and dynamic range. Fifteen One and Two-Speed Standard and Stereo Models available at speeds from 15/16 to 15 ips.

Write for literature and direct factory prices.

**AMPLIFIER CORP. of AMERICA**  
398 Broadway, New York 13, N. Y.

## HI-FI RECORDING TAPE

Splices Free (except 2400")  
15 day money-back guarantee

	3+	12+	24+
1200' 7" acetate .....	\$1.29	\$1.17	\$.99
1800' 7" acetate .....	1.79	1.59	1.45
1800' 7" mylar .....	2.09	1.99	1.85
2400' 7" mylar .....	2.99	2.69	2.49
2400' 7" tensilized mylar .....	4.25	3.95	3.75

Can be assorted. Add 15c postage per reel.  
10c for 24+ lot orders.

HI-FI COMPONENTS, TAPE RECORDERS available from wide variety of stock and shipped within 24 hours. Write for free wholesale catalogue. "WE WILL NOT BE UNDERBOLD". Write us and see why.

**CARSTON** 125-C East 88 Street  
New York 28, N. Y.

## TRIPLE TREAT

3 SOUND STORY tapes . . .

The newest in creative recording,  
for only **\$2.50**

All on 3" reels, 7 1/2 ips.

No. 1—Dr. Valdimir A. Ussachevsky. Alters sounds to produce new and unusual sounds; Tony Schwartz, Sounds of New York City.

No. 2—The Contact Microphone, A hilarious creative tape you have to hear to appreciate.

No. 3—Beat Recording, Authentic Beatniks live it up—or down, as the case may be.

No. 4—Africa. Recorded Tribal Dance and songs made in some of the wildest parts of the Dark Continent.

Specify which three you want.

Order from:  
**TAPE RECORDING**  
Severna Park, Md.

# SHOP OR SWAP

Advertising in this section is open to both amateur and commercial ads. TAPE RECORDING does not guarantee any offer advertising in this column and all swaps, etc., are strictly between individuals.

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

In figuring the number of words in your advertisement, be sure to include your name and address. Count each abbreviation, initial, single figure or group of figures as a word. Hyphenated words count as two words. The name of your city, local postal zone and state count as two words. Maximum caps first four words. Proofs are not submitted on classified ads.

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

FOR SALE: Ampex 600, Rek-O-Kut disc cutter, 654 & 636 Electro-Voice mikes & many extras, \$1295. Call collect, OL 2-9114, Liverpool, N. Y.

BELL T 203 STEREO DECK; 2 RP 120 pre-amps; 2 track stereo record play-back; used 25 hours. Cost \$258.50—\$135.00. Benjamin Edelstein, Box 495, Asbury Park, N. J.

FOR SALE: Newcomb SM310-a quarter track, 2 speed stereo tape recorder, \$365. Also Tape-sonic 70-B half track 3 speed monaural tape recorder. Can monitor from tape, \$165. Both take reels up to 10 1/2". Both in very good condition. Sumner Northcut, 75 Bennington St., Newton 58, Mass.

RECORDER SALE, Tapes, Component quotes. Bayla Co., Box 131-T, Wantagh, N. Y.

HI-FI RECORDS MADE from your tape. Finest professional quality. All speeds—sizes. Prompt service. For prices write MBS Recording Studios, 228 S. Wabash—Chicago.

LEARN HYPNOTISM, SELF-HYPNOSIS from recorded tapes! Other amazing Tapes, Books, Records. Complete Sleep-Learning information! Free Catalog! Philanthropic Library, Drawer TR697, Ruidoso, New Mexico.

RENT STEREO TAPES—over 2,000 different—all major labels—free catalog. Stereo-Parri, 811-F Centinela Ave., Inglewood 3, California.

PROMPT DELIVERY, we will not be undersold. Amplifiers, Tape Recorders, Tuners, etc. No Catalogs, Air Mail Quotes. Compare. L. M. Brown Sales Corp., Dept. T, 239 E. 24 St., N. Y. 10, N. Y.

LEARN WHILE ASLEEP, hypnotize with your recorder, phonograph or amazing Electronic Educator endless tape recorder. Free catalog lists over 200 unusual tapes, records, equipment for experimenters. Sleep-Learning Research Association, Box 24-TR, Olympia, Washington.

TAPES COPIED TO Hi-Fi Discs. Free price list. Vance Studios, 3409 Grand Avenue, Oakland 10, Calif.

FOR SALE: STUZZI Magnette battery operated tape recorder and carrying case. Perfect condition. Takes 4 inch reels, plays in any position. \$150.00. J. Sherman, P. O. Box 475, Palatka, Fla.

AM IN THE MARKET for Micro-Groove Record Cutter. C. W. Cox, Box 1063, Lawton, Oklahoma.

CONCERTONE 20/20 recorder with stereo playback head, 10 watt power amplifier speaker unit, input and output transformers and lossier pad. Two carrying cases. Entire unit perfect in looks and function. Cost \$756.50 new. Sell for \$340.00. Jack D. Culley, Bank Electric Bldg., Lewistown, Montana.

SELL: RECORD CUTTER—overhead lathe, 16 inch turntable. Presto 1-D head. Highest bid & FOB. John Hildensrab, 926 Wilder, Helena, Montana.

FOREIGN LANGUAGE RADIO BROADCASTS. Will exchange recordings in German, French, Spanish, or will trade for Portuguese. James Reese, 681 N. Valencia, La Habra, Calif.

WEBSTER EKOTAPE RECORDER, \$50; Picking Stereo Pre-amplifier, \$25; 16" Transcription Turntable and Arm, \$35, "Ted" Hein, 418 Gregory, Rockford, Illinois.

TRADE MAGNACORDETTE TAPE RECORDER (PT6-AH), half-track, beautiful blond cabinet, recording-playback pre-amplifier, two speeds. \$125.00 or trade for good FM tuner or amplifier. R. L. Hawks, 814 N. Main, Wichita 3, Kansas.

SWING MUSIC ON TAPE—Rare radio broadcasts and air checks out of print recordings. Swing Music, Box 121, Port Huron, Michigan.

WANTED — CONTINENTAL CLASSROOM'S "Probability and Statistics" on tape, beginning with lesson 37. Can make my own copies. John Barabasch, P. O. Box 36, Conneaut, Ohio.

PONS, ALBANESE & MILANOV opera & recital tape recordings wanted. Wm. Rowland, 1335 St. Malo, West Covina, Calif.

WANTED: Minifon or Mohawk Midget recorder. Give price, condition, etc. first letter. Wm. G. Hunt, 532 S. Market, Wichita, Kansas.

## TAPE RECORDING BOOKSHELF

HOW TO GET THE MOST OUT OF TAPE RECORDING, by Lee Sheridan

Aimed at new recordist who has yet to discover the interesting and profitable uses of a tape recorder.

6" x 9", 128 pp., paper bound, illustrated ..... \$1.00

HOW TO MAKE GOOD TAPE RECORDINGS, by C. J. LeBel, Vice President, Audio Devices, Inc.

A complete handbook of tape recording containing up-to-the-minute information of practical value to every tape recordist.

5 1/4" x 8", 150 pp., paper bound, illustrated ..... \$1.50

TAPE RECORDERS AND TAPE RECORDING, by Harold D. Weiler

Covers Room Acoustics—Microphone Techniques—Recording From Records—Radio and TV—Sound Effects—Recorder Maintenance, etc.

5 1/2" x 8 1/4", 190 pp., paper bound, illustrated ..... \$2.95

TAPE RECORDERS — HOW THEY WORK, by Charles G. Westcott & Richard F. Dubbe

This book is based on the principle that to get the most from a recorder, one must first understand thoroughly how it operates.

5 1/2" x 8 1/2", 177 pp., paper bound, illustrated ..... \$2.75

BOOK DEPARTMENT, TAPE RECORDING MAGAZINE  
Severna Park, Md.

Please ship immediately the books checked. I enclose \$ .....

NAME .....

ADDRESS .....

CITY ..... ZONE ..... STATE .....

All books shipped postpaid from stock same day order is received. If not satisfied, return book within 5 days and money will be refunded.

- How to Get the Most Out of Tape Recording
- How to Make Good Tape Recordings
- Tape Recorders and Tape Recording
- Tape Recorders—How They Work

# TAPEBOOKS AND OTHER TAPES

## ALL ABOUT TAPE— ON TAPE

Will give you the information you need about tape recording in sound, not in the written word.

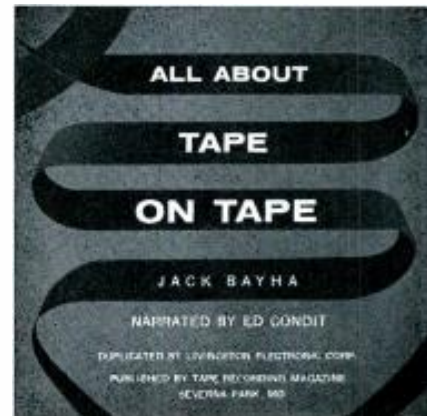
... authored by Jack Bayha ... a book to which you listen ... the first book specifically designed and produced on tape instead of the printed page. ... Now you can actually HEAR what good recording, over-recording, wow, flutter, distortion, wrong mike placement, etc., sound like. A test section allows you to adjust the head of your recorder for best results. Chapters include: How

a Tape Recorder Works, A Demonstrated Glossary, Recorder Operation, Home Recording, Field Recording, Low Impedance, Microphones, Recorder Maintenance and Testing. ... Playing time of the Tapebook is one hour. Accompanying each reel is a 28 page booklet containing 80 illustrations to supplement the spoken word. It is unique, enjoyable and instructive.

7 1/2 IPS, 7" Reel, Dual Track  
\$6.95

3 3/4 IPS, 5" Reel, Dual Track  
\$5.95

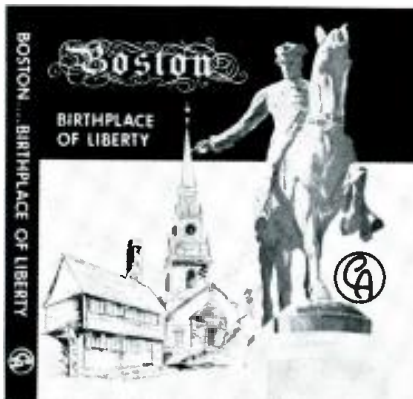
Including a 28 page manual of illustrations



## HOW TO STAY ALIVE ON THE HIGHWAY

This tape may save your life. Contains the actual voices of nearly 40 auto drivers, victims and survivors of highway accidents, police and traffic officials. Portions were secretly recorded in court rooms, on the highway and in police stations over a period of three years. A must for driver education programs. Dramatic, forceful—something you won't forget.

\$6.95



## BOSTON

A full 57 minute tour of one of America's most famous and historic cities. You visit in sound Boston Common, the Park Street Church, Kings Chapel, Old South Meeting and Faneuil Hall, the Cradle of Liberty. Hear the worship service at Old North Church in the belfry of which Paul Revere hung his famous lanterns and also hear the Vicar of Old North tell about the clear glass windows, kept clean so your forebearers could see the need outside, as well as the beauty inside. Every sound, every voice is authentic. Dual track, 7 1/2 ips.

\$5.95

## ADD-THE-MELODY TAPE

Twelve old favorite tunes for you to sing along with. Specially recorded with the melody missing so you can sing or play with the tape then, on playback hear both parts together. Suitable for use on any recorder with the ability to play the lower track while recording on the upper. Can be recorded again and again without harm to the Hammond Organ accompaniment by Hack Swain. You can get a million dollars worth of pleasure from this tape.

\$9.95

## HOW'S YOUR HEARING?

Periodic hearing tests are important because unlike most other ailments, a hearing loss gives little positive warning. Tape contains 33 tone pairs to test your musical discrimination, 75 word pairs to test speech discrimination and 30 minutes of music by the famous Lenny Herman orchestra for screen testing of hearing. Full 7" reel, 7 1/2 ips and booklet giving full directions for use of the tape.

\$9.95

## New! TAPE RECORDS Monaural Music

3" reels, 3 3/4 ips, full track

Only \$1.00 each postpaid

- 1—Cha Cha Cha—Tito Puente—Oye Me Mama, Sope de Pinchon, El Miche
- 2—Dinner-Dance—Fred Martin Radio Orchestra—Let's Dance, Somewhere over the Rainbow, Women are No Angels
- 3—Jazz—Dickie Thompson Quartet—Love for Sale, Blues in My Heart
- 4—Jazz—Dickie Thompson Quartet—Laura—What is This Thing Called Love
- 5—Jazz—Dickie Thompson Quartet—Misty, Satin Doll
- 6—Dinner-Dance—Jose Melis—Tonight, Am I Blue, White Cliffs of Dover
- 7—Dinner-Dance—Fred Martin Radio Orchestra—Flamingo, Song of India, Symphony
- 8—Dinner-Dance—Fred Martin Radio Orchestra—I've Got Plenty of Nothin', Ebttide, Autumn Leaves
- 9—Dinner-Dance—Fred Martin Radio Orchestra—Fiddle Fiddle, Blue Tango, Serenata
- 10—Hammond Organ—Bill Thompson—Touch of Your Hand, I Won't Dance, Smoke Gets in Your Eyes

## TAPEBOOK DEPARTMENT TAPE RECORDING MAGAZINE Severna Park, Md.

Please send me the following:

- All About Tape on Tape, 7 1/2 ips. ....\$6.95
- All About Tape on Tape, 3 3/4 ips. ....\$5.95
- Boston, Birthplace of Liberty. ....\$5.95
- How to Stay Alive on the Highway. ....\$6.95
- Add-the-Melody Tape, 7 1/2 ips. ....\$9.95
- How's Your Hearing. ....\$9.95
- MONAURAL MUSIC TAPES. ....each \$1.00

(circle numbers desired)

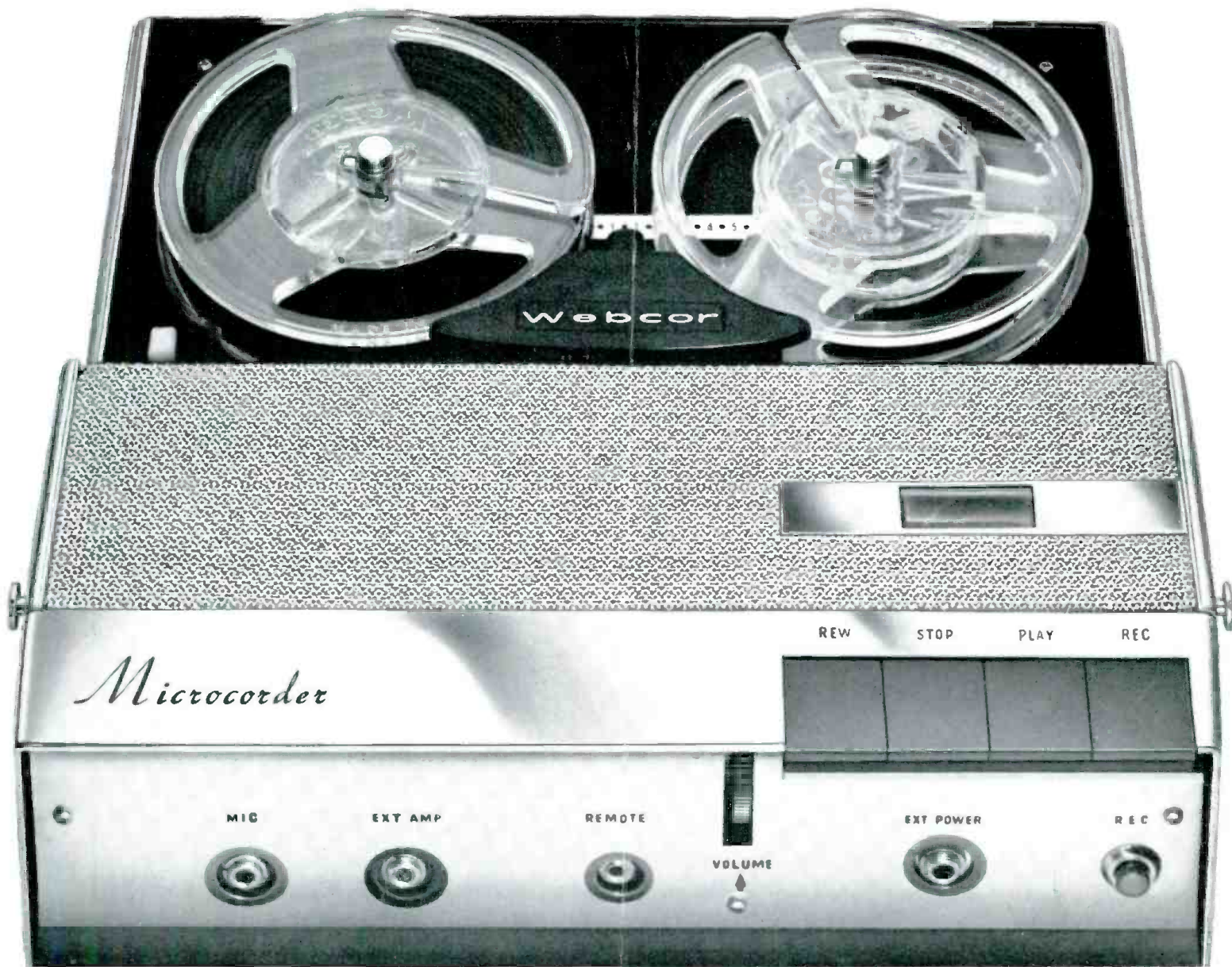
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## New way to take sharp focus candid...on tape!

This is the new Webcor Microcorder—the *portable* portable—shown actual size. Transistorized down to 4¼ pounds with batteries, it's the *one* tape mechanism fit to be shoulder-strapped alongside your fine camera. Uncompromisingly built, the Microcorder asks no quarter. It gives as good as it takes—as you can prove by playing back its recordings on custom tape installations. Versatile! Push button operation, two speeds kept constant by capstan drive. Dual track, records and plays back more than an hour on one reel. Complete with recording level meter, battery life indicator, batteries, wide range mike, dynamic speaker and adjustable leather shoulder strap. Candidly, it's great!

\$175

W E B C O R



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