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December, 1959

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TAPE RECORDING

VOL. 7 NO. 1

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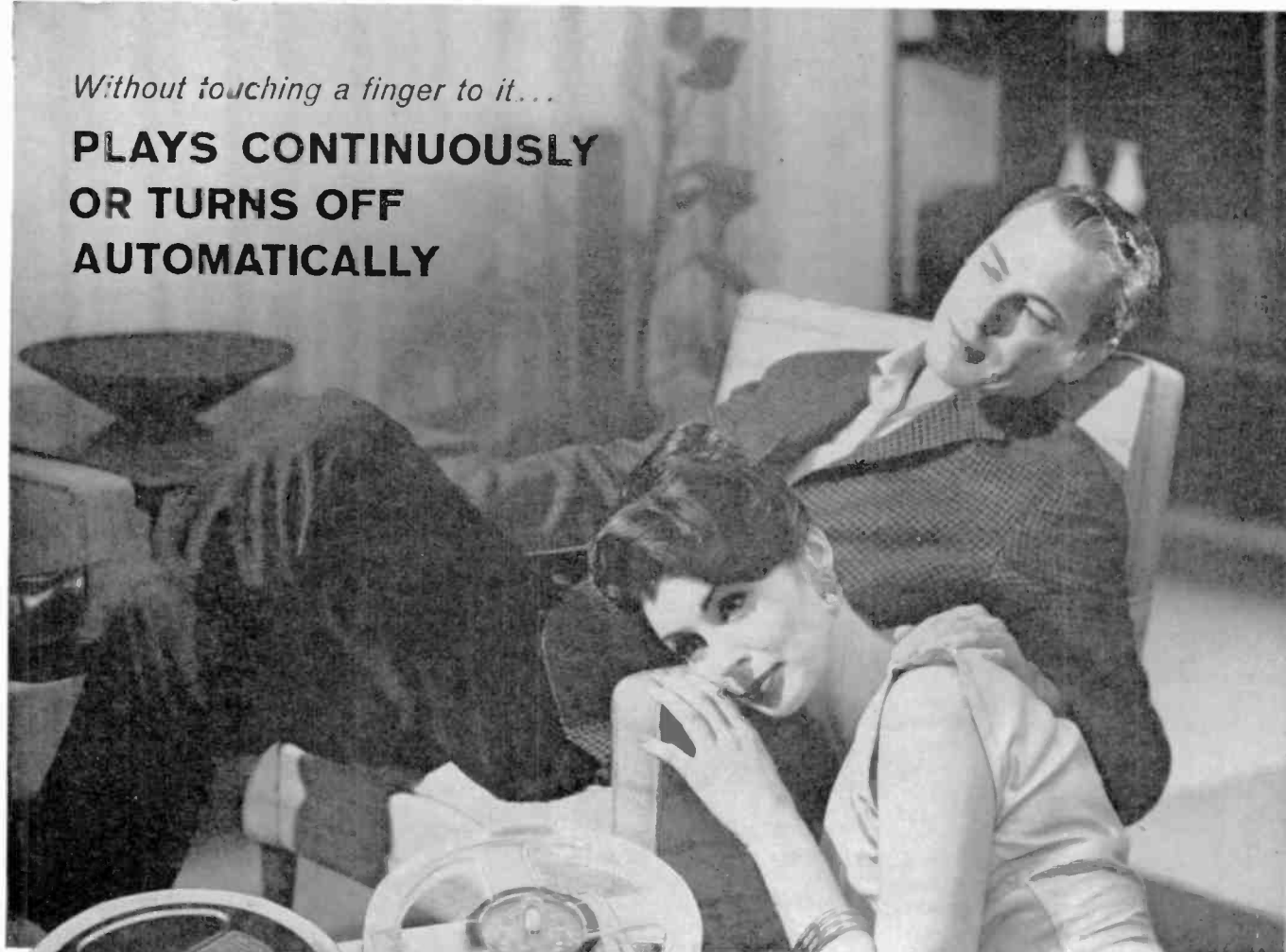
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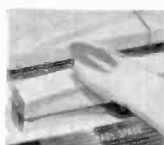
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NEW TAPES

CLASSICAL

BRUCKNER

SYMPHONY #7, E MAJOR

Symphony Orchestra of the Southwest German Radio, Baden-Baden; Hans Rosbaud, conductor.

STEREOPHONIC MUSIC SOCIETY S11

4-track, 7½ ips, reel-to-reel

\$8.95... 1 hr., 10 mins.

This Symphony was composed during the last decade of Bruckner's life. It was during this time also that Richard Wagner died and Bruckner mourned his passing. The coda of the Adagio of the 7th has always been associated with Bruckner's mourning for Wagner.

The first movement begins softly, takes a Wagnerian turn, and closes with a quotation of the chorale from Bruckner's Te Deum.

A rising, thundering brilliance is reached in the chorale — cymbals clang, triangles vibrate, the brass roars, until a peak is reached, and the brilliance gradually begins to dim. It is here the horns deliver a farewell message, written after news of Wagner's death.

The finale fittingly sums up the preceding movements.

Mr. Rosbaud wields a mighty baton and the orchestra respects its directions.

There is a tremendous overall balance in the recording despite its being such a large orchestra. We do not get sectional breakup, nor competitive performances, just a general cooperative effort to give a well organized presentation.

SPOHR

Nonette in F, Opus 31

Fine Arts Quartet, with

New York Woodwind Quintet and String Bass

CONCERTAPE STEREO 24-9

2-track, 7½ ips, reel-to-reel.

\$11.95... 32 mins.

This crisp, always musical performance will remind you more of the works of Mozart and Haydn than of the German Romantics who followed them. The music is intimate, but brings orchestral color into the living room. You can imagine nine musicians playing for you, and with only one instrument of each kind, you recognize and

enjoy the tone color of each. The music itself emphasizes the ordered rhythm that relaxes us in this hectic era. In its precise, intimate fashion, it restores the tradition of "Haus-Musik" to houses where we now listen rather than perform. "Try it for size" as the hat salesman says. It may draw you into a lifelong enjoyment of chamber music.—DSW.

RAVEL

Ma Mere l'Oye (Mother Goose)

Chabrier, Bouree Fantasque

Detroit Symphony Orchestra

Paul Paray, Conductor

MERCURY MS 5-22

2-track, 7½ ips, reel-to-reel.

\$8.95... 21 mins.

Just as we love the children we meet in various countries, we welcome the music composed for them and their families. This suite that became a ballet in 1912 was dedicated earlier to two young friends of the French bachelor. We hear five episodes in this sensitive and tonally attractive recording: Pavane of the Sleeping Beauty, Hop-o'-my-Thumb, Empress of the Pagodas, Conversations of Beauty and the Beast, and The Fairy Garden. A brief work by an earlier French Romanticist completes the tape. Performance and sound are adequate.—DSW.

SHOWS

PORGY & BESS

Side 1: Overture, Summertime, I Wants To Stay Here, My Man's Gone Now, I Got Plenty O' Nuttin', Buzzard Song, Bess, You Is My Woman Now.

Side 2: It Ain't Necessarily So, What You Want Wid Bess?, A Woman Is A Sometime Thing, Oh, Doctor Jesus.

Medley: Here Come De Honey Man, Crab Man, Oh Dey's So Fresh and Fine (Strawberry Woman), There's A Boat Dat's Leavin' Soon for New York, Bess, Oh Where's My Bess?, Oh Lawd, I'm On My Way.

Ella Fitzgerald & Louis Armstrong

VERVE VST 4-206

4-track, 7½ ips.

\$11.95... 1 hr., 8 mins.

Since the movie was released, we have reviewed quite a few versions of Porgy & Bess releases from various companies.

While this folk opera as a whole is very popular, actually there are just certain selections from the score which really found musical popularity. We have often contended that putting all the music from some shows on a release is a mistake.

It fits in and is great when being played during a stage or movie performance, but it loses so much when it is just simply played or sung for a recording. This we feel is in a way disappointing because we enjoyed the whole thing so when it was played for the drama it was intended to enhance, and then suddenly it becomes a meaningless, wordy rendition. We are referring to parts such as "I Wants to Stay Here," or "What You Want Wid Bess?" They fit in fine with the opera, but by themselves they are lost.

Such an opera as this needs feeling in every number, and while we agree that both Ella and Louis are great jazz and blue's artists, and that on this they do a good job, to us they don't have that extra something needed for imparting the feeling this album needs.

We like the Ella Fitzgerald-Louis Armstrong combo, however, and would like to hear more of same with a different group of selections.

Fidelity is excellent. Every Armstrong growl or Fitzgerald purr is faithfully reproduced, and the stereo could hardly be improved.

PAT SUZUKI'S BROADWAY '59

I Enjoy Being a Girl, Love, Look Away, Sunday, Two Faces in the Dark, Just for Once, Tonight, On the Street Where You Live, The Party's Over, Just in Time, Not Like Me, I Feel Sorry for the Boy, Till There Was You.

Pat Suzuki. Arranged and conducted by George Siravo.

RCA EPS-247

2-track, 7½ ips, reel-to-reel.

\$11.95... 35 mins.

For such a small package, Miss Suzuki has a powerful voice. While she can bring it to full volume on a bouncy delivery, she can also get it sultry and intimate on a romantic ballad. Perfect for the Broadway stage, as those who have witnessed Flower Drum Song can testify.

A grand tape for Miss Suzuki's fans, but we prefer releases with a bit more variety. Too much of even a good thing and you begin to tire of it.

Can't criticize fidelity like this — it's just about perfect.

77 SUNSET STRIP

Side 1: 77 Sunset Strip, Late at Bailey's Pad, I Get a Kick Out of You, Cleo's Theme, Caper at the Coffee House, You Took Advantage of Me, 77 Sunset Strip Cha Cha.

Side 2: Kookie's Caper, The Stu Bailey Blues, Lover Come Back to Me, Blue Night on the Strip, If I Could Be With You, Swingin' on the Strip.

Directed by Warren Barker in association with Warner Bros. star instrumentalists.

WARNER BROTHERS WST 1289

4-track, 7½ ips, reel-to-reel.

\$7.95... 34 mins.

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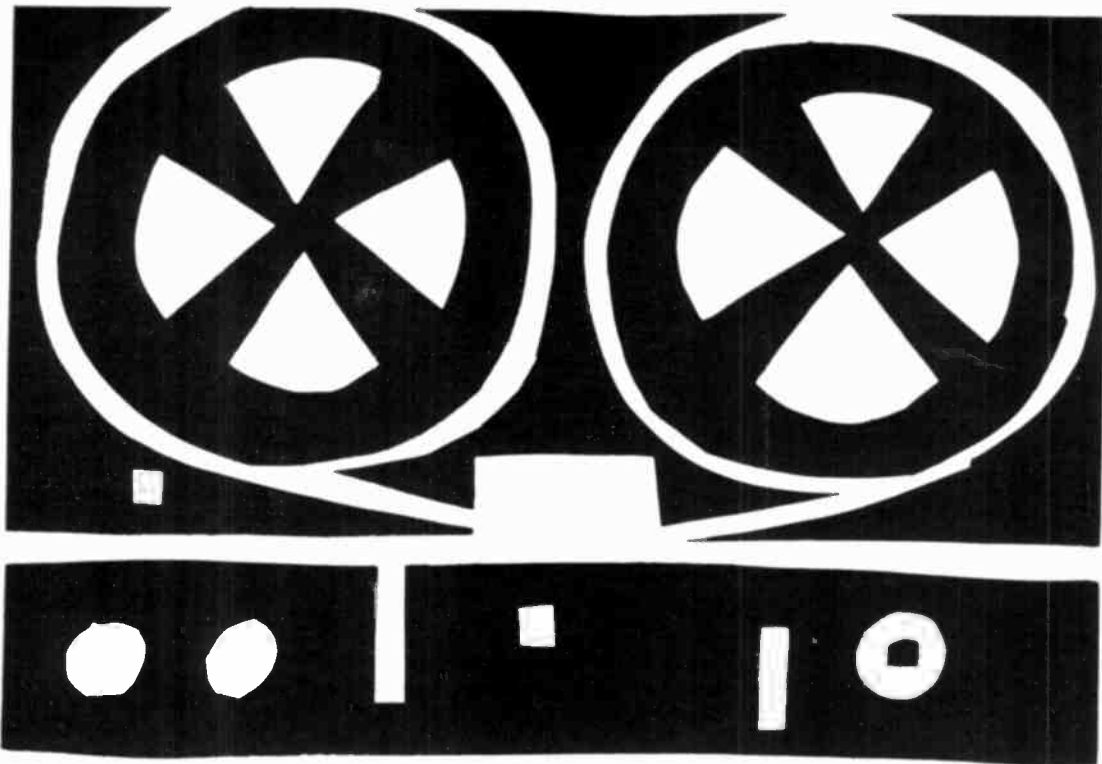
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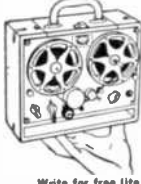
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the present time is 77 Sunset Strip. All the shows have a musical flavoring which lends much to the drama unfolding, whether it be a love scene, "Kookie's" odd chatter, or a chase after the criminal down some dark alley of the Strip.

Prominent in these stories is Dino's restaurant-nightclub which is located not far from the detective's office at 77 Sunset Strip. Music is always very much in evidence at Dino's.

While we don't recommend this tape for dancing, it certainly is interesting to listen to. And we couldn't review it without a word about the variations used on the title song, or parts of it. We hear it played straight, as a cha cha cha, as a blues number and there is also a swinging rendition.

When we hear the name Warner Brothers, we associate it with quality. Their studios have turned out some fine productions. The quality of their recorded tapes is every bit as good as we expected. Stereo balance is uniform, sound is clean and crisp, fidelity is tops.

POPULAR

THE COUNTRY CLUB DANCE

Side 1: Stardreams, Nature Boy, Tenderly, The Breeze and I, Flirtango.

Side 2: We Three, Poinciana, Port Au Prince, Blue Velvet, Manhattan, I'll Walk Alone.

Charlie Spivak, his trumpet and orchestra.
TELECTROSONIC TT-402.

4-track, 7 1/2 ips.
\$4.98 32 mins.

Hats off to Telectrosonic's entry into the realm of recorded tape releases. And a special tip of the hat for having Mr. Spivak and his orchestra among the first releases.

Many of the slogans attached to performers by over-enthusiastic publicity men are just so much poppy-cock. This does not apply, however, to that affixed Charlie Spivak. When he is quoted as playing "the sweetest trumpet in the world," this is no ad man's play on words, but a statement of fact.

This tape is great for dancing, but we honestly got a bang out of just listening to Mr. Spivak's trumpet speak for itself.

Recorded on location at the Diamond Beach Club in Wildwood, N. J., this tape has a velvety tone and unclouded, sharp fidelity.

SECRET SONGS FOR YOUNG LOVERS

Side 1: Blame It On My Youth, Young Man's Lament, You Make Me Feel So Young, Young and Tender, While We're Young, Too Young To Be True.

Side 2: Last Night When We Were Young, Like Young, Younger Than Springtime, A Year of Youth, Too Young To Go Steady, Love Is For the Very Young.

Andre Previn; David Rose and his orchestra.
M-G-M ST 3716

4-track, 7 1/2 ips, reel-to-reel.
\$7.95 36 mins.

The theme chosen for this tape was youth and love. Well sir, the selections may have these two words in their titles, but we couldn't tell it from the music. Perhaps you have to be in a languid, spring-feverish mood to appreciate it properly.

There is a sugar-coating that sweetens to a point, but we get the feeling more of mellowed middle-aged contentment rather than flowering youthful love. The music as a whole is so unvaried, it reaches the depths of weariness rather than the pinnacle of glowing youth.

We do, however, find the blending of Andre Previn's piano talents with the Rose style a desirable one. This team with a more appropos group of selections, would be welcome.

It does appear that the piano was favored in the recording somewhat, but since it was bucking an orchestra we imagine this was to be expected. Otherwise, fidelity is quite good.

DANCING UNDER THE STARS

How High the Moon, September Song, I Can Dream, Can't I, Speak Low, Harbor Lights, I'll Be Seeing You, Come Rain or Come Shine, It All Depends on You, Just A Gigolo, Stay As Sweet As You Are, I'm In Love Again, I'm Happy When You're Happy.

Ashley Adams and His Society Orchestra.
STEREOPHONIC MUSIC SOCIETY S9

4-track, 7 1/2 ips, reel-to-reel.
\$7.95 32 mins.

While Mr. Adams is known as being a favorite of high society, you don't have to be in the Upper Four Hundred to appreciate his music. Stereo belongs to everyone.

Quite a danceable tape fellow collectors. An easy-going, steady middle-tempo beat.

We have listened to so many dressed up numbers with fancy arrangements, sometimes the melody of the song as originally written is lost in the garnish. Such is not the case here. All selections are presented in their proper dressing.

We get just a slight hint of crosstalk here. Other than that stereo effect and fidelity are admirable.

WAILIN' WITH WINNIE

A Good Man Is Hard To Find, Bill Bailey, River Stay 'Way From My Door, Please Don't Talk About Me, You've Gotta See Mama, Birth of the Blues, There'll Be Some Changes Made, How Come You Do Me Like You Do, Ain't Misbehavin', Just Because.

Winnie Gould with Larry Fotine & His Orchestra.

BEL CANTO STB/53
2-track, 7 1/2 ips, reel-to-reel.
\$6.95 25 mins.

Before we say anything else — the cover on this release is enough to make any Marilyn Monroe-type admirer take notice.

Looks like we haven't seen the last of the red hot mama's yet. Winnie Gould shakes the acoustic tile in our sound room when she shouts out her blues renditions. We agree that "wailin'" is the best term to describe her voiceings.

Now we're sure there are followers of this type singer who will definitely want this one in their collection, but unless you recall Sophie Tucker's style, with an added bounce-or two-or three thrown in, let your dealer give you a sampling of this tape before deciding.

Winnie has a powerful, clear voice that can come up with a throaty roll anytime she pleases. It just sort of cuts through the oxide, loud and sharp.

Bel Canto's engineers haven't missed a note from Winnie's healthy lungs and fidelity is tops as usual.

SONGS OF THE FABULOUS FORTIES

Side 1: Holiday For Strings, Sunday, Monday, or Always, Don't Fence Me In, To Each His Own, The Warsaw Concerto, Donkey Serenade, Zip-A-Dee Doo-Dah, Oh, What It Seemed To Be, Some Enchanted Evening, Anniversary Song, As Time Goes By, Riders in the Sky.

Side 2: Buttons and Bows, Blueberry Hill, Linda, Laura, Peg O' My Heart, Symphony, You'll Never Know, Nature Boy, The Last Time I Saw Paris, The Bells of St. Mary's, Jingle, Jangle, Jingle, Now Is The Hour.

Roger Williams with orchestras directed by Martin Gold and Hal Kanner.

KAPP KT 45003

4-track, 7 1/2 ips, reel-to-reel.

\$11.95... 1 hr., 14 mins.

Smooth, flowing music, delightful for just about everything — dancing, singing along, background music, or listening pleasure.

How often have you been to a party or a get-together, and had the host ask someone who plays the piano to entertain

It's our guess the majority of you can recall such a time. Maybe you just sat and listened to a classical composition played, maybe you gathered around the piano and sang, maybe you danced to the music, or perhaps someone else performed to the accompaniment.

Whatever it was, the piano and its player were the motivating force which brightened the affair. If you don't have the instrument, nor the player, you should have a tape of Roger Williams in your collections.

This gentleman is a master on the keys and he is ably backed with orchestras directed by Martin Gold and Hal Kanner.

Songs of the forties brings back memories of the Second World War days — rationing, uniforms, war plant production, etc. And with it all, music. The music was not raucous, loud rock and roll which comes and goes, but of a popular variety that lingers and is pleasant to hear and dance to again and again.

Even the jitterbug music had a fast style truly jittery and those dancers adept at it were something to see. Today the youngsters who advocate rock and roll maintain a monotonous, semi-fast beat that is so unentertaining, you tire of watching it and wonder how they can keep on shuffling through it hour after hour without becoming just plain bored.

Thank you Kapp for bringing out such a refreshing and most welcome tape. Fidelity is luxurious.

MARCHES

MARCHES IN STEREO

Side 1: The Toreador Song, The Parade of the Wooden Soldiers, March Slav-Meadowlands, Colonel Bogey, The Turkish March, The Parade of the Animals.

Side 2: Pomp and Circumstance, Espani Cani, Funeral March of a Marionette, The March of the Toys, American Medley March: Yankee Doodle, Caissons Go Rolling Along, Anchors Aweigh, The Marine's Hymn, U.S. Air Force Song, The Stars and Stripes Forever.

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\$379

Ferrograph Stereo 808

An all-purpose instrument permitting full stereophonic recording and playback together with conventional half track monophonic recording and playback. The output of all channels (stereo and mono) ends at low level so that owner can conveniently make use of his existing hi-fi amplifiers and loud speaker systems. General specification and mechanical features similar to Ferrograph Series 4A.

\$590

Ferrograph Stereo 808/4

An all-purpose Model for conventional stereophonic and monophonic recording and playback. Additionally, it provides facilities for the replay of pre-recorded four-track stereo commercial recordings.

General specification and mechanical features as Ferrograph Series 4A.

\$590

Yes, it's quite true. Rarely has it been possible for anyone in Britain to walk into a shop and buy a Ferrograph from stock. In fact, never since we began ten years ago have we been able to make enough Ferrographs to satisfy the insistent demand.

The reason is simple and understandable. Those who know the Ferrograph know that by reason of its high standard of performance it is in a class by itself. It is, indeed, the incomparable Ferrograph.

Having won such a reputation we will do nothing to hazard it. We do not believe that a Tape Recorder built to such impeccable standards can be mass produced in large quantities without some compromise with quality. And quality with us is almost an obsession.

This deliberate policy of controlled production has inevitably made the Ferrograph one of the most sought after Tape Recorders in the world. It has been widely chosen by broadcasting organisations, by gramophone record manufacturing companies, by leading personalities in music and drama, by industrial research authorities, in fact by all who demand the highest standards of performance irrespective of cost. There are few countries today to which it is not being regularly exported.

All this may be cold comfort to our would-be customers in Britain but even they know that the valuable markets of North America must receive top priority from us in deliveries.

Why not take an early opportunity to contact your Dealer. See and hear the Ferrograph for yourself. It may be a revelation to you.

The Incomparable
Ferrograph

Manufactured in England by

BRITISH FERROGRAPH RECORDER CO. LTD

131 SLOANE STREET, LONDON, S.W.1 and SOUTH SHIELDS, ENGLAND

U.S. DISTRIBUTORS: Ercona Corporation, 16 West 46th Street, New York 36, N.Y.

CANADIAN DISTRIBUTORS: Astral Electric Co. Ltd, 44 Denforth Road, Toronto 13

John Gart at the Conn Electronic Organ.

KAPP KT 41005

4-track, 7 $\frac{1}{2}$ ips, reel-to-reel.

\$7.95... 36 mins.

A delightfully different march tape.

Many tapes of organ music have come our way — most happily we might add. We have never ceased to wonder at the amazing versatility and entertaining qualities of this instrument.

Mr. Gart has accumulated an impressive array of 25 different percussion instruments to accompany his masterful organ interpretations of these marches and together they are superb. The effect used on the U.S. Air Force Song is only terrific.

If you associate marches only with brassy, loud trumpets, drums, bassoons, and the like, then we believe you will get a lift out of hearing them performed like this.

We have found the superior quality of recorded tapes give the purest fidelity in the majority of cases and this release is no exception. We did note, however that the sound volume of this tape was slightly lower than some of the others.

EDUCATIONAL TAPES

Old Testament Literature and Life Religion Series, Campus Library, Campus World, Inc.

By Dr. Gerald A. Larue, Associate Professor of Religion, University of Southern California. 2 hours, 3 $\frac{3}{4}$ ips. \$11.95

This is an excellent tape. The subject matter has been well organized and well presented by Dr. Larue who has a fine speaking voice that makes listening easy.

The tape covers the Principles of Approach to the study of the material, History of Israel, the Early Poems, the Pentateuch, the Prophets, Amos, Hosea, Isaiah, Micah, the Seventh Century B.C., Deuteronomy, Zephaniah and Jeremiah, Nahum, Habakkuk, the Exile, Lamentations, Psalm 137, Ezekiel, II Isaiah, Post-Exotic Period, Haggai, Zechariah, Obadiah, Malachi, Ezra and Nehemiah, Ruth, Trito-Isaiah, the Priestly Writings, Joel, Jonah, Esther, Chronicles, Song of Songs, Daniel, Psalms and Wisdom Literature.

Your reviewer found this tape to be very interesting. The explanations of the various parts and times of the Old Testament of the Bible in the light of present scholarly research bring a deeper understanding.

This is not a "religious" tape but an exposition of the historical background against which the various books of the Old Testament were written and an explanation of the nature of these books, whether poetry, history, legend or other.

Throughout the tape, Dr. Larue makes constant reference to specific passages and chapters of the Old Testament and it is suggested on the tape that the student read those parts in conjunction with the lecture material.

In this we concur. In fact, this tape will require close attention to get the most from it and it is good for more than one listening. We found it best to listen to it and then go back with Bible in hand and stop to read each reference as it is given on the tape before going further.

This tape is not only useful in giving an individual cultural enrichment but might serve also in Bible discussion classes.

AVAILABLE CHRISTMAS TAPES

Concertapes:

Carols for Christmas, Dr. Austin C. Lovelace, organist and choirmaster of The First Methodist Church, 4-track, 301-4.
The Sound of Christmas, The Concertapes Orchestra and The John Halloran Choir, 2-track, 505.

Cook:

Christmas on the Siena Pianoforte, Grace Castagnetta, 2-track, 30-004.

Kapp (c/o United Stereo Tapes):

Christmas Time, Roger Williams, 4-track, KT41019.

Livingston:

Album of Christmas Favorites, Tom and Jerry Vincent, 2-track, 1108-F or 4-track, 4CR-1108.

Christmas At Oberlin, The Oberlin College Choir, 2-track, 2006C.

Omegatape:

Christmas in Stereo, Boys Choir of Vienna, 2-track, ST-2028 or 4-track, SST-812.

Christmas in Stereo, Sing Along Singers and Hollywood Radio City Orchestra. 2-track, ST-7076 or 4-track, SST-833.

RCA:

Christmas Hymns and Carols, Vol. 1, Robert Shaw Chorale, 2-track, CCS-86.

Sonotape (Westminster):

A Merry Wurlitzer Christmas, Dick Leibert playing the Mighty Wurlitzer Pipe Organ, 2-track, SWB 7015.

Cathedral Bellingers, Bellingers of the Cathedral of St. Philip in Atlanta, Ga., 2-track, SWB 7013.

Christmas at Radio City, Dick Leibert, 2-track, SWB 8008.

Christmas Eve in the Cathedral, St. Cecilia Children's Choir, St. Gregory Men's Choir, 2-track, SWB 7014.

Warner Bros. (c/o United Stereo Tapes):

George Greeley, 4-track.

NEW TAPES RECEIVED

SMS, Brahms Hungarian Dances — Dvorak Slavonic Dances, Bamberg Symphony Orchestra conducted by Jonel Perlea, 4-track, S14.

SMS, Strauss Conducts Strauss, Eduard Strauss conducting the Orchestra of the Vienna State Opera, 4-track, S16.

SMS, LeRoy Anderson Presents, 4-track, S15.

Telectrosonic, Irving Berlin's Annie Get Your Gun and Call Me Madam, Larry Douglas; Warren Vincent and His Orchestra, 4-track, TT-410.

Telectrosonic, Bizet's Carmen Suite and Ravel's Bolero, Cyril Holloway conducting the Hampshire Philharmonic Symphony Orchestra, 4-track, TT-409.

Telectrosonic, Fury of the Matador, Don Miguel Valencia conducting La Fiesta de Toros, 4-track, TT-407.

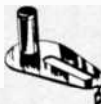
Telectrosonic, Flower Drum Song, 4-track, TT-403.

Telectrosonic, Ray Eberle Sings and Plays The Glenn Miller Way, 4-track, TT-401.



the perfect gift
for every tape
recorder owner

ROBINS GIBSON GIRL TAPE KARE KITS



Every tape recorder owner will welcome these attractive practical tape care kits that are a must for distortion free stereo and monophonic tape recording reproduction. They contain all the necessary accessories for increased tape recording enjoyment and longer life of your treasured tapes and equipment. The nominal cost of these kits — there's one for every pocketbook — will be repaid many times by the recording pleasure and protection they afford your equipment and tapes.

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- Gibson Girl Standard Splicer for quick precise professional splicing and editing.
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 - Tape Threader for quick easy handling of tape.
 - Head Cleaner protects both tapes and equipment by removing dirt, grime and accumulated oxides from head.
 - Tape Cleaning Cloth cleans, lubricates and protects with microscopic film of Silicone on tapes.
 - Tape Clips keep tapes from unwinding from reels.
 - Reel Labels perfect way to identify and catalog your tape library.
 - Tape Editing Book tips on editing and splicing help you obtain optimum performance.
- Only \$12.00 list.

ROBINS GIBSON GIRL TAPE KARE KIT TK4-JR

Contains: Gibson Girl Junior Splicer, Splicing Tape, Tape Threader, Head Cleaner, Tape Cleaning Cloth, Tape Clips, Reel Labels, Tape Editing Book. List only \$10.00.

ROBINS GIBSON GIRL TAPE KARE KIT TK4H

Contains: Gibson Girl Hobbyist Splicer, Tape Cleaning Cloth, Splicing Tape, Tape Clips, Tape Editing Book. List only \$3.50.

ROBINS TAPE KARE KIT TK-2

Contains: Head Cleaner, Tape Cleaning Cloth. List \$2.00.

Robins Tape Care and Record Care Accessories are sold by dealers everywhere. Write for new FREE catalog.

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\$5 down

KNIGHT® KN-4050 DUAL TRACK RECORDER

Features push-button automatic control for instant selection of Record, Play, Rewind, Forward and Stop at either 7½ or 3¾ speeds. Includes digital index counter; safety interlock to prevent accidental erasure; separate tone and volume controls; recording level indicator. Records from mike, radio, TV or phono. Built-in 5-watt amplifier and 4 x 6" speaker for remarkably faithful quality. Easy to operate. Compact—only 30 lbs. Complete with microphone, 5" reel of tape and 7" take-up reel. An exclusive Allied product—unbeatable for value.

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Your buying guide to everything in recording, hi-fi and electronics. World's largest selection of recorders, tape decks, amplifiers, mixers, tape and accessories. Write for your free copy.



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NOTICE

Why convert to 4-track when CAL-WESTERN STEREO offers used 2-track stereo tapes at less than the price of new 4-track? Over 700 titles available at more than 50% off list price. Inline only. Satisfaction guaranteed or money refunded! Catalog \$1.00, refunded on first order. Mail order only and no local sales within 50 miles of San Jose. Shipped postpaid in United States and Canada.

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recording tape
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WE WILL NOT BE UNDERSOLD!
Send for our free catalog and see why!

COMMISSIONED ELECTRONICS CO.
1776 Columbia Rd. Washington, D.C.

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," HI-FI TAPE RECORDING, Severna Park, Maryland. The most interesting and widely applicable questions will be used in this department.

Q—I have a combination record player-radio-tape recorder in a console. I simply cannot get a "clean" tape recording from either the radio or a record. A pre-recorded tape will reproduce perfectly. But anything recorded on the machine has a rumble or background noise resembling—as best as I can describe it—something like the end of a worn phonograph record (without any music or sound). This completely prohibits getting anything enjoyable out of the tape recorder except the use of pre-recorded tape because of the resulting poor quality.

The technicians have cleaned the equipment, checked the pads and cleaned them, checked the tubes of the entire set and still the noise persists. The head has been demagnetized and we tried using an absolutely new record and a diamond needle and the same result occurs.

We have 220 volt 50 cycle current here and use a transformer to convert to 110. That's about all the technical information I can give you.—B.B., Buenos Aires, Argentina.

A—We would suggest that you have your technician check the input of the recorder with a signal generator and an oscilloscope to find out just where the distortion is occurring. Since you have already checked most of the things which could go wrong, it seems obvious that the trouble lies in one or more of the components such as a resistor or capacitor which has failed.

Since the recorder will play back satisfactorily, you should look for the trouble in the record pre-amplifier. While you are transforming your current from 220 to 110, this would not change the frequency and the lower frequency might cause some overheating and part failure.

Before having the unit checked, we would suggest that you try it with the mike for recording. If the mike records satisfactorily, this would further pinpoint the trouble as being in the phono input or perhaps the cartridge itself. The latter can be checked by playing a record without recording it. If the record plays well, then the cartridge may be assumed to be O.K.

Q—The Ampex advertisement states "For letters in sound," the 3" tape reel holds as much as a 10 page letter, mails first class anywhere in the United States for 8¢."

Three inch reels with tape and boxes weigh four ounces or better and the local post office states that letter postage of 4¢ an ounce applies. My mailings cost 16¢ to 20¢. I have had a test made in Southern California with the same results.

Is the information contained in the ad correct or is there some gimmick or reference to postal regulations that should be shown as I have been unable so far to learn other than the ad is incorrect or, at least, incomplete if certain information should

be shown on the mail piece.—R.M., San Francisco, Cal.

A—We weighed a few 3" reels of tape in their boxes and they are under 2 oz. which would make the 8¢ price correct if just a label were applied to the box. However, this doubtless would result in reel breakage (as has happened a number of times) and additional protection in the form of a mailing carton strong enough to withstand the onslaughts of mailing would carry you over the 2 oz. weight.

Your local postoffice is wrong if it is demanding first class postage for the packages may be sent third class for 3¢ for the first two ounces and 1½¢ for each additional ounce. The package must be marked "This parcel may be opened for Postal inspection if necessary," if sent third class.

Delivery, of course, will be considerably slowed as the mail will be traveling third class instead of first. For maximum speed you will have to use the first class rate. The third class rate is effective up to but not including one pound. Four ounces would thus cost you 6¢ to mail. The rate holds irrespective of whether the tapes are recorded or blank, or the nature of the recording.

Q—I would like to be able to synchronize my automatic projector with the tape recorder. Is there any printed material available on this?—T.J.F., Washington, D. C.

A—We will have an article in a forthcoming issue on the new Meston synchronizer which employs metallic strips affixed to the back of the tape to operate the slide projector. LaBelle Industries of Oconomowoc, Wisconsin has a recorder which places a signal on the second track by pressing a button on the recorder. This signal when played through, actuates a relay which, in turn, operates the projector. Another method currently in use is the Synchronomatic, made by Synchronomatic Products, 995 Broadway, Bayonne, N. J. This employs a photo cell which picks up a reflection from white tabs affixed to the tape. Revere Camera Co., 320 E. 21st Street, Chicago 16, Ill. has a device which operates on silent intervals. A space on the tape of quiet four or more seconds long will cause the unit to trip the projector. The last method about which we know is one which employs a slit cut lengthwise in the tape. A metal finger senses this and the contact operates the projector.

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1568-1580 Pierce Ave., Camden 5, N.J.

FEEDBACK

Excerpts from readers' letters will be used in this column.
Address all correspondence to: The Editor, Hi-Fi TAPE RECORDING, Severna Park, Maryland.

Crosstalk — Backtalk

To the Editor:

In the Oct. "Crosstalk" you are whistling "Dixie!"

Couldn't this "biggest boom" you hail easily turn out to be the Biggest BUST ever known by the industry?

Your prophets of Gloom and Doom were only slightly wrong. If music on tape wasn't dead for the past 18 mos. then it was in suspended animation. The supply almost evaporated with only a mere trickle thus far resumed.

That tape "proved itself" as a musical medium "in monaural and stereo" is a half-truth. Monaural was quite a dismal flop.

The reasons for its failure should be of great interest at the moment. It was obviously better, as you've often said, with no wear, surface noise or cracks. But it was just too darned expensive per minute of recorded music in comparison to LP discs.

And so it could develop with your stereo tape—whether in RCA's thin cartridges or on reels. Economies of quarter track help a bit, and—in cartridges 3.75 ips will help some more (although the cost of their rigamarole must neutralize a good part of the savings).

I have said it many times before, and I shall say it again until it changes—tape buyers simply will not spend much more than the cost of stereo discs of the same length and by the same (or frequently better) artists.

Also, what assurance has a person buying a cartridge player of a continuing supply of musical material for his unique machine? If, as could happen, RCA and Bel Canto elect to abandon the project the cartridge-only player will be an utterly useless mechanism.

You may fool some of the people some of the time—but not us backwoodsmen.—*Alfred A. Greenberg, Ridgeway, Ontario, Canada.*

Educators Guide To Free Tapes, Scripts and Transcriptions

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Tape Recording Magazine
Severna Park, Md.

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TAPE RECORDERS**

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TAPE DECKS, TAPE, REPLACEMENT HEADS, TUNERS, AMPLIFIERS AND HI FI COMPONENTS.

Four Track Stereo Tapes

EFSCO SALES 270-K Concord
West Hempstead, N. Y.

PS: We, who are standing pat with previously acquired 7.5 ips two-track stereo tapes and acquiring most new material on cut-priced stereo discs (all quite satisfactory, thank you!) will be quite amazed if any part of this reaches print.

Surprise! Here is your letter, every word of it and we are glad to print it and clear up some points we have apparently failed to make plain. This should send you out rushing for a four-track head.

We assume you backwoodsmen are pretty sharp at arithmetic too . . . so let's do a little.

Two reels of two-track stereo tape cost \$23.80 (11.95 each) on the average. The identical material on a normally priced stereo disc (\$5.98 each) would cost \$11.96. Exactly the same material on a four-track tape costs \$7.95.

Now let's assume you buy a cut priced disc (\$2.98). Two of them would set you back \$5.96. The cost of the tape on which to dub them two channel would be \$3.50 retail. This on our machine adds up to \$9.46—which sounds like quite a bit more than \$7.95 to us.

The point is that with four-track tapes the price is definitely competitive to the stereo disc for better quality. Right?

Tape has been dead for the past 18 months as dealer's mistakenly believed that the stereo disc was equal to the second coming and dropped tape dead. They are now going to have to revise their thinking. What they do not seem to realize is they are faced with a revolution in recorded sound, a superior product at a competitive price.

Monaural is not dead—it is bigger than ever. Every airport has taped background music, the entire Muzak operation is on tape, dance studios, hotels, etc. have all switched to tape. And background music for the home is not a dream either. Just for instance, at the 3¾ ips speed and four tracks you could put 4 hours of music on one reel with no trouble at all.

One reason monaural died was that many people took to recording it off the air . . . but be assured it is a very very lively corpse. You will see it move into the home in the future.

Before the advent of the stereo disc the stereo tape business had reached approximately \$2,000,000 a year in volume. So there are a lot of people who were willing to pay more to have the finest. They are still around, too.

We do not believe the cartridge will be abandoned. Some six companies have announced they will bring music out in cartridge form. More will be along as the number of machines increases.

So before you hike out to the back 40 to knock over a few sturdy oaks just hitch your drag chain to the above facts and skid them into your mental millpond.

PENTRON® STEREO



all new

\$249.95
List



HIGH FIDELITY
TAPE RECORDERS

**SEE IT...
RECORD IT...
HEAR IT...
PROVE IT...**

It's love at first sight . . . first sound with the Triumph . . . Pentron's outstanding, medium priced, professional quality tape recorder that gives you everything you've wanted in one electronic masterpiece.

Look at these features: simple push-button operation . . . only 18 easy-to-carry pounds . . . living room styling . . . ideal for use as tape deck . . . exclusive one year warranty.

...THEN OWN IT!

- Plays 2 and 4 track tapes.
- Built-in 3 speaker performance.
- Guaranteed frequency response; 40-15,000 cps @ 7½ ips, ± 3 db . . . 40-12,500 cps @ 3¾ ips, ± 3 db.
- Two speeds . . . 7½ and 3¾ ips.
- -52 db signal to noise ratio

See your dealer for complete specs and features

There's a Pentron Tape Recorder for your budget . . . Stereo and mono models list priced from \$129.95.

Tape means higher fidelity . . . and sounds best on a Pentron Recorder . . . American manufactured . . . for your quality standards.

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777 S. TRIPP AVE., CHICAGO 24, ILL.

CROSTALK

from the Editors

WITH CHRISTMAS just around the corner, it is time to get set to record the many Christmas presentations from the radio or TV. Do it this year and you'll have it for next.

* * * * *

ONE REASON this comes to mind is the dearth of Christmas material on tape in recorded form. There never was a lot and now there is even less. It seems to us that someone in the tape business is missing the boat. Maybe they figure that by the time Christmas music is over you'll be saturated with it from other sources anyhow—but it still sounds best on tape. What is available is listed on page 11.

* * * * *

WE SEE by an official announcement that Columbia has joined the Magnetic Recording Industry Association, bringing the membership to 46. Forward looking firm that it is, Columbia recognizes the great future that lies in tape.

* * * * *

ANOTHER FORWARD looking firm that believes in the future of tape is Thompson Ramo Wooldridge. Well known for their work in the fields of missiles and space technology, they acquired Bell Sound Systems some time ago. As announced two months ago, they acquired Bel Canto Tapes and now we learn that they have purchased a controlling interest in Magnetic Recording Industries, a firm which for years has specialized in the language laboratory field. TRW apparently is a great believer in the future of tape as an educational media—and they are right. It is good to see such fine research firms entering the tape field for the educators have barely scratched the surface of tape use and are not proceeding as rapidly as the training situation demands.

* * * * *

THE AUDIO SHOW in New York has come and gone and, although we have not seen any attendance figures, we presume attendance was up to normal. Highlight of the show for us was Bell Labs demonstration of a compatible stereo system which can be used for broadcasting stereo and away in a corner with a small sign on it, the original Telegraphone built by Poulsen in 1899. This is the granddaddy of all tape recorders and had been imported by Movic Recorders from a museum in Denmark. We hope that some of you were fortunate enough to see it. We looked at it for a long time.

* * * * *

AS TO THE REST of the show, tape was very much in evidence. The rooms showing how hi-fi components could be hidden away were very cleverly done and doubtless appealed to the fair sex and made the job of selling hi-fi to mama easier. We have the feeling that hi-fi shows will not go on for many more years. While hi-fi is the hobby of a goodly number of people, some manufacturers are already wondering if their huge expenditures of time and money might not better be spent in such things as increased magazine advertising, better literature for dealers, etc. One firm has given up hi-fi shows entirely and has instead, taken to exhibiting at county fairs where there are hundreds of thousands of visitors. Manufacturers should not overlook the fact that their dealers have hundreds of thousands of visitors every year, too. At the dealer level you can buy the stuff, then and there. One show we'd like to see is one devoted to magnetic tape in all of its phases from audio to telemetry and video recording. That could be a humdinger.

* * * * *

ALL TAPE RECORDER manufacturers are reporting banner production, we haven't heard a single complaint. Demand for the new recorders is moving fast. Norelco, which imports from Holland, had to charter two DC-6's to fly recorders over to meet dealer orders. Four track and stereo recording seems to have caught on for real.

* * * * *

THE ONLY SHRINKAGE in tape recorders is in their size. Pentron's Triumph, Webcor's Royalite are new lightweights. Then the ranks of the self-powered portables are growing too. The total trend seems to be toward lightness and simplicity, which is good.

TAPE CLUB NEWS

Organ Music Enthusiasts Growing

The Organ Music Enthusiasts club was formed to unite those who have a love for organ music. It has since grown steadily in membership and activities. This organization now maintains an organ music library where tapes are placed by members. Other members may obtain a tape from this library without charge aside from a very nominal fee for postage and handling.

Besides a directory, the club also offers a newsletter known as Pipe, Reed and Pedal which is published from time to time according to the amount of material submitted by members.

JOIN A CLUB

AMERICAN TAPE EXCHANGE

Stuart Croner, Secretary
181 E. Main St.
Gouverneur, N. Y.

AURORA SCIENCE TAPE SOCIETY

Walt Richard Sheasby, Jr.
215 North Baldwin Ave.
Sierra Madre, Calif.

BILINGUAL RECORDING CLUB OF CANADA

J. P. Paquette, Recruiter
1993 Morgan Boulevard
Montreal, Quebec, Canada

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

ORGAN MUSIC ENTHUSIASTS

Carl Williams, Secretary
152 Clifzbe Avenue
Amsterdam, New York

TAPE RESPONDENTS INTERNATIONAL

Jim Greene, Secretary
P. O. Box 416, Dept. T, St. Louis 66, Mo.

THE VOICESPONDENCE CLUB

Charles Owen, Secretary
Noel, Virginia

UNITED RECORDING CLUB

Richard L. Marshall, President
2516 S. Austin Boulevard
Chicago 50, Ill.

WORLD TAPE PALS, Inc.

Marjorie Matthews, Secretary
P. O. Box 7211, Dallas 15, Texas

FOREIGN

AUSTRALIAN TAPE RECORDISTS ASSOC.

John F. Wallen, Hon. Secretary
Box 970. H., GPO. Adelaide, South Australia

TAPE RECORDER CLUB

A. Alexander, Secretary
123 Sutton Common Rd.
Sutton, Surrey, England

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

Voicespondence Librarians Busy

VS-ers L. E. Griffith, Illinois, and Al Shade, Ohio, during the past year recorded 676 copies of special tapes in the Voicespondence Club's Tape Library for other members. Griff and Al are Librarians for the club, and give their time and recording equipment freely to be of service to their fellow members. Use of the Tape Library's facilities is free to members.

Hawaiian Tour Planned

World Tape Pals are planning a People-to-People Hawaiian Holiday tour, scheduled for July 18 through 23, 1960 which is not limited just to World Tape Pals members nor to people in any particular country.

Economy-priced, the tour will require a full week from the time the group leaves Los Angeles till their return, and will include hotel reservations, flight on a DC-8 jet via United Airlines, and many innovations not accorded the average tourist to Hawaii. Sightseeing trips and meetings will be planned, but plenty of free time for individual activities will still be available.

For details of the People-to-People tour, write: Grace Cordray, 52-R N. 7th St., McConnellsville, Ohio.

Canadian Club Notes

J. Maurice Roussel, president of the Bilingual Recording Club of Canada has announced the appointment of Jean Roy and Rene Fontaine as directors of the club.

Hugh Sawyer, well known Maine organist, has just passed a weekend in Montreal visiting his BRC fellow members. He took the opportunity to make a tape recording of organ pops for the club library. Hugh is now back in Maine, playing organ in some of the larger hotels.

C. Andre Coulombe, secretary treasurer of the BRC of Canada was married on October 24th. He is honeymooning in the U.S. To Andre and his Mrs. everyone extends best wishes.

Hildegarde Tapes Message

In an interview with the "Incomparable Hildegarde" in September, this sparkling performer spoke to several members of Catholic Tape Recorders of America, International, and left a taped message for all its members. She said, "I think the idea of exchanging tape recordings throughout the world is an excellent one."

She was so impressed with the idea of exchanging tapes, she has intentions of purchasing a tape recorder herself.

At the close of the interview she presented her newest record titled "I Love You in Any Language." About this she says, "I call it a song which I dedicated to the United Nations, so all languages, all nationalities, all peoples will live in peace . . . please God!" The record is sung in six languages.

Make your own stereo tapes—play them back on a Webcor Stereo Hi-Fi Tape Recorder!



Now you can actually *make* and *play back* your own stereo tapes of live jazz sessions, concerts, dramatic performances and party fun. Yes, and you can make stereo recordings of stereo broadcasts—even tape stereo music from stereo fonograf records!

The Webcor Regent Coronet 2007 Self-Contained Stereo Tape Recorder will *record* and *play back* both stereo and monaural tapes. 2-track and 4-track stereo playback—dual-channel 16-watt amplifier—two directional cardioid-type microphones. 2-piece external speaker system for even finer stereo (optional). Webcor Tape Recorders from \$159.95.*

*Slightly higher South and West

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HI-FI TAPE RECORDING
Severna Park, Md.

NEW PRODUCTS

NEW DANISH RECORDER



Movic Company, Inc., 415 15th St., Santa Monica, Calif. has introduced their Danish-made Movirecorder. Among the features of this machine are included speeds of 3¾ and 7½ ips, wow and flutter less than 0.18%, signal-to-noise ratio 50 db or better at faster speed, 2 built-in 3 watt output amplifiers, 2 VU-meter amplifiers, push-pull erase/bias oscillator, a hysteresis synchronous capstan motor, 2 custom reel motors and automatic shut-off. Two other features include sound on sound recording; and an echo effect, for variety and interest, which can be added while recording by merely pressing the echo button. This recorder is available with two separate playback heads, one for ½ track and one for ¼ track stereo tapes. For complete information and price, contact the manufacturer.

HARTING LINE



A new line of German-made recorders is being distributed in this country by Hansa Trading Corp., 29 Broadway, New York 6, N. Y. This is the Harting line. Model HM-4 contains a completely self-contained monaural recording and playback system. Model HM-4S is a stereo model which can record stereophonically when equipped with a second channel recording preamplifier. A second channel speaker-amplifier or the phono input of a radio or monaural hi-fi system is needed for stereo playback.

Included among the machine's features

are: an air gap of only 47 millionths of an inch, a built-in safety lock, a monitor switch, unique "fingers" to control tape position against the head, digital counter, and speeds of 3¾ and 7½ ips.

Write to Hansa for additional information.

NORELCO CONTINENTAL



The Norelco Continental "400" (Model EL3536), 4 track stereo record and playback tape recorder has been announced by the High Fidelity Products Division of the North American Philips Co., Inc., Hicksville, L.I., N.Y. The unit consists of tape drive mechanism, two pre-amplifiers with controls, two 4-watt power amplifiers, and a Norelco wide-range speaker with extra powerful magnet. Also furnished is a Norelco dynamic, full frequency stereo microphone. It has three speeds, 7½, 3¾ and 1⅞ ips; simple piano key controls; inputs for recording from microphone, tuners and phono, with facilities for mixing mike with tuners or phono; an output jack for monitoring with stereo headphones; frequency response of 50-18,000 cps at the faster speed; signal-to-noise ratio better than 55 db; and wow and flutter 0.15% at the faster speed. Other features include modulation indicator, program indicator, pause button with locking device and automatic stop. The "400" is priced at \$399.50. For further information, contact the manufacturer.

Credit Where Credit is Due Dept.

We should have mentioned in the Oct. issue that the heading for the two-track, four-track story was drawn by the Magnetic Recording Industry Association.

Also, in our September issue, the fine story on the educational tape activities of Kent State University was credited to Frank Hall—it should have read Dr. Ralph Hall.

RECORDING TAPE

Premium Quality — 10 day money back guarantee
1200' Acetate 3 for \$3.50 — 2400' Mylar 3 for \$9.60
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TAPE IN EDUCATION

Robert C. Snyder

LAST month we promised you a column on tape recorder maintenance. Although this may seem to be more of an education in tape than it is tape in education, we think it useful.

Your recorder must work properly whenever you need it if it is to be effective as the marvellous educational tool that it is.

Any of the first quality recorders is built to give you extended trouble-free use. At the same time—like any other piece of machinery—your recorder needs to be kept clean and *properly* lubricated, and after long use worn parts must be replaced.

Cleanliness is the most important first step in tape recorder maintenance. All parts of the recorder should be kept clean and free from dust and dirt. When not in use, the recorder should be covered. Either close the case or use a plastic cover just as you would over a typewriter or any other valuable piece of office or classroom equipment.

Dust, dirt, and magnetic oxide from the tape itself are the main cause of trouble above the panel. Loss of fidelity and volume are frequently caused by accumulations of magnetic oxide and other dirt on the gap of the erase, recording and playback heads. This accumulation of dirt holds the tape away from proper contact with the head and produces sloppiness in the recording and the playback. Such sloppiness is first reflected in a noticeable loss of the higher frequencies, and later in a loss of volume. The result is much the same as if the tape were threaded up-side-down so the oxide side of the tape was away from the head. Even a very small amount of dust can cause objectionable distortions so keep the heads cleaned.

Tape squeal is also caused by dirt. After a time, dirt, oil, etc., from the back of the tape will accumulate on the guides and will also harden or glaze the pressure pads. When the tape passes over the dirty guides or the hardened pads it vibrates and squeals. Because of variations in thickness and stiffness of different kinds of tape, this squealing may be more pronounced with one tape than with another.

Heads, pressure pads, tape guides, capstan rollers, etc., can all be cleaned with alcohol or one of the special tape recorder cleaners and a small brush, Q-tip, or pipe cleaner. Carbon tetrachloride and cleaners based on carbon tetrachloride should not be used on rubber surfaces such as pressure rollers or drive belts because they can soften the rubber and cause glazing which will in turn cause slipping.

PROPER lubrication is a matter requiring considerable care. Too much oil is a real hazard. The oil will cause slipping of pads, rollers, belts, etc., and can cause the tape to travel too fast or too slow, or cause flutter or wow due to irregular slipping of a drive component.

Most modern recorders have oilite bearings. These bearings are impregnated with oil when they are made and should not need any additional oiling for the life of the bearing. A good guide to follow is to read carefully the maintenance suggestions which the

manufacturer provided with your recorder. If they do not call for oiling we would suggest you leave this alone.

Stray or residual magnetism in the heads, guides, etc., is another cause of noise and loss of quality in recordings. A very useful tool is a head demagnetizer which can be bought for prices ranging from a few dollars up. When it is important to have a minimum amount of background noise and hiss on the tape, demagnetize heads every five or ten hours of use. For normal teaching use, it should be adequate to demagnetize whenever the background noise becomes high enough to interfere with the use to which the recorder is being put. Detailed instructions for demagnetizing will be found with the demagnetizer or in any of the standard tape recorder reference books.

After extended use, wear will develop in various parts of the recorder. Normally, replacement of parts should not be necessary before at least 1,000 hours of operation. Where a machine is used four or five hours a week, this is the equivalent of about five years operation.

After even longer use, say 5,000 to 10,000 hours (the equivalent of 2½ to 5 years of continuous use 8 hours a day, five days a week) record and playback heads may be worn down to the point where they need replacement. Head replacement should be done by someone who has the ability and equipment to get the heads into proper alignment.

If heads are out of alignment, high frequencies will be badly reduced. Head alignment can be checked with one of the test tapes available through most dealers.

Electronic parts of the machine may also become defective from use or age. Tubes in the amplifiers may deteriorate and the machine will lose volume and fidelity. Tubes are similar to those used in radios and amplifiers and often will give several years of use without trouble, but may show signs of failure after about 1,000 hours of use.

Many supposedly electronic troubles in recorders can be traced to simple faults. If the machine does not operate, make sure that it is plugged in, that sockets and leads are making contact, and that all switches are turned on and the machine being operated in accordance with the manufacturer's operating instructions.

If the machine will not record, make sure the microphone or other input lead is properly plugged in and that the leads are not broken or wires loose at either end.

If you feel qualified to make repairs and adjustments inside your recorder, we would still suggest that before you start you obtain a copy of the manufacturer's service manual, or refer to one of the better manuals on tape recorders such as "Elements of Magnetic Tape Recording," by N. M. Haynes.

Otherwise, we would suggest that you take your tape recorder to a qualified audio-visual dealer or to a technician who is familiar with tape transport machinery as well as electronic circuitry.

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The 210 Dynamic Microphone is electrically phased. Non-directional pattern to 2000 cps becomes somewhat directional at high frequencies. Frequency range: 40-20,000 cps. Output level: 50 ohm -86 db, 200 ohm -80 db (-59 db Ref Hi Z). Complete with 20-foot rubber covered three conductor shielded cable. High impedance models also available.

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85 Broad Street, New York 4, N.Y.



FUN TIMES LAST

on tough, durable tapes

What a great time of the year to have a party . . . and a tape recorder! Everything's in full swing—Thanksgiving, Christmas, New Year's, after-the-game celebrations. And these fun times will stay with you forever . . . when you record them on tapes of "Mylar"* polyester film.

Tapes of "Mylar" are age-resistant . . . can never dry out or get brittle. They're extra-tough . . . with

built-in muscle that gives you a 300% safety margin against stretching.

You don't have to pamper these rugged tapes with fussy storing, either . . . because heat and moisture just can't affect them. And because they're thin, you get up to 50% more playing time per reel.

If you are not now one of the thousands of recording fans who have discovered the unmatched advan-



A LIFETIME of MYLAR®

tapes of these top tapes . . . then ask your dealer for a reel of your favorite brand of tape made of "Mylar". Once you've tried them, you'll be convinced that for fun-times recording or for any other recording situation tough, durable tapes of "Mylar" polyester film are the best tapes that you've ever used.

"Mylar" is Du Pont's registered trademark for its brand of polyester film. Du Pont manufactures "Mylar", not finished magnetic recording tape. Tapes of "Mylar" are made by all manufacturers.



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Christmas and Me

By A. Tape Recorder
As Told to Jean Cover
Cartoons by Gladys Mooney



"This ribbon's killing me."

. . . . ever wonder what a tape recorder thinks? This one speaks out.

"NOT much longer to wait, they'll be up soon, kids are probably half-awake already. I hope it's soon though cause this tight ribbon is killing me, not to mention my wrapping—I think I'm being smothered.

"What's the human expression? That's it—'flip my lid'—that's what I'll do, I'll 'flip my lid' if I don't get into the open soon.

But if I 'flip my lid' I might also crush my spindles, or tilt my VU meter and then I would be a sorry gift—guess I'll just have to wait.

"I'm a tape recorder (in case you haven't guessed), and here I am in this ridiculous getup, parked under a Christmas tree waiting for some wide-eyed, open-mouthed humans to gaze upon my exquisite packaging.

"They could have at least not put me so close to that lower branch, the needles are beginning to tickle.

"Hope they remembered the cleaner and lubricant, along with the splicer and splicing tape. Oxide makes my heads ache so, I can't help squealing once in a while.

"There it goes again, I know that was a giggle. They'll be here soon. I don't think I can stand being silent much

longer. If they're one of those 'we'll open the gifts after breakfast' families, I know I'll throw my hysterious synchronous motor out of whack.

"Here they come. Glad the man human made me a gift for the whole family—this way I'm sure to be kept in constant use. Dust always did slow down my joints.

"I'm first—they're going to open me first. Ouch—hey take it easy, those darn fingernails scratch.

"Now—NOW—look at me—AT ME. Aren't I gorgeous? Here I am—I'm yours—and if you take care of me, I'll serve you long and well. Feel my leather covering, push my control buttons, notice that I can record and playback stereo, and—oh please, read the instructions my maker sent with me.

"They're smiling—I'm so happy I know my fidelity just went up a few cycles.

"What's that—oh lucky me—he's going to try me so they can record the rest of the gift opening fun.

"I'm plugged in now, my chassis is warming. Just slipped on a reel of tape—they're using Mylar. Nothing but the best I always say.

"Now the takeup reel—I'm bursting with pride. Whoops! I'm so easy to thread, I didn't even feel it.

"Go ahead baby human, touch my green meter light, isn't it pretty. You and I are going to be buddies forever you know, and years from now when you listen to me playback your own baby talk, you'll be tickled as can be.

"Mikes are in now, I think I'll just check my preamps and amps—my speakers never felt better.

"A party, she said they can use me at the party tonight. A party on my first day, Christmas day, how lucky can a tape recorder get.

"Wonder if they've heard about how I can record goofy answers to questions by having a question recorded beforehand and substituting a different one when asking a guest to please record an answer.

"On this occasion they could have the questions deal with Christmas. I just thought of one—I could record 'How would you feel if Jim kissed you under the mistletoe, Mary?' Then my human would turn me off and ask 'what would



"What a bunch of hams!"

you do if Jim accidentally spilled eggnog on your lovely party dress, Mary?' Then my human would turn me on and I would probably record an answer something like 'I'd wash it off immediately and try to ignore the whole mess,' from Mary.

"I just know I'll be the life of the party.

"Volume's all set—he's going to run a test first—my human's strictly on the ball. He's using my $3\frac{3}{4}$ ips speed, which is hunky-dorrie for recording speech.

"Record button in—okay make some noise . . . come on, make some noise. I do believe they've twisted their vocal chords.

"The dog barked—well, at least he's not afraid of me. That did it—now everyone's talking at once. Come on, ham it up—sing, whistle, yell—that's it.

"Notice my speedy rewind—bet you humans couldn't turn like that.

"And now, dear owners, prepare for a never-to-be-forgotten experience. Give a listen!

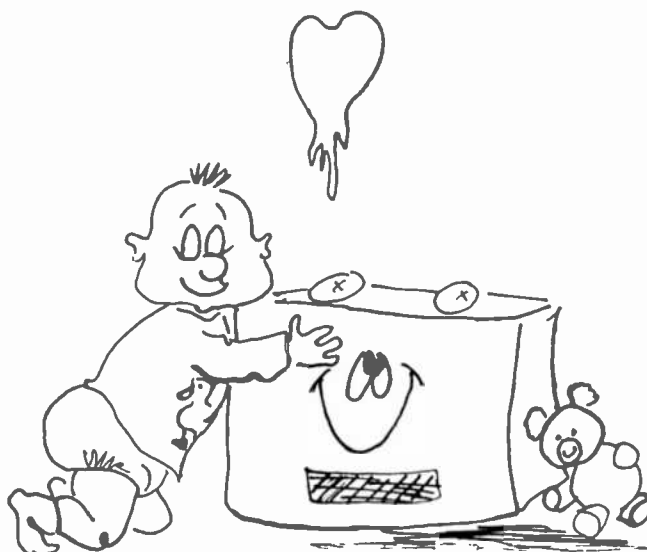
"They love it—look at the kids clap.

"Introductions over—now they are going to let me run while they open all the presents.

"You couldn't be righter mom—I'll help the kids with their homework and lay you 8 to 10 their marks are higher next term.

"That box over there has a familiar squarish appearance. Looks like recorded tapes. She's opening it now—ahhhhh, recorded Christmas carols. Let's see there's Kapp's Christmas Time, featuring Roger Williams; Livingston's Album of Christmas Favorites, featuring Tom and Jerry Vincent; (move your head a smidgin to the left son—that's better) and RCA's Vol. 1 of Christmas Hymns and Carols, with the Robert Shaw Chorale. See listing of Christmas music on page 11. I can hardly wait to reproduce those long-lasting magnetic patterns.

"Jeepers, I hope they take me along to church services. Chances are the choir will sing carols and I can record them in full stereo. Yessir, do my capstans good to record some religious sermons too. Even we tape recorders can't be all good you know.



"We'll grow up together."

"All gifts are open now and my humans are settling down a bit, but I've preserved every expression of delight, every childish laugh, every warm thank-you for all the years to come.

"They're going to play a reel of carols now. Just wait till they hear my musical fidelity at my $7\frac{1}{2}$ ips speed.

"Junior wants to know if they can record the performance of Dicken's Christmas Carol this afternoon. Wish I could answer for him. All they have to do is plug Jack (he's one of my assistants) into my input, and connect the opposite end of his wire to the speaker terminals of the TV and we're all set.

"I'll record every sound of the show from the Spirit's clinking chains to Tiny Tim's endearing Christmas message, exactly as the TV speaker sends it forth.

"I'm really rolling now—Silent night, holy night . . . what a perfect Christmas song . . . dum, dum, de . . . sleep in heeeeeeavenly peeeeeeeeeece.

"Doorbell's ringing—somebody get that. More humans—more gifts. Looks like we're right back where we started, and it suits me just fine, cause now I belong and you can take it from me—I'm one happy tape recorder."



"Some party—Swing 'er Sam."

HOW TO THREAD TAPE

HERE in picture form is the easiest, the best and the fastest way to thread a tape recorder. Since reel turnover will again become more widespread than ever due to the new four-track system, you will be able to change tapes faster than records if you do it this way. One rule to remember: always let the tape run all the way through. Do not attempt to change reels before the tape runs out. Not only will you have to dash from your easy chair to reach the recorder before the end passes through but you stand a good chance of breaking the tape because it will hang up in the slot.

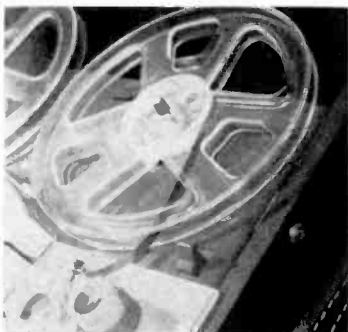
1 Place the reel on the supply spindle and pull out about two feet of tape. Lead the tape through the head slot and past whatever tape guides or cutoff switches your machine has.

2 After the tape is in the slot and past the guides, slip it between the reel flanges as shown, still keeping hold of the same end you started with.

3 Lay the tape up against the hub at the center of the reel, letting the end go so you can use the same hand for the next step. Place the index finger through one of the openings in the reel and press the tape against the hub.

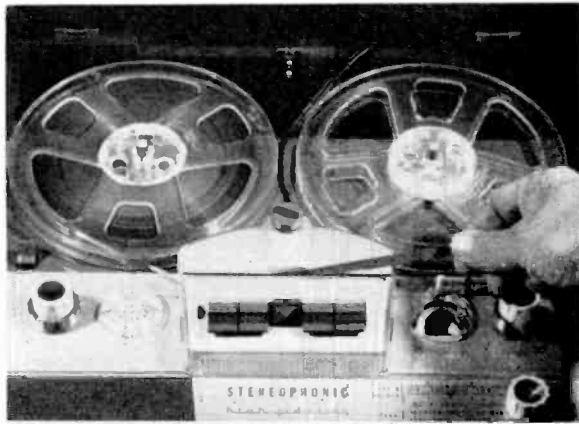
4 Holding the tape against the hub, rotate the reel a turn or two. This will cause the tape to cinch against itself. It does not matter if more tape feeds from the feed reel or not as the original amount of tape you unwound for threading will be enough.

5 Withdraw the finger and give the reel a turn to tighten the tape and take up the slack left by the removal of the finger. This completes the operation and you are now ready to play or record. With practice a recorder can be threaded in a few seconds. This is the method the pros use and so do the instrumentation recorder operators.

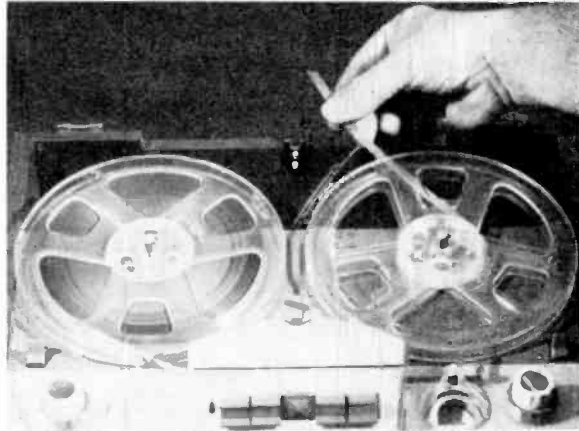


If you like to live dangerously you might try this. Thread the tape through the head slot and simply lay it against the center hub and start the recorder. The reel will spin and catch the tape itself. Warning: the tape may break if it doesn't catch rather promptly.

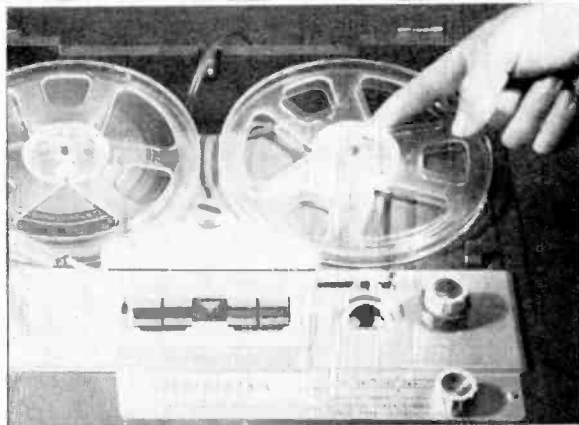
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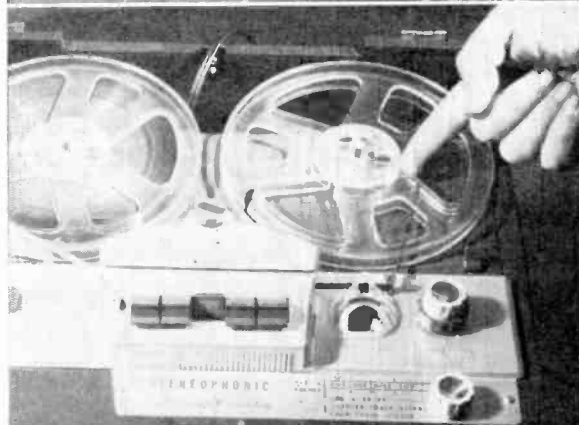
2



3



4



5





MEET A FEW OF
THE MORE THAN
201 PEOPLE IT TAKES
TO PRODUCE A STEREO-
PHONIC TAPE AT
BEL CANTO.



by
Russ
Molloy,
President
Bel Canto

MUSIC is man's constant companion. He wakes up to it at home, drives to work by it and it even accompanies his shopping at the grocery store. So much does man enjoy music that he has literally spent billions of dollars for it from the first crude wax cylinders to today's magnetic tape.

If it were not for magnetic tape, the first sentence of this article would not be true. The growth of the record industry runs parallel with the development of magnetic tape recording equipment. Starting in 1943 with improvements on the German Magnetophone, which was full track 30 inches per second, our engineers were able to record and reproduce signals from 15 to 15,000 cycles per second. This closely corresponds to the limits of average human hearing.

By 1947 this same frequency response could be obtained at 7½ inches per second but it wasn't until 1955 that two channel stereo at the 7½ inch per second speed became a commercial reality. Then a few enterprising and pioneering companies began to produce stereo for home use.

Equipment, magnetic tape and production costs were very high and a half hour program of stereo music on tape cost \$11.95. But the man at home finally had a professional recording that wouldn't get scratchy or noisy after a few plays, as did his records.

A new market was born and engineers designed better recording and playback heads. The tape companies came up with finer oxides, and equipment manufacturers began to turn out better equipment at moderate cost. Everyone was working toward a common goal—of reducing the cost of stereo tape so that it would be within the reach of everyone but *without reducing the quality*.

Late in 1958 came the breakthrough. Four track heads became available. This meant that twice as much music could be put on the same length of tape. Formerly a 32 minute program needed 1200 feet of tape, but now, with four track 7½ inch per second speed, only 600 feet is needed. Prices of tape tumbled to \$7.95.

In the short time that four-track tape has been available (since June of this year), tape producers have been working at top speed to revamp their every expensive high speed duplicating equipment. In the old two track system, the master tapes were on regular ¼ inch tape. These were placed on a master machine which fed the signals to as many "slave" units as necessary. The duplicating tape speed was 60 inches a second, the most that the heads could handle and maintain the quality.

Now the master tapes are all on ½ inch tape and, because of improvements in the design of equipment and heads, the tape speed for duplicating has been boosted to 120 inches a second. Thus the trackage has doubled from two to four at a clip and the time of duplication has been halved, as has the amount of tape necessary. These considerable savings have been immediately passed along to the public in the form of drastically lower prices.

Tape always has been a high-grade, precision product and every advance in technique has brought the necessity for greater care and closer tolerances. Now, four channels of amplification must be maintained with hairbreadth calibration in order to preserve the standards of 15 to 15,000 cycles per second. Starting torques and tape tensions at such high speeds require minute care and checking. Master and slaves must be kept in tip-top condition.

This changeover to four track production was not with-

The following photos show only a few of the many people who are employed to produce a Bel Canto Stereo recording. Musical arrangers, copyists and conductors start their work weeks in advance of a recording session. The art director and his staff of artists and photographers and printers begin their work. At the time of the actual recording many unseen men begin their work — recording engineers and technicians, the producer and the musicians; and now the album begins.



2

Here the engineer monitors the tape and compares it to the musical score. After final editing to cut out any errors that may have been recorded (if a fluff is made the band goes back and does that part over) the tape is ready for the duplicating master to be made.



5

After being wound on the reels the tape is labeled and boxed. Each reel is physically inspected for flaws and checks are made for quality control purposes along the way. Here the tape is being boxed for shipment.

out its problems. The master tapes used on the high-speed duplicating consoles had to be changed from $\frac{1}{4}$ inch two-track to $\frac{1}{2}$ inch four-track, as mentioned earlier. All of the tape masters (which are made at 15 inches per second) were withdrawn from the fireproof vaults and sent to the editing room to be converted to $\frac{1}{2}$ inch tape masters. It takes an average of two hours to process a master program of 30 minutes. Constant, meticulous checking must be done every step of the way.

Then, after the master is completed, test copies are run at high speed and compared with the master again before they are given approval for production running. Bel Canto has estimated that it took one man six weeks of steady work to prepare the four-track master catalog.

A finished tape in its attractive four-color box doesn't "just happen." We have figured that it takes more than 201 different people, most of whom you never see or hear about, to place that tape on your dealer's shelf where you can get it conveniently when you want it.

Taking things from the very beginning, it is like a snowball rolling down hill gathering size as it goes. First, of course, is the composer who originates the melody. He may have a collaborator to add words if necessary. Then the arrangers, the musicians, the recording engineers, the conductor; all these must be assembled before a single note becomes a reality.

Once the tune is "in the can" another parade begins, the tape editors, the package designers, the advertising people, the duplicating technicians, the printers and engravers, the box maker, the tape packer and shipping clerks and a host more people not directly connected with the operation. All working together to put the tape in your hands.

But tape is only beginning. Video tape in the home is not too many years away. Sight and sound on tape is the next giant step to provide your home with all levels of entertainment . . . on tape. You will be able to buy recorded stereo video tapes of your favorite opera or Broadway show.

Those things are for the not too distant future but right now, today, because of the technical advances in machines, heads and tapes, four track $7\frac{1}{2}$ inch per second tape is the finest medium for music reproduction available.



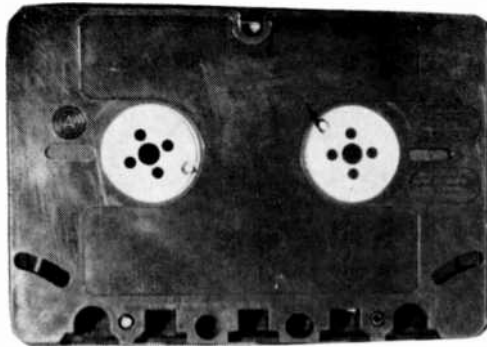
1 Recording musical program on tape requires hundreds of man hours. Musical arrangers, copyists, engineers, technicians and, of course, the leader and his musicians all have a hand in the production. The photo at the left shows Si Zentner and the band recording Hi Noon Cha Cha Cha. Photo above and right shows Larry Fontina and the boys working on the Dixieland tape "Take 5" as issued by Bel Canto.



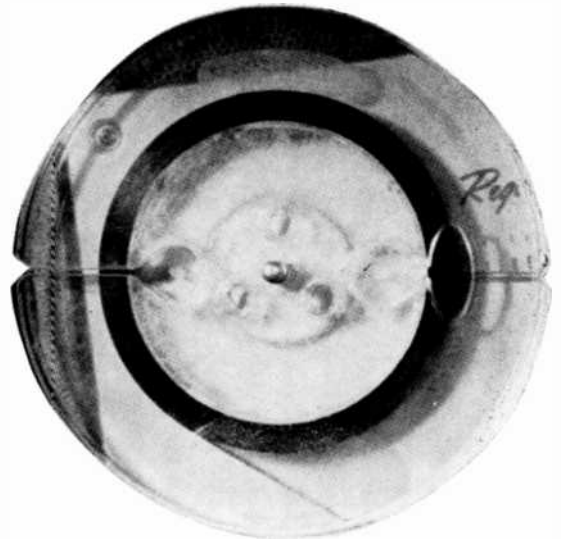
3 After the duplicating master has been made the tape is further checked out on the master console before beginning a production run. Now that four track tape is here, the operator must be sure that all four channels stay within a hairbreadth of each other. Tape speed is 120 ips.

4 The console feeds the "slaves" and each tape is recorded individually with the signal from the master tape assuring top quality. Improvements in heads and amplifiers have made high speed duplication practical. Each machine turns out a single tape on each run. Tape supply is on large hubs. Below: enjoying the finished product at home.





by
Bart Pierson



FROM CARTRIDGE TO REEL

. . . if the music you want is available only in cartridges you can reel it yourself.

ALREADY the owners of reel-to-reel machines are becoming aware that the presence of music on tape in cartridge form only is not going to interfere with their listening pleasure.

The reason, of course, is obvious. All that needs to be done is to remove the tape from the cartridge and put it on a reel. The cartridge may then be discarded.

All cartridge tapes are four track and, so far, all are stereo. We would not be too surprised to see monaural tape come back again in cartridge form for, with an automatically reversing cartridge machine you could put more than two hours of music in a single unit.

All cartridges run at the $3\frac{3}{4}$ ips speed, but this does not concern any reel-to-reel recorder owner since most machines are dual speed, or three speed, and will play the $3\frac{3}{4}$ tapes with the flick of a switch.

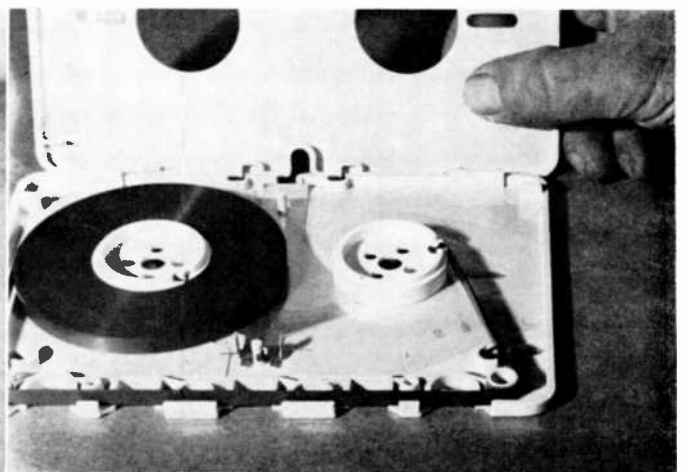
While the output of reel-to-reel tapes has increased phenomenally (100 new releases this October alone) there will still be much music from the RCA library which will not be available in the reel form unless RCA changes its present thinking. The independent companies such as Livingston, Bel Canto, etc., who are making their music available on cartridges, also sell it in reel-to-reel form.

So it boils down to the fact that if you want certain RCA music you will have no alternative but to buy it in

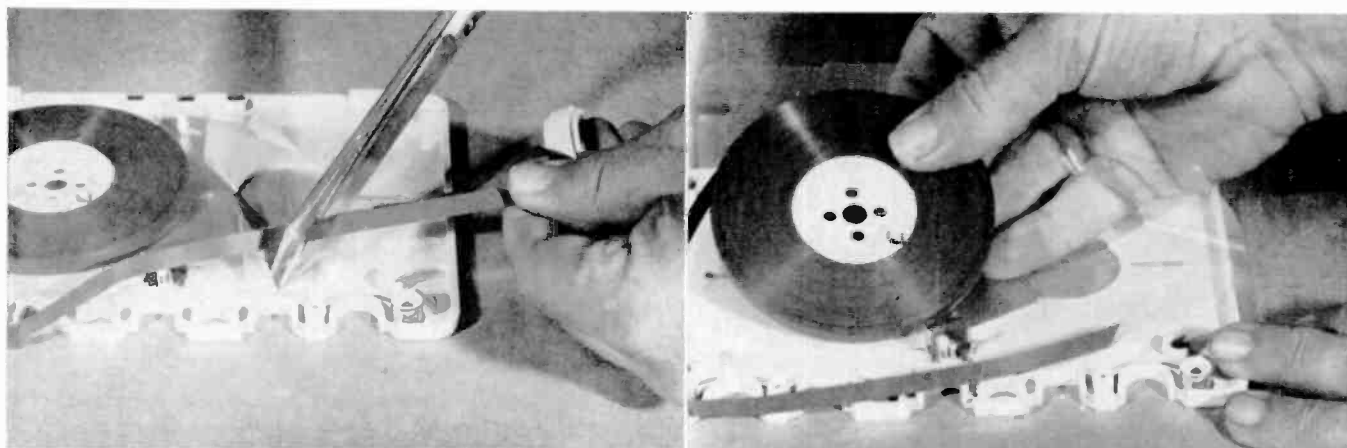
cartridge form and spool it yourself. The RCA cartridges run in price from \$4.95 to \$6.95. The average 30-minute reel of four track $7\frac{1}{2}$ ips is \$7.95 with some as low as \$3.95. A one-hour reel type goes for about \$11.95.

The reel tapes are usually on acetate base whereas all the cartridge tapes are Mylar. As the photographs show, the transfer of a cartridge type tape to a reel is not difficult. Owners of cartridge machines, however, are not going to be able to load reel type tapes in the cartridges because of the difference in the base material. The cartridge mechanism puts more strain on the tape than does the reel type recorder, hence the need for Mylar. While acetate tapes could be put in cartridges, they probably would be more susceptible to breakage which, while not serious, is inconvenient.

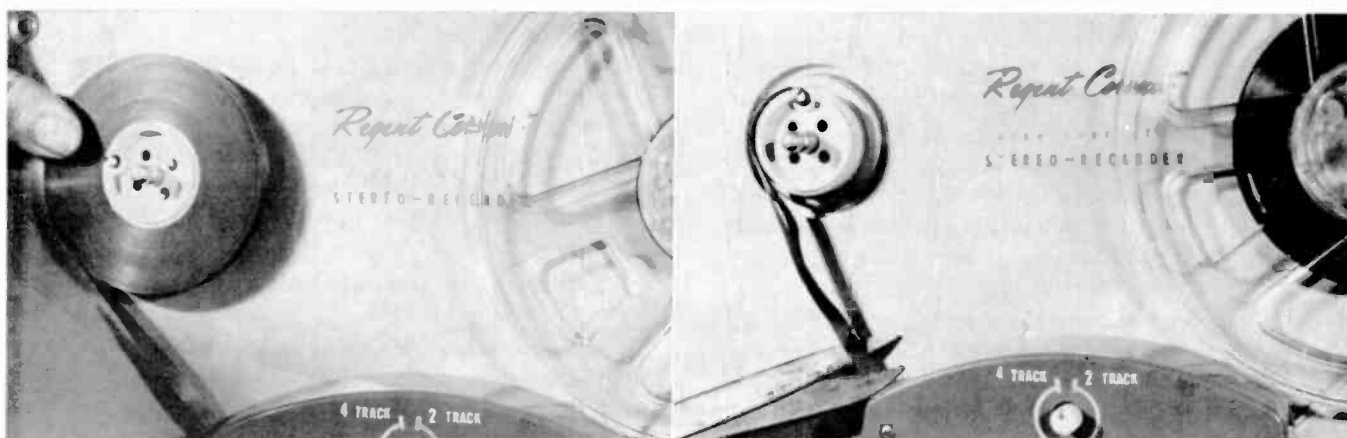
At the moment the question is more or less academic but it may not be so in the future. At the present writing, two companies, RCA and Bell Sound, are making cartridge machines. Seven companies are putting out music in cartridge form: Bel Canto, Liberty, Mercury, Omegatape, RCA, Sonotape and SMS. Of these only RCA is not available in $7\frac{1}{2}$ ips reel form. There are 22 firms issuing $7\frac{1}{2}$ ips four track reel to reel tapes. The number of four track reel is expected to hit 500 by the end of the year. At present there are approximately 360 different ones available. So



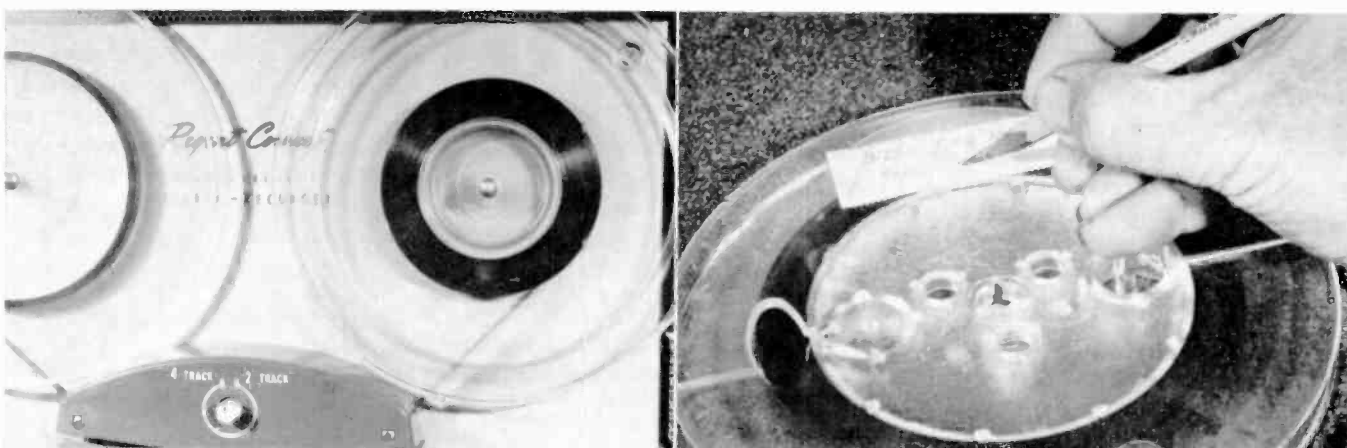
Two self-tapping slot-type screws hold the cartridge closed. These are removed and the case opened like a book. The two parts of the case have a hinge at the back which comes apart so the top may be separated from the bottom. Tape should all be on left hub.



First step is to cut off the loop which holds the tape to the right hand hub. This must be cut with scissors or a razor blade since the tape is mylar and cannot be broken. The tape on its hub is then lifted from the case with the clear sheet under it.



Place the hub on the feed spindle of the recorder and the tape threaded through the head slot on onto a take-up reel. Put a twist in the tape to bring the oxide in contact with the heads. Either play or fast forward the tape on the reel and then cut off the end loop.



The tape may now be rewound in its usual fashion on the reel which will be its permanent storage reel. A large hub reel is best to reduce the possibility of wow or flutter at the slow speed. Be sure to label the reel. Cartridge box label may be pasted on reel box to identify.

far, RCA has issued 32 cartridges with the number of issues per month increasing as the number of machines in use grows.

Putting a cartridge tape on a reel is a simple procedure. After opening the case by removing the two self-tapping screws along the front edge, the loop is clipped off. One note of caution, be sure all the tape is on the supply spool. It will be this way when you buy it.

The tape is lifted out after the loop has been cut by lifting it on the clear sheet of film on which it lays. This whole is then placed on the recorder. An empty reel is placed on the take-up spindle.

Since the cartridge tape is wound with the oxide out, instead of in, as with reels, a twist must be placed in the tape so that the oxide will contact the heads.

The tape is then played onto the reel, or, if you prefer, the machine can be put in fast forward. If you do the latter, watch the process very carefully and hold a finger against the cartridge tape so that it will not throw a loop and tangle.

After winding, rewind on a large hub reel, preferably, and label it. More than one cartridge tape may be placed on a single reel. Then play on any four track machine having the $3\frac{3}{4}$ ips speed.

CONVERTING REVERE RECORDERS TO 4-TRACK STEREO

... . Revere and Wollensak recorders may be quickly converted to four-track operation with the new conversion kits.

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

No soldering is necessary, nor are there any connections to be made in most cases. In some instances the old head is removed and a new one put in place which will require unsoldering the head connections and soldering on new clips, but this is the maximum.

The Nortronics Company has the full line of these kits and has worked with Revere and Wollensak in this development. The various kits are attractively boxed and contain full step by step directions for their installation. We found the directions easy to follow.

The recorder which we converted was a TR-11, the largest of the Revere line. This machine had originally been a monaural model which had been converted to two-track.

The first step in the conversion is to remove the top deck which was accomplished by pulling off the volume control knobs. The volume and tone control knobs are removed by simply prying them up. The rewind lever comes off by removing the small set screw in the rear. The reel spindles are removed by taking the three small screws out and there are five screws between the reel spindles which also must be

removed. Immediately above the input jack and above the "Normal" lamp are two screws which are loosened until the threads no longer engage but they remain in the plastic top housing.

The record key lock must be pried to the left and the top plate may be slipped off.

In the head cup will be found the old head held down by a triangular shaped spring. This spring is removed by taking out the two screws holding it and the heads may then be lifted out of the recorder. The cable connecting them to the jack at the rear of the recorder is also removed. Note the path of this cable for you will have to duplicate it when the new head is installed.

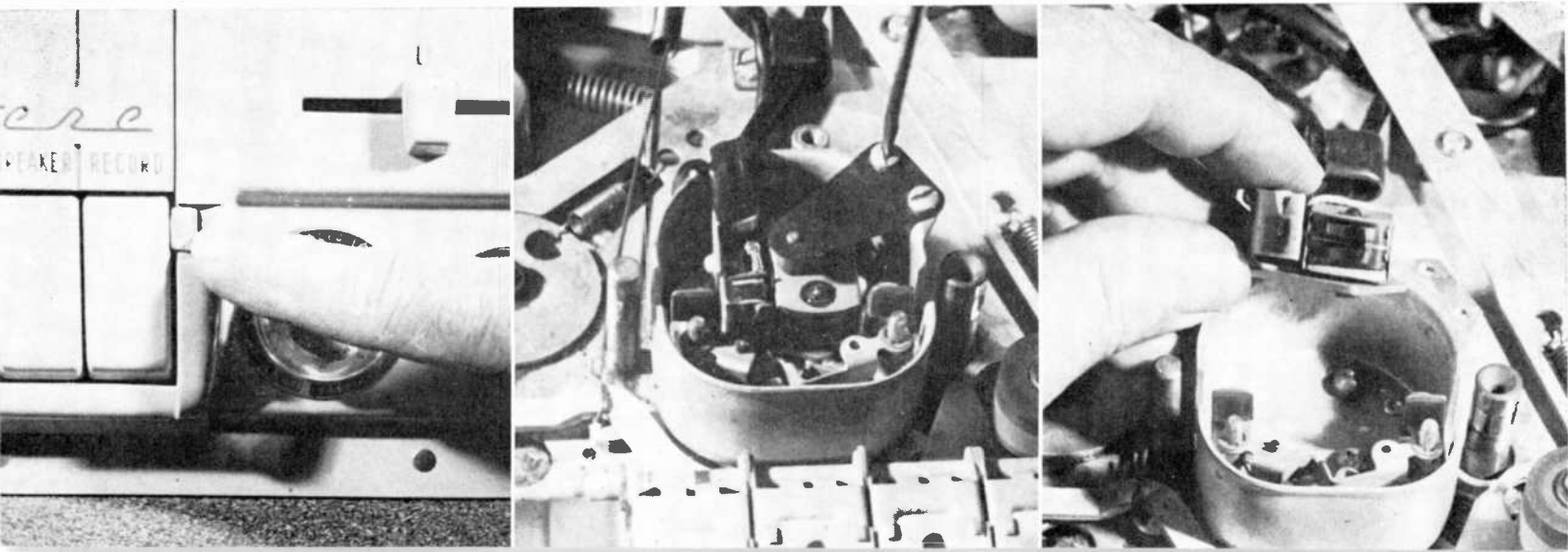
After the old head and cable have been removed, the new head and cable is installed.

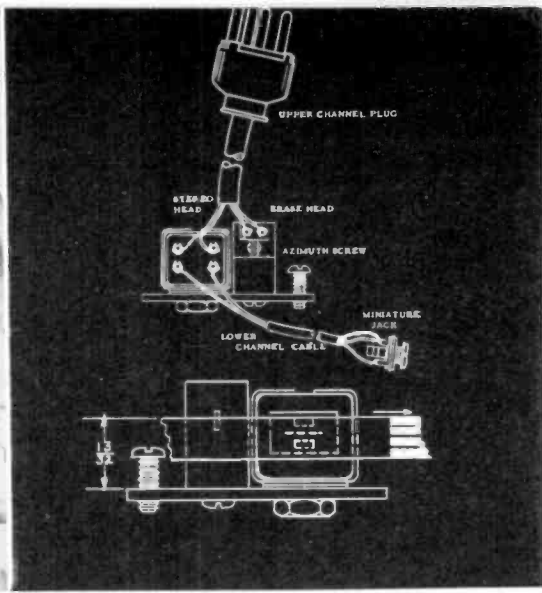
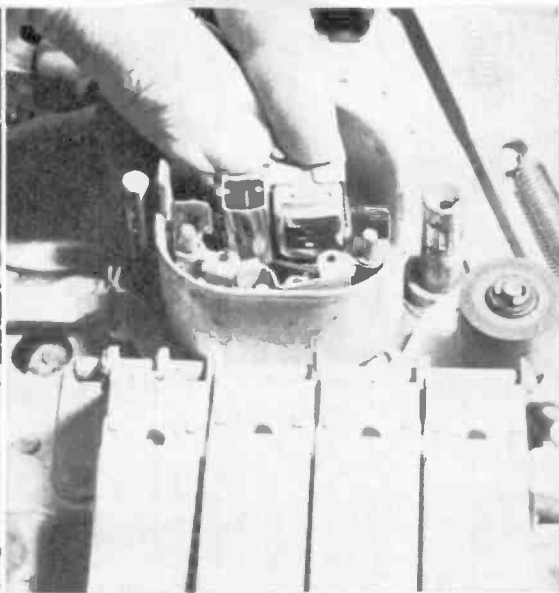
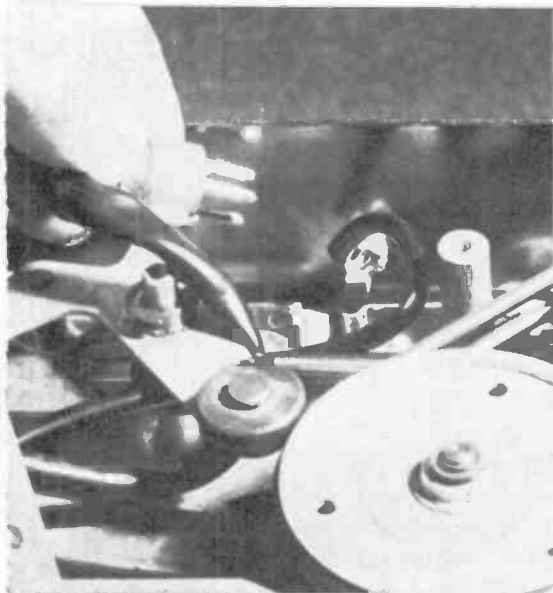
There are two brass pivot studs at the bottom of the head cup which engage holes in the brass alignment plate on which the heads are mounted. Be sure these pivot studs engage the holes. When this has been accomplished replace the head spring placing under it the sponge rubber pad to assure good pressure on the head.

You will find two cables coming from the new head setup. One is attached to a four prong plug which is plugged into the receptacle from which the old plug had been removed. The other terminates in a small jack. Drill a ¼ inch hole in the rear panel of the recorder and mount the jack in it, tightening the nut with a pair of pliers. Be sure to route the new cables to follow the path of the ones you removed.

Before replacing the top cover, mount the reel spindles

Left: after removing the screws in the top plate of the TR-11 the record lever shown must be gently pried to the left in order to let the plate be removed. Center: the holdown spring which holds the head in place is removed by taking out the two screws which hold it. Be careful not to lose any screws in the process. Get a small box and keep it handy for putting the parts in as you remove them. Right: the old head is lifted from the head cup.





Left: once the head is removed, also remove the cable connected to it. Note carefully the path of the cable leading to the plug and jack at the rear of the recorder. Center: install the new heads making sure the holes in the mounting plate engage the pivot pins in the base of the cup. Right: the drawings show the parts of the WR-40 kit and also the positioning of the tape in relation to the head. Since tolerances are close on four-track, the head must be accurately aligned.

again and thread the recorder using a test tape or any musical tape. Alongside the head will be found a small screw, either a regular screw or an Allen head screw. This is turned as the tape plays until maximum high frequency response is had. Once you have reached this point, no further adjustment is necessary.

This simple procedure is all that needs to be done to install heads in the TR-11. Other models are as easy to do.

The reel spindles are taken off once more, after the head adjustment is made, and the top plate replaced being careful to work the plate over the record lock. Reinstall the reel spindles and top plate screws and the job is complete.

We believe that the installation of this head can be accomplished by anyone irrespective of the knowledge the person might have of handling tools, or of electronics.

Nortronics makes three kits for Revere and Wollensak recorders. We used the WR-40 which is for the conversion of monophonic recorders to four-track stereo. The price of the kit is \$32.50. This kit is suitable for installation in Revere Models T-1100, TR-1200, T-900, TR-1000, T-700D, T-700, TR8000, TR-800, T-10, TR-20, T-11 and the T-70,000 series. It is also suitable for Wollensak machines.

The WR-35 kit is for the conversion of 2 track stereo play Revere and Wollensak recorders to 4-track. It contains a new four-track head to replace the two-track unit but does not contain a new erase head and mounting plate. It is less costly than the WR-40 with a net price of \$25.50.

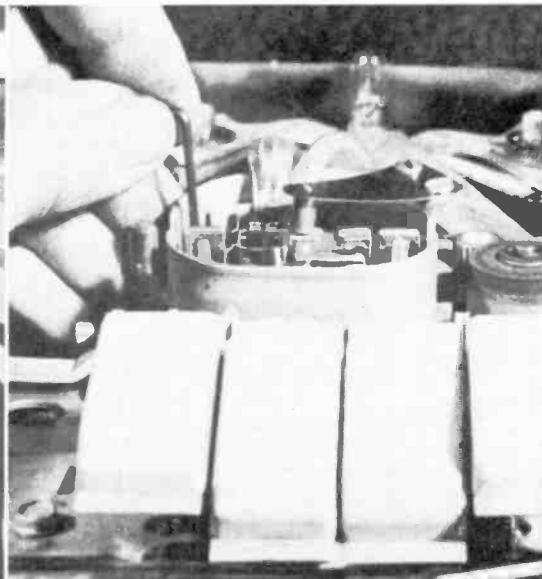
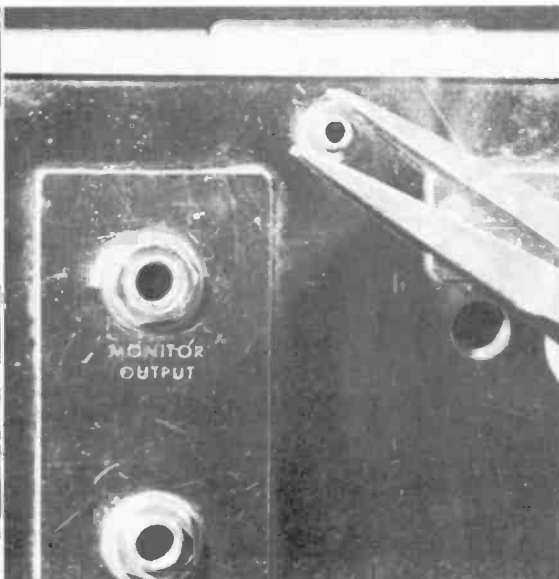
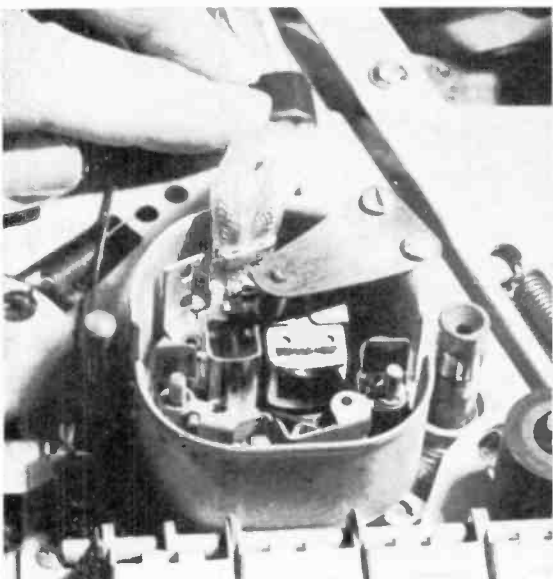
Also coming off the Nortronics line is the new WR-45 kit which will convert most models of Revere and Wollensak recorders to both stereo play and record using an external record/play amplifier made by the Nortronics Co.

This kit will require more extensive hooking up than the example we had covered in this article. For instance, it is necessary that the bias oscillator in the recorder be synchronized with that of the external amplifier which means soldering a capacitor to the plate terminal of the oscillator tube which is then connected to a patch cord and plugged into the synchronizing jack on the external amplifier.

If you would like to convert your Revere or Wollensak to four-track but fear to tackle the job yourself, it can be accomplished by any serviceman for small cost.

The kits will be available through dealers who can obtain one for you. Conversion to four-track will quickly return the investment due to the lower price of four-track tapes.

Left: thread the new cables back through the recorder following the path of the old one which has been removed. Center: the output jack for the second channel is installed at the rear of the recorder in a 1/4 inch hole drilled to take it. Tighten the nut on the outside with a pair of pliers. Right: thread the recorder after putting on the reel spindles and adjust the heads for maximum high-frequency response by using a test tape or a musical tape. Reinstall covers and the job is complete.



THE TAPE BROKE

By Mark Mooney

. . . time to push the panic button? Not at all—just get the splicing tape and make it good as new.

ONE of the nicest things about tape is the fact that once it breaks it can be so easily repaired. Today's tapes are not prone to break but once in a while it does happen.

Of course, if you are editing a tape, then you must deliberately break it and put it together again.

Methods of splicing vary and the machines used vary likewise, from a plain razor blade or pair of scissors to machines that do the whole job. The latter are widely used in professional editing circles.

The simplest method of all is shown in the photos on the adjoining page in relation to a broken cartridge tape. This is not likely to take place, since the tapes are of Mylar, but the question most people ask when they see the cartridge is "What do I do if the tape breaks?"

The answer is—splice it, just like any other tape.

Here we will employ the scissors method. Enough tape is withdrawn from the cartridge to enable you to work comfortably. Be sure there are no twists in it. The broken ends may be matched and a piece of splicing tape applied or they may be overlapped slightly, aligned and cut through together with a pair of scissors. The cut ends are then butted together and the splicing tape applied to the back of the tape.

There are two points of caution in this method. First, be sure the scissors are not magnetized since they could erase a bit of the sound from either edge of the splice.

Second, use splicing tape, not cellophane tape. Cellophane tape has a soft adhesive on it which eventually will ooze out the edges of the splice and get on heads and tape guides. It also may cause one layer to stick to another in the vicinity of the splice. Splicing tape has a hard adhesive which stays put and gives no trouble.

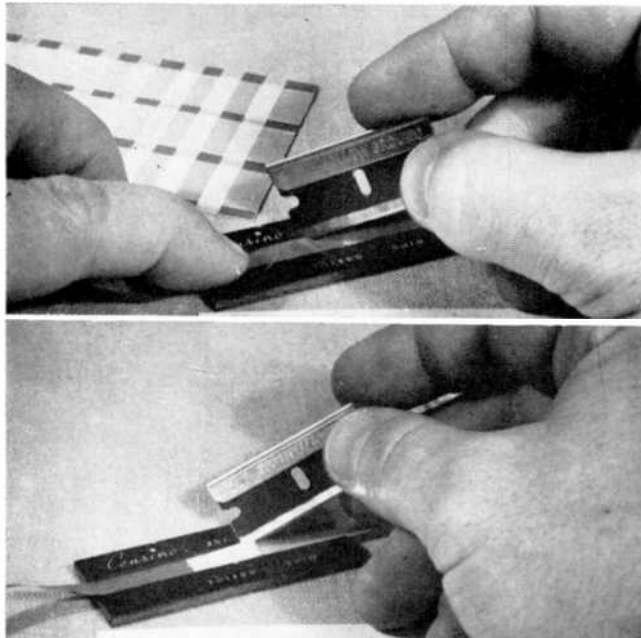
The only difficulty with the razor blade or scissors method is that you wind up wishing you had three hands because you must both hold two tape ends and cut at the same time.

Next step above this rather primitive method is the use of a simple guide such as the Cousino splicer. This is merely a groove cut in a piece of plastic that will hold the tape in place. A cut in the plastic guides the razor blade so that an accurate cut is made and the splicing tape provided with the splicer is lifted off the card and applied to the tape with a corner of the razor blade.

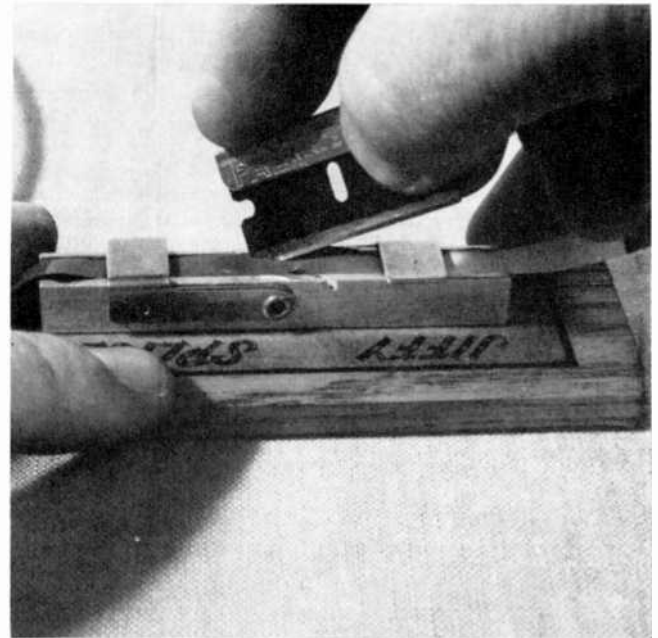
Similar but having tape clamps are a number of splicing blocks such as the Jiffy, Bibb, Editall and Magnaccessories. Like the foregoing, they hold the tape in place and permit you to use both hands.

A cut above the splicing blocks is the Gibson Girl splicer. This is so-called because its blade trims the splice in an hour-glass shape.

The Gibson Girl has hold-down clamps for the tape and also has a diagonal cutting blade which is brought down and cuts through both pieces of tape at once, insuring splice



The Cousino splicer is simply a plastic block with a groove to hold the tape and a slot to guide the razor blade. A short piece of splicing tape is lifted with a corner of the razor blade and applied to the spot to be spliced and rubbed down tight.



Typical of a number of splicing blocks is this Jiffy. It is a grooved aluminum bar in which the tape is placed and held down by the arms while the splice is made. Some of these small splicers may be mounted directly on the recorder for convenient use in editing.

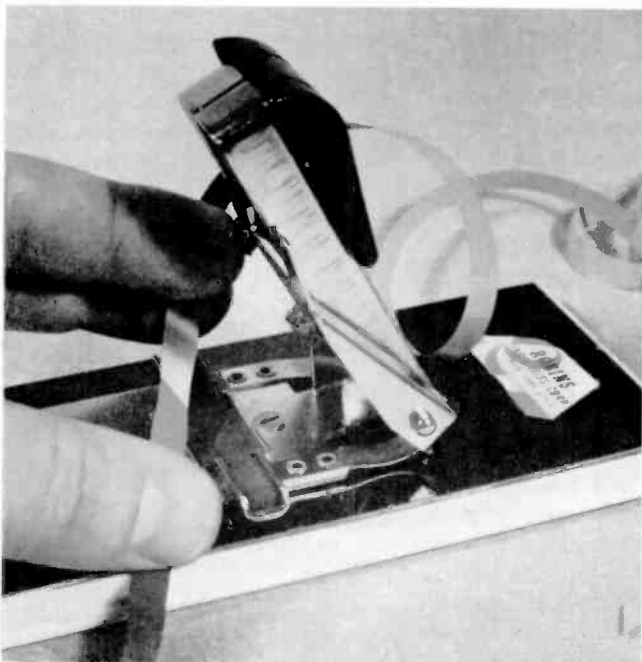
alignment, and a trimming blade, which cuts off all excess splicing tape.

Some professionals who do a lot of editing swear by a plain splicing block. Others use units which will do the whole job of cutting, applying the splicing tape and trimming the splice with a few pushes on the handle.

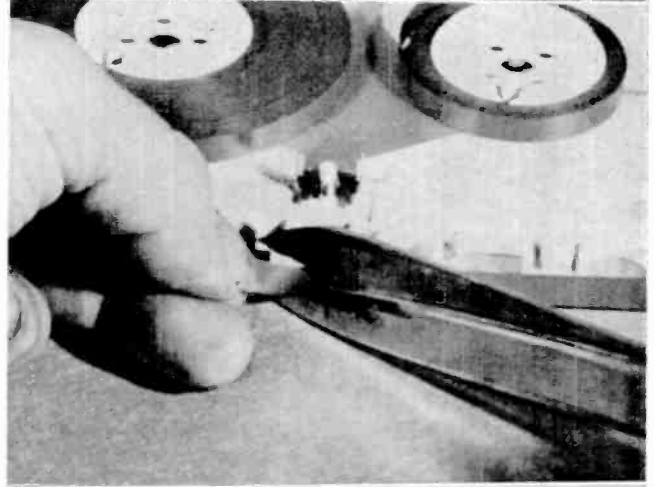
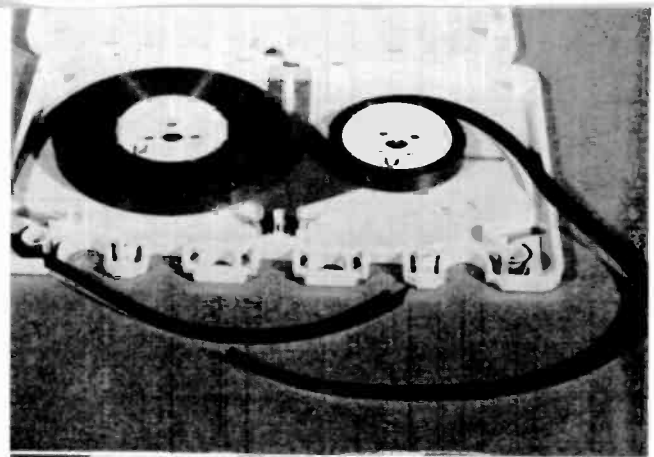
One splicer, the Presto-seal, uses heat to bind the tape edges together.

Your purchase of a splicer will depend upon how much splicing you plan to do. But whatever kind you use, there are certain essentials in splicing: 1—The splicing tape must be applied on the side away from the heads. This is always the shiny side of the tape. 2—When the splice is completed, the tape should lie in a straight line. Any skew may cause it to ride up tape guides or heads and give trouble. 3—Joints should be butt joints with the tape cut at an angle so there will be no clicks or pops as it passes the head. 4—The splice should be no wider than the tape, preferably a hair thinner. By trimming slightly into the splice after the tape is applied, all rough edges or overhanging bits of splicing tape will be removed. 5—Only splicing tape or heat splicing should be used. An emergency repair can be made with other materials but the splice should be redone as soon as possible.

Putting the tape back together again after it has been broken is a simple operation. If the few points mentioned in this article are kept in mind when the splices are made you will come out with a whole tape that will sound as though it had never broken at all (unless you had cut out quite a piece). Splicing is also useful for removing commercials, etc., from tapes recorded from the radio or TV. Remember, however, if you cut a section from a dual track tape, you will also cut out a section of the other track. A broken tape, unlike a broken record, is nothing to be feared. It can be easily and quickly repaired and made as good as new.



The Gibson Girl splicer gets its name from the shape of the finished splice. In addition to the channel to hold the tape, two blades are incorporated in the handle. One makes the diagonal cut through both ends of tape and the other trims the splice after the tape is applied.



Should a break occur in a tape cartridge, pull out enough tape to provide working room. Overlap ends and cut through both at an angle with scissors. Apply splicing tape to shiny side of tape and then replace tape in the guides. Tighten by turning take-up hub and replace cover.

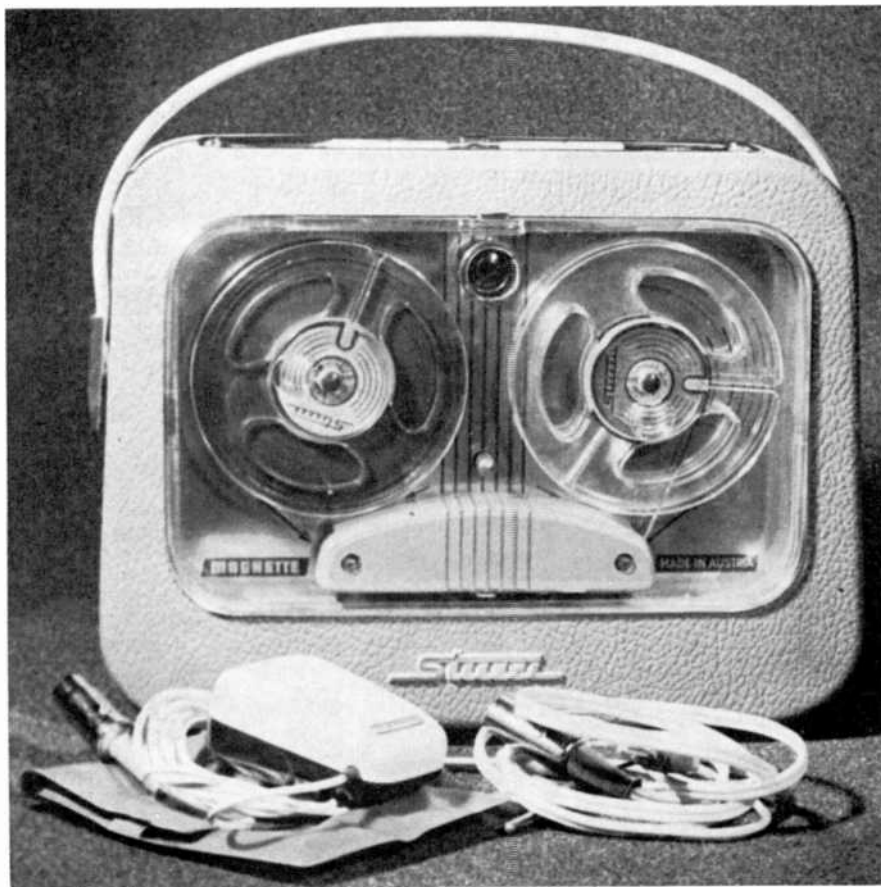
NEW PRODUCT REPORT

STA **F**OKSTED

Product: Stuzzi "Magnette"

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STUZZI MAGNETTE

. . . . completely self contained battery-driven portable weighs only 8 pounds.

THE Stuzzi Magnette is small, measuring only 11 inches long x 8 inches high by 4 inches thick. It is well built and it is light weighing only 8 pounds including the batteries. It is a dual track two speed machine having speeds of 3-3/4 ips and 1-7/8 ips, the latter for speech, conference recording, etc.

The covering of the machine is green and cream leatherette which is washable and the face plate is of brass with brown trim. The unit is attractive in appearance.

The reels are visible through a plexiglass plate on the face of the unit. This plate has a finger hole near the top for easy removal for tape changing.

The reels are 4" in diameter and are held on by plastic disc nuts. Between the reels at the top of the face of the machine is the battery indicator.

When the machine is running, wedges of white will show if the batteries are in working order. If it begins to flicker there is about 15 minutes of operational life left in them. If it shows no white the batteries are not good enough to maintain the tape speed and must be replaced.

In addition to the usual function of recording with the microphone, a patch cord is included to enable recordings to be made from a radio or phonograph. The Magnette also has provisions for being used as a P. A. system or another sound source may be played through its amplifier and loudspeaker.

Tape threading is straight line through a wide slot at the base of the head casing. In addition to running in play or record, the unit has power fast-rewind and fast-forward. If only a short length of tape is to be re-

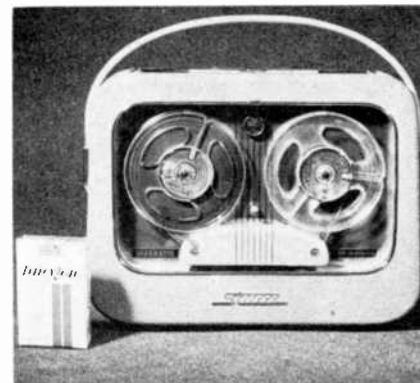
wound or run forward the tape may be left in the slot. If a whole reel needs rewinding, then it is best to remove the tape from the slot and let it run directly from one reel to the other. A pin between the two reels will assure the tape running true. This reduces battery drain.

At the 3-3/4 ips speed, using long play tape, the playing time is 23 minutes on each track. If double play tape is used the time is increased to 30 minutes per track or one hour per reel. At the 1-7/8 ips speed these times are doubled. Reel change is easy since the plastic nuts spin on and off readily.

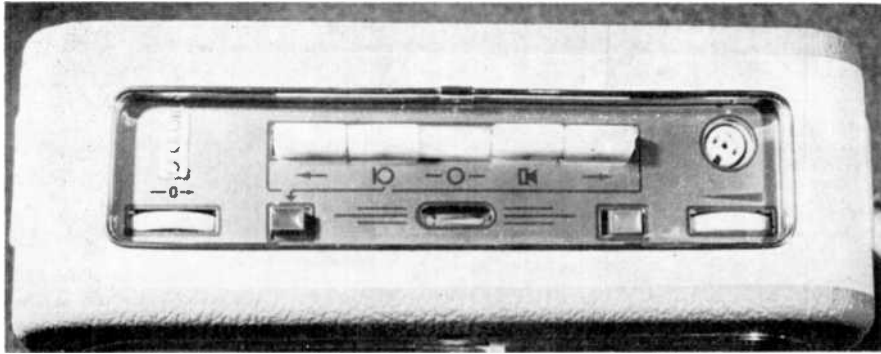
Recording level is by means of an extinction type magic eye. When the recorder is on, the magic eye looks like an exclamation point and is fully illuminated. As the volume is turned up and the signal comes in the eye will begin to flicker and the long part grows shorter. The volume should be adjusted so that on the peaks, the eye does not shorten more than half its length.

The controls are grouped on the top of the recorder and are all push-button operated. They include fast-forward, fast-rewind, play, record and stop. In addition there is a green button which is the record safety interlock and a red button which actuates the tape transport once the mode of operation has been selected.

To record, the record button is



The Stuzzi Magnette is small, light and thoroughly portable. Here it is shown in comparison with a package of king size cigarettes.



Looking down on the top of the recorder: from left to right, odometer index counter, rewind, record, stop, play and fast-forward buttons, microphone input, volume control and, at left square safety interlock and at right, tape motion button.

pushed down after the green button has been slid toward the front of the machine. The magic eye will light up and you may adjust the volume control. You will not have tape motion until the red button is moved to the left. This is a handy feature for you can be sure the volume is correct before running tape.

For playback, the play button is depressed and the red button moved to the left to start the tape moving.

To actuate either fast-forward or rewind it is necessary to press down the selected button and, while holding it down, to depress the stop button. This will latch the other button down and the tape will move as desired. To stop the motion, the stop button is further depressed which will release the fast-forward or rewind button and stop the tape. If the stop button is not depressed firmly, the tape may be thrown from the feed reel. We caused this to happen several times but in no instance did the tape tangle and the slack was taken up when the machine was put in play or record.

The speed change is effected by opening the back of the case, using the latch provided for the purpose. The speed setting is to the left and slightly

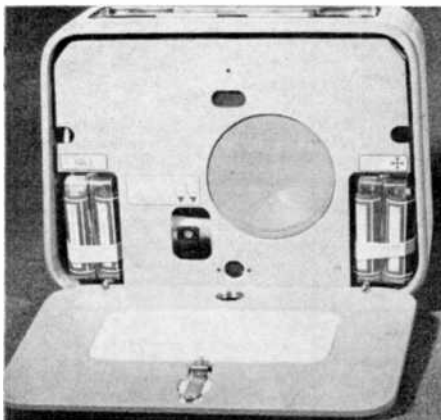
below the speaker opening. This is the only tricky item on the entire machine. There is a knack which must be acquired to move this control and it never, never should be forced. It should be pulled toward you gently and then slid in the desired direction. If a change is being made from 1-7/8 to 3-3/4 speed, the knob should be gently pulled toward you and tilted to the left while being moved to the right. We recommend a bit of practice on this item.

The batteries are standard 4 1/2 volt types and there are two sets of them, one for the amplifier and one for the motors. Life expectancy is from 30 to 100 hours depending upon the type of use.

There are two motors, the capstan motor has automatic speed control and drives a heavy flywheel. The winding motor is a high efficiency miniature type.

Frequency response checked out as claimed 8000 cps at 3-3/4 4,000 at 1-7/8.

In our opinion this is a practical, well-built, easily operated and convenient recorder suitable for any purpose where a completely self-contained portable is indicated.



Back of case opened to show placement of batteries and speed shifting control. Batteries are standard 4 1/2 volt and fit in plastic holders which slide in the wells provided as shown. Back of recorder swings out to give access to batteries and speed shift.

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

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Publisher: Mark Mooney, Jr.,	Severna Park, Md.
Editor: Mark Mooney, Jr.,	Severna Park, Md.
Managing editor: None	
Business manager: None	

2. The owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual member, must be given.)

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None	

4. Paragraphs 2 and 3 include, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner.

5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was: (This information is required from daily weekly, semiweekly, and triweekly newspapers only.)

MARK MOONEY, JR.
 (Signature)

Sworn to and subscribed before me this 11th day of September, 1959.

JEAN MARIE COVER
 Notary Public

(My commission expires May 1, 1961)

SHOP OR SWAP

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

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

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

RECORD CUTTING for every occasion from your tape to unbreakable disc—weddings, socials, lectures, schools. Free information. Alberg Recording Studio, 121-18 Rockaway Blvd., South Ozone Park 20, N. Y.

TRADES WANTED: Tapes of extensive recorded jazz collection for TV, radio, and recorded spoken literature, drama, etc. Lloyd Lacy 832 El Camino, Sante Fe, New Mexico.

LEARN HYPNOTISM, SELF-HYPNOSIS from recorded tapes! Other helpful Tapes, Books, Recordings! Free Catalog. Write Philanthropic Library, Drawer TR697, Ruidoso, New Mexico.

TAPE RECORDERS, RECORDING TAPE, Bell tape decks, Hi-Fi, Norelco speakers, We will not be understud! Send for our free catalog and see why. Commissioned Electronics, 1776 Columbia Road, Washington, D. C.

PROFESSIONAL VOICES to make your recordings. Experienced personnel available to record messages, original scripts, etc. Fast, high tape-quality service: Low rates. Write for information Sabin Recordings, Box 395, Hurley, 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.

FOR SALE: Shure M-16 Studio Dynetic Integrated Cartridge-Arm Assembly, original factory carton, \$65; Heathkit BC-1A tuner, wired, \$20; Heathkit FM-3A tuner, wired \$20; all units in top condition and performance. Write J. Borrevik 400 Memorial Drive, Cambridge, Massachusetts.

RENT STEREO TAPES—over 800 different—all major labels—free catalog. Stereo-Parti, 1608-F Centinela Ave., Inglewood 3, California.

NEW REK O KUT Master Pro M-5 cutter and V recording turntable, cost \$530—take \$400. Also G16" playback turntable \$130. Devlin, Box 211, Olive, Calif.

DON'T BUY stereo equipment until you check our prices. Bayla Co., 1-470-T Elmer Road, Waukegan, Ill.

SELL—Heath: FM-3A, \$18.00; WA-P2, \$12.00; Rek-O-Kut: L-3-4, \$45.00. Dyanmu: 8017A Erase Heads, 2 for \$10.00. Dynakit: Mark II Modified, \$55.00. R.D.D., 1308 Hampshire Lane, Richardson, Texas.

EDUCATIONAL TAPES—Professionally produced programs dealing with literature, history, science and foreign language. Such programs as "Tale of Two Cities," "Macbeth," "The Hydrogen Bomb" and "Franklin D. Roosevelt" are available. Prices start at \$.50. Write for listing to: Donald R. Honz, 1124 (B) Belknap Street, Superior, Wisconsin.

PROFESSIONAL RECORDING TAPE — First quality of a prime manufacturer. Full frequency response. Finest polished and lubricated tape available. Money back guarantee. Acetate 1200", 1 1/2 mil, 4/\$5.20; 1800", 1 mil, 4/\$6.75. Mylar 1200", 1 1/2 mil, 4/\$7.00; 1800", 1 mil, 4/\$9.00; 2400", 1/2 mil, 4/\$13.00. Postage 15¢ per reel. Hi-Sonic, Box 86MM, New York 63, N. Y.

WORLD WAR II AERIAL battle and other taped productions. Complete sound effects service. Free literature. Delco Productions, Box 140, Grand Island, Nebraska.

SELL: Magnacordete Stereo Record and Playback with two preamplifiers and carrying case, like new—\$310. R.R.L., 1219 Yardley Road, Morrisville, Pa.

PROFESSIONAL QUALITY RECORDING TAPE. Frequency response 20-20,000 cycles. 1200"—\$2.25; 1800"—\$3.25. No C.O.D. P.Q.R.T. Box 445, Bloomfield, N. J.

MINIFON POCKET RECORDER and accessories including microphones, mains transformer, carrying case, etc. Total value new \$470. Little used, inspection welcome. \$200 or best offer. V. Webster, 150 West 73rd Street, New York 23.

WANTED: FRIENDLY TAPESPONDENTS. Anyone, general interest, buzz a tape. William C. Graves, 5-43 Roseland Parkway, New Orleans 23, Louisiana.

SELL: Four E.V. 666 microphones \$100 each; Berlant, two multichannel mixers #315; 8—50 ohm inputs, 2—600 ohm outputs, with portable case. Cost \$600, best offer. Perfect condition all equipment. J. Landin, 4315 Collins Ct., Mt. View, Calif.

FOR SALE: Berlant Broadcast recorder. Single track, 7 1/2" and 15" speeds. Excellent condition. \$225. Jackson E. Heffner, Asheville School, Asheville, North Carolina.

RECORDING CUTTING SERVICE: Tape to disc. All sizes & speeds. Highest quality. Low cost. Quantity discounts. Write for literature and prices. Electronic Associates, Box 91, Merion Station, Pa.

WANTED—Ampro Tape Recorder, Celebrity or Hi-Fi Model. Good condition. Charles H. Leach, 502 West Market St., Jeffersonville, Indiana.

AMPEX 601 with 620 amplifier-speaker. Both in portable cases. Perfect condition. \$764 value for \$550. Crown Prince 3 speeds, all size reels. Records and plays back halftrack monaural. Also plays 2 track stereo. Perfect. Portable case. \$400. Norman Forgue, 510 N. Dearborn St., Chicago 10, Ill.

SWAP: Ciroflex camera, accessories, developing kit, for Permaflux Binaural Headphones, Arthur Lacativa, 2317 Gunther Ave., Bronx 69, New York.

WANTED: A used Imperial Rek-O-Kut disc-recorder, must be in good working order. Write to Michael Levin, 184 Cedar Ave., Highland Park, Ill.

FOR SALE: PT6-BN Magnecord half-track stereo record or playback (staggered heads for highest fidelity) built for radio station broadcast. Sold for \$950 new. Also have \$250 worth of accessories including unused recording heads and extension arms for 10" reels. Will sell the \$1200 value for \$550 or best offer. Write J. Heise, 322 S. Hanley Road, Clayton 5, Missouri.

4 TRACK UNITED STEREO tapes, \$3.95 up. Bob's Tape Service, Box 13325, Ft. Worth 18, Texas.

CANADIANS—Records cut from your tapes. For prices and information, write, Fidelity Recording, 195 Yenge St., Toronto 1, Ontario.

STEAL THIS FENTONE DECK, Brennel Mark IV and preamp Pro II for \$132.00. Good condition. I am buying professional equipment. Ronald Stier, Major Seminary, Sr. Meinrad, Ind.

MAIL ORDER HI-FI
 You can now purchase all your Hi-Fi from one reliable source and be assured of perfect delivery. Carston makes delivery from NY stock on most Hi-Fi, Recorders and Tape within 24 hours. SEND US A LIST OF YOUR HI-FI REQUIREMENTS FOR OUR WHOLESALE QUOTATION and our FREE wholesale catalogue.
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**Plays Both 2- &
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OR MONOPHONIC

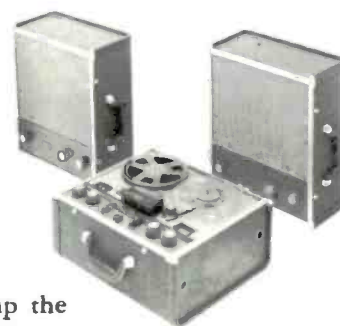
Stereo Portable PLUS!

Guiding the Ampex engineers who created the 960 was a dual objective—that of building a machine which was not only a superb example of engineering skill, but one which would also offer its user a range of capabilities far exceeding that of any other recorder made today. The result was not merely an improved stereo recorder, but *an entirely new concept* in home entertainment.

The STEREO 960 fits into family life in literally dozens of ways, contributing many tangible benefits in musical, educational and recreational fun. You'll use it to keep up the family correspondence by sending "letters in sound", to tape stereo programs off the air, to preserve your best monaural and stereo discs on tape, and to acquire new musical and language skills. You'll have endless fun exploring the 960's many fascinating recording capabilities, including sound-on-sound, echo chamber effects, and other advanced techniques.

ABOVE--960 PORTABLE STEREO
RECORDER/REPRODUCER

BELOW--MODEL 2560 PORTABLE
STEREO SYSTEM CONSISTING OF
960 AND PAIR OF 2010
AMPLIFIER-SPEAKERS



AMPEX STEREO

SIGNATURE OF PERFECTION IN SOUND

RECORDER/REPRODUCER SPECIFICATIONS

The true values of a recorder are best assessed through careful evaluation of its performance specifications and operating features. It is worthwhile noting here that these specifications are based not on theoretical design parameters but on actual performance tests. They are specifications which the recorder not only meets or exceeds today, but which years from now will still hold true. The Ampex Model 960 Stereophonic Recorder/Reproducer is capable of essentially distortionless frequency response from 30 to 20,000 cycles per second at the operating speed of 7 1/2 inches per second, and from 30 to 15,000 cycles per second at 3 3/4 inches per second. Its precision-engineered timing accuracy is such that it offers perfection of pitch held to tolerances of less than one-third of a half-tone. Playing times, using standard (.002"), long play (.0015"), and extra-long play (.001") tapes are as follows:

	(a) 4-Track Stereo Tapes	(b) 2-Track Stereo Tapes	(c) Monaural Tapes, half-track
1200 foot reel	3 3/4 ips - 2 hrs. 8 min. 7 1/2 ips - 1 hr 4 min.	3 3/4 ips - 1 hr. 4 min. 7 1/2 ips - 32 minutes	3 3/4 ips - 2 hrs. 8 min. 7 1/2 ips - 1 hr 4 min.
1800 foot reel	3 3/4 ips - 3 hrs. 12 min. 7 1/2 ips - 1 hr 36 min.	3 3/4 ips - 1 hr. 36 min. 7 1/2 ips - 48 minutes	3 3/4 ips - 3 hrs. 12 min. 7 1/2 ips - 1 hr 36 min.
2400 foot reel	3 3/4 ips - 4 hrs. 16 min. 7 1/2 ips - 2 hrs. 8 min.	3 3/4 ips - 2 hrs. 8 min. 7 1/2 ips - 1 hr. 4 min.	3 3/4 ips - 4 hrs. 16 min. 7 1/2 ips - 2 hrs. 8 min.

RECORD INPUTS: High impedance line inputs (radio/TV/phono/auxiliary) 0.3V rms for program level; high impedance microphone inputs

PLAYBACK OUTPUTS: Approximately 0.5V rms from cathode follower when playing program level tapes

PLAYBACK FREQUENCY RESPONSE: 30-20,000 cps at 7 1/2 ips; 30-15,000 cps at 3 3/4 ips
Within ±2 db 50-15,000 cps at 7 1/2 ips, 55 db dynamic range
Within ±2 db 50-10,000 cps at 3 3/4 ips, 50 db dynamic range

FLUTTER AND WOW: Under 0.2% rms at 7 1/2 ips; under 0.25% rms at 3 3/4 ips

HEADS: Manufactured to the same standards of precision that exist in Ampex broadcast and recording studio equipment. Surfaces are lapped to an optical flatness so precise that they reflect specified wavelengths of light, resulting in uniform performance characteristics and greatly minimizing the effects of head wear. Azimuth alignment of stereo head gaps in the same stack is held within 20 seconds of arc, equivalent to less than 10 millionths of an inch—a degree of precision achieved through use of a unique process involving micro-accurate optical measurements within a controlled environment. Head gap width is 90 millionths of an inch ±5 millionths of an inch.

KEY TO THE EXCITING FUN FEATURES OF THE 960 --

THE AMPEX STEREO-GRAPH

Here's the simplest, quickest answer to almost every question about how to perform the operations illustrated at right and numerous other recording functions. The Ampex Stereo-Graph shows you, quickly and clearly, the proper dial settings to make for more than a dozen of the most popular uses for the 960 . . . including sound-on-sound, language and music instruction,



and other special effects. A convenient tape footage/playing time indicator is included on the reverse side.

MODEL 2010 MATCHING AMPLIFIER-SPEAKER

The Ampex Model 2010's ten-watt (20 watts peak) amplifier section provides operating characteristics (unequalized) flat within ±0.1 db, with total harmonic distortion less than 0.5 of 1%, throughout the maximum range of human hearing ability, at rated output. Noise and hum are 80 db below rated output, and input sensitivity is 0.18V to develop rated power.

The specially designed 8" speaker provides smooth, peak-free response throughout a remarkably wide audio range. Such superior design features as its massive die-cast frame and edgewise-wound ribbon coil contribute effectively to higher levels of performance than ever before achieved with a speaker this size.



MODEL 960 DIMENSIONS: Portable cases 9" x 15" x 17 1/2". Unmounted recorder 13" x 15" x 6 1/8" depth below top plate, 1 3/8" above. Recorder weight 36 lbs., speaker amplifier 31 lbs.

AMPEX AUDIO, INC. • SUNNYVALE, CALIFORNIA 8004



Relax and enjoy the show—let your Ampex do the narration! With the commentary on tape, your color slide shows are more professional, more complete, and more fun!

Your favorite LP's and Stereo Discs are at their exciting best while they're new and unscratched. That's when to tape them on your Ampex, and preserve their original quality for keeps!



When you tape it "off the air" your only cost is for blank tape. Yet your musical repertoire can soon equal that of all the stations you hear!

There's a real future in family fun like this—with your Ampex you can live such happy moments over and over again, with a quality so lifelike you're almost literally carried back.



In the Ampex "Speech Testing Game", you pit your wits against the trigger-quick memory of the Ampex recorder/reproducer. You can't win, but it's fun trying.

Letter-writing is no longer a problem, with an Ampex in the house . . . now it's a family project. And even more fun than sending letters in sound is receiving them!



For "letters in sound", the 3" tape reel holds as much as a 10-page letter, mails first class anywhere in the United States for 8c.

A command performance, exclusively for you! Whether you prefer jazz, pops, or classical, the privacy of headphone listening is a unique pleasure. You don't disturb the rest of the family, and they don't disturb you!



The Ampex, in private rehearsal, can be a wonderful confidence-builder for people who normally develop rubber knees when faced with the prospect of speaking before a group.

Learning to speak a new language is made immeasurably easier on the Ampex; you can record your own phrases side-by-side with those of the instructor, and play them back for comparison at any time.





Merry Christmas

From Livingston

Your GIFT Christmas tape is waiting for you at your local dealer. Stop in to see and hear the all-new Livingston line (2 and 4 track) and accept a FREE tape with the purchase of two or more stereo reels from the outstanding Livingston stereo tape catalog.

With the advent of four-track stereo tape, Livingston again is proud to present Lenny Herman . . . the "King of Stereo," with an exciting release of hit show tunes—superb Strauss by the Graz Philharmonic — Enchantment Italy by night clubber Aldo Bruschi. And a thunderous performance of Tchaikowsky's Immortal Fourth Symphony. All these and more await you on Livingston Living-Sound Tapes.

FREE CHRISTMAS TAPE

4 CR-1108

Fifteen selections including: Jingle Bells, Winter Wonderland, Rudolph the Red-Nosed Reindeer, White Christmas, O Little Town of Bethlehem, Silent Night, O Come All Ye Faithful

New price list:

LIVINGSTON 2-TRACK

2-track . . . K Series—\$11.95, up to 45 minutes full length

2-track . . . S Series—\$ 9.95, 30 minutes full length

2-track . . . C Series—\$ 5.95, 15 minutes
CX Series, \$ 5.95, 30 minutes

LIVINGSTON 4-TRACK

4-track, Classical, 7½ ips, \$8.95, 50 minutes full length

4-track, Popular 7½ ips, \$7.95, 40 minutes full length

4-track, Demo Tapes, 7½ ips, \$4.95, 30 minutes

Write for catalog information and the name and address of your nearest Livingston dealer.

SMS, National Sales Agency for Livingston Audio Products Corporation,

147 Roseland Avenue, Caldwell, N. J.

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