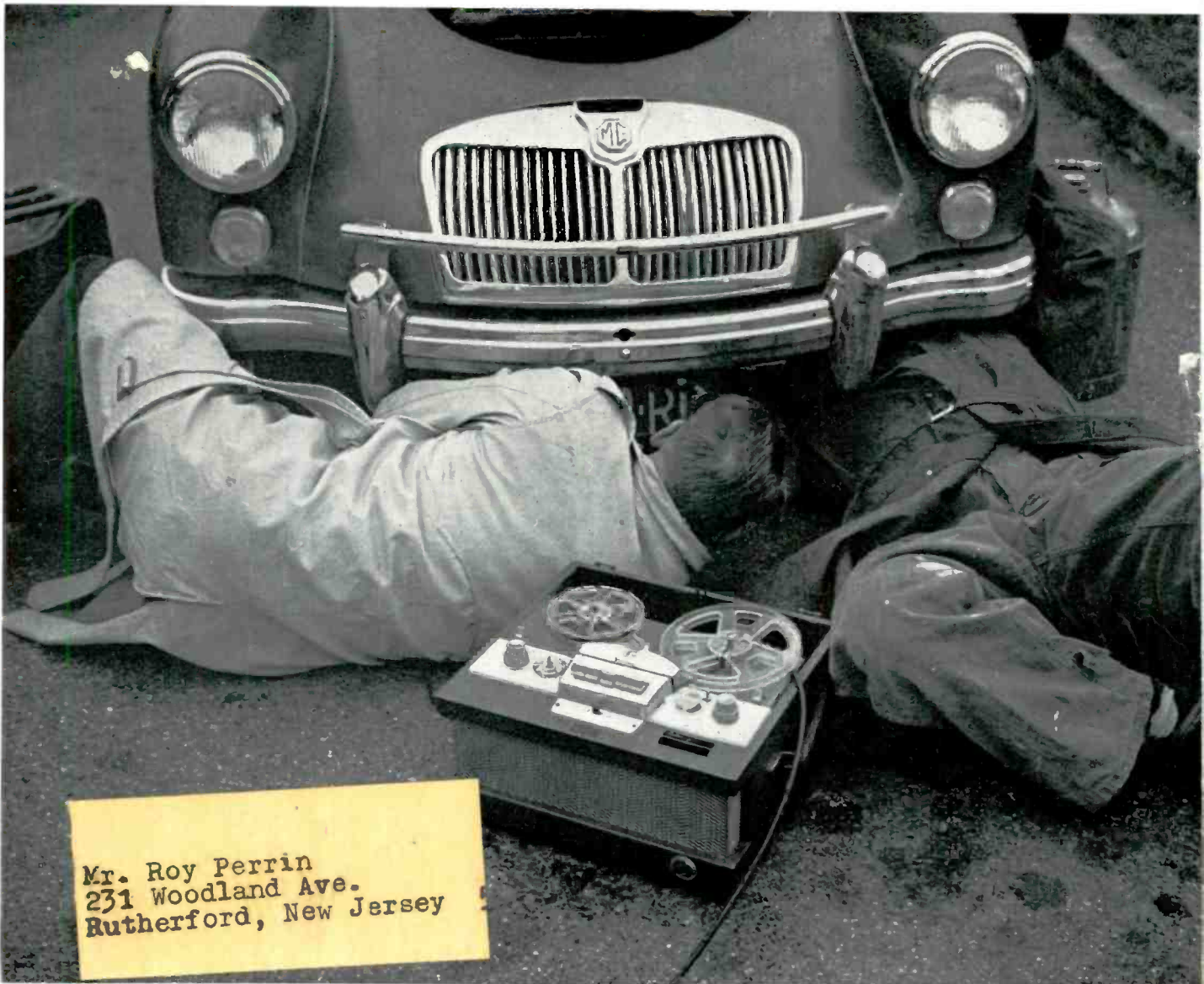


TAPE RECORDING



On-The-Spot Interview—See page 18



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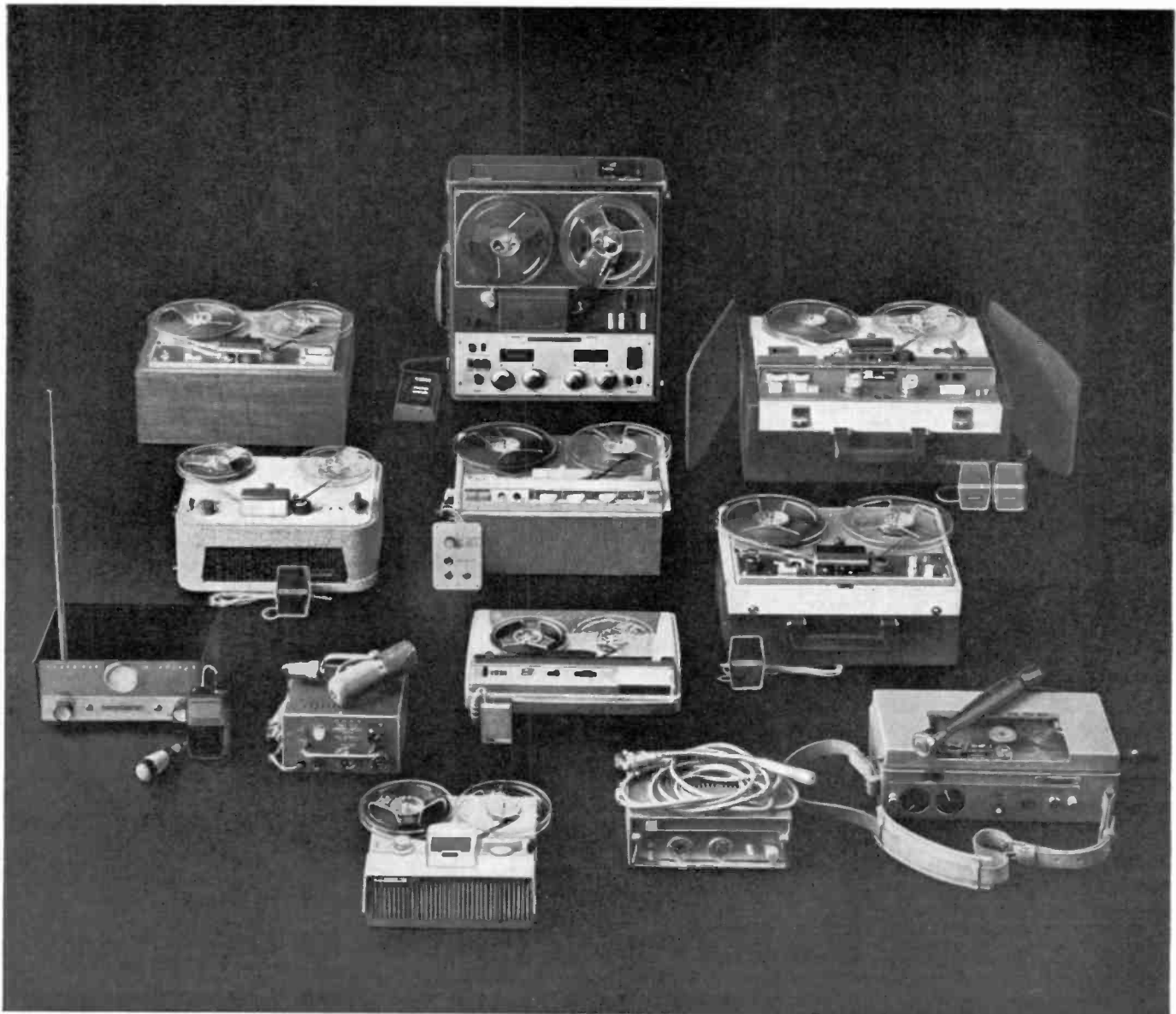
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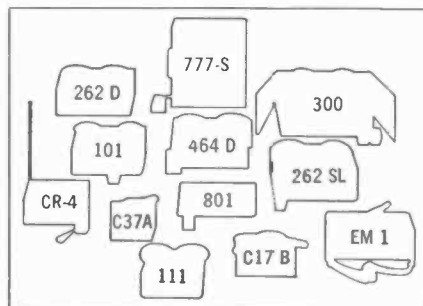
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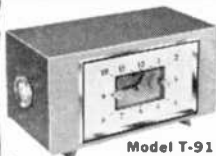
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TAPE RECORDING

VOL. 9 No. 3

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Jazz Pizzicato

Gigi

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NEW TAPES

★—Fair

★★—Good

★★★—Very Good

★★★★—Excellent

CLASSICAL

Reviewed by Robert E. Benson



Music ★★★★★

Performance ★★★★★



Fidelity ★

Stereo Effect ★

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

RCA FTC 2982
4-track, 7 1/2 ips.
\$8.95...37 min.

MOSSORGSKY: Pictures at an Exhibition
RCA FTC 2084
4 track, 7 1/2 ips
\$8.95...31 min.

NBC Symphony Orchestra conducted by Arturo Toscanini

Here are two of the three "electronic stereo reprocessings" of famous Toscanini recordings issued some years ago monophonically by RCA Victor. On these new releases, RCA engineers have tried to "transform monophonic recordings to two-channel recordings with stereophonic characteristics" with the use of various filters and separating devices.

It is unfortunate that stereo was not perfected during Toscanini's lifetime. Toscanini was indeed badly mistreated by the recording engineers, as very few of his many recordings could be called anything approaching high fidelity. However, to the true music lover, sound quality is not of primary importance, so long as the performance is conveyed with the conductor's intentions so far as balance, tonal contrast and dynamics are concerned, although naturally good reproduction is always welcome.

After carefully listening to these reprocessings, I cannot feel that anything of particular value has been accomplished, other than the addition of resonance, so badly lacking in practically all Toscanini recordings. Directionality is somewhat confused, but this is a minor point compared with the incredible high-frequency distortion prevalent here, particularly in *Pictures*. These tapes are no great value in playing time either; Victor is asking a premium price of \$8.95 for a product definitely inferior to other modern recordings. I find listening to the original monophonic disc versions of these performances more satisfying than these new "stereo reprocessings."

RCA has an obligation to make Toscanini performances available, but instead of these fake stereo releases, why not issue the monophonic originals on four-track tape, with a separate channel on each of the four tracks? This would provide enormous playing time, and once again the extraordinary Toscanini performances could be heard by today's audiences.



Music ★★★

Performance ★★★★★

Fidelity ★★

Stereo Effect ★★★

"A MOISEYEV SPECTACULAR"
Orchestra of the Moiseyev Dance Ensemble conducted by Nikolai Nekrasov and Samson Galperin

ARTIA ASTA 501...
4 track, 7 1/2 ips
\$7.95...56 min.

This is one of the most exhilarating tapes I've ever encountered. The disc version of this was a best seller for Artia, and there is no reason why the tape should not be equally successful.

Anyone who heard and saw the Moiseyev Dancers when they toured the United States will want this tape as a reminder of the thrilling spectacle; others will want it solely for the stimulating music it contains. Here is a succession of dances performed by an expert orchestra including folk instruments. The *Moldavian Suite* is particularly interesting, highly reminiscent of Enesco's *Roumanian Rhapsodies*.

The first half of the tape is conducted by Nikolai Nekrasov; apparently the second half, conducted by Samson Galperin, was recorded at a different time, for the sound quality isn't quite as good on this track, with occasional distortion. Throughout stereo effect is big and spacious with no exaggerated directionality. Highly recommended.



Music ★★★★★

Performance ★★

Fidelity ★★★

Stereo Effect ★★★

STRAUSS: Ein Heldenben, Op. 40 ("A Hero's Life")

Philadelphia Orchestra conducted by Eugene Ormandy, with Anshel Brusilow, violinist
COLUMBIA MQ 396
4 track, 7 1/2 ips
\$7.95...45 min.

Strauss's sprawling score is difficult to put over successfully. Ormandy is more at home here than he is in Beethoven or

Brahms, but still this new recording cannot be called a just rendition of this music, when compared with the still definitive recording by Mengelberg and the New York Philharmonic Symphony Orchestra. True, the Philadelphia Orchestra plays magnificently, but Ormandy does little more than gloss over many important details of the score.

Columbia has labeled this recording "A triumph of orchestral sound" and in a way it is almost that, with a big, resilient sound. However, trumpets are subdued in some crucial passages (although perhaps Ormandy wanted it that way), and the violins, easily the best of any American orchestra, sound strident when playing loudly. Nevertheless, there is plenty of spectacle here, and hi-fi enthusiasts could find considerable pleasure in this tape.

This is one of the best of all tapes from a processing standpoint, but the turnover between sides was not well chosen. After the music stops on track one, it is necessary to fast forward the tape a half-minute or so before reversing it, to get the beginning of the second track. This long a delay is disastrous in the middle of the *Battlefield* episode.



Music ★★★

Performance ★★★★★

Fidelity ★★★★★

Stereo Effect ★★★★★

POULENC: Gloria in G Major for Soprano, Chorus and Orchestra
Rosanna Carteri, soprano; French National Radio-Television Orchestra and Chorus conducted by Georges Pretre

Concerto in G Minor for Organ, Strings and Timpani
Maurice Durufle, organist; French National Radio-Television Orchestra conducted by Georges Pretre

ANGEL ZS 35953
4 track, 7 1/2 ips
\$7.95...50 min.

Poulenc's *Gloria* is a fascinating modern work, with some magnificently impressive moments. It was written only recently, having its first performance in January of 1961 by the Boston Symphony Orchestra conducted by Charles Munch. The European premiere was in Paris February 14, 1961, and this recording was made the following day, under the personal supervision of the composer.

Technically, the *Gloria* is not particularly impressive, with an edgy choral sound requiring a considerably treble cut. The reverse track, the *Organ Concerto in G Minor*, is another story. This was recorded in the resonant Church of St. Etienne du Mont, and is a real sonic sensation, with enormous organ sonorities, backed by good

strings and deep timpani. This brilliant concerto is highly listenable and is guaranteed to give any hi-fi rig a thunderous workout.

Throughout, the tape processing is immaculate, with no traces of crosstalk, even in the loudest passages of the *Concerto*. Victor has announced another recording of this work with the Boston Symphony Orchestra conducted by Charles Munch. It will have to be a real rouser to beat this Angel tape.



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

RIMSKY-KORSAKOV: *Scheherazade*, Op. 35
BORODIN: *Polovtsian Dances* from *Prince Igor*

Suisse Romande Orchestra conducted by Ernest Ansermet with the Chœur Des Jeunes and Chœur De Radio Lausanne
LONDON LCL 80076
4 track, 7½ ips
\$7.95... 57 min.

This is Ansermet's fourth recording of *Scheherazade*; he is already represented on four-track tape by another version with the Suisse Romande Orchestra (London LCK 80058, \$11.95, a twin-pack also containing other orchestral works of Rimsky-Korsakov), and there were two other earlier versions with the Paris Conservatory Orchestra. It seems strange to have yet another version with the same orchestra and conductor, but apparently the English Decca engineers felt they could do better, and they have. Just what was done to produce this superior sound is not explained, but there is no question that this sound is the finest ever achieved with this orchestra; it is cleaner, more defined, and very natural and open in quality.

Of all of the repertory Ansermet has recorded, this is best suited to his capabilities. The familiar *Polovtsian Dances* from *Prince Igor* are equally well done, with the same extraordinary sound. Another fairly recent recording by Ansermet was the *Beethoven Symphony No. 9* (London LCJ 80051), which was so incredibly bad in sound and performance it is difficult to believe this stunning new tape is by the same performers and recording company. This new tape is a definite best buy, with almost an hour's playing time for \$7.95.



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

WAGNER: *Tristan and Isolde* (complete opera)

Birgit Nilsson, soprano (Isolde); Fritz Uhl, tenor (Tristan); Regina Resnik, mezzo-

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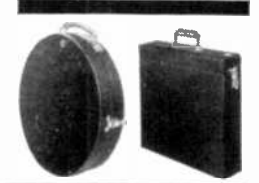
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soprano (Brangane); Rom Krause, baritone (Kurwenal); Arnold van Mill, bass (Marke) and others; Vienna Philharmonic Orchestra and Singverein der Gesellschaft der Musikfreunde; Georg Solti, cond.

LONDON LOY 90034 (three reels)

4 track, 7½ ips

\$33.95... 4 hrs.

Here is the most expensive four-track album ever released—the complete *Tristan and Isolde*—with a playing time of approximately four hours. Back in two-track stereo tape days, this would have cost at least \$80!

This is a production as it might sound in the opera house, as the voices are rather far back and frequently almost covered up by the glorious orchestra. Merits of the performance have been argued back and forth. To me what it amounts to is a superlative leading soprano, incredibly perfect orchestra, fine direction by Solti, but weakness in two crucial roles—*Tristan* and *Brangane*. However, the great care which went into this production is always evident, and the merits far outweigh the faults. For a stereo display, try the spectacular hunting horns at the beginning of Act II. Wagner would have been delighted, I'm sure.

These quiet tapes are well processed and superior to the disc version. The three reels, each containing one act, are attractively housed in a dark-blue container. No libretto is supplied with the tapes; however, by sending a postcard accompanying the set to United Stereo Tapes, they will mail you a free copy of the libretto for the disc version. This is perhaps not the ideal solution to the

problem of a libretto, but better than reducing the disc libretto in size so it will fit into the 7-inch tape box, resulting in it being almost illegible. I hope the tape-buying public will give this imposing release the support it deserves.

SEMI-CLASSICAL



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

HALLELUJAH!

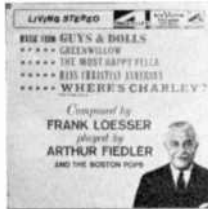
Side 1: Hallelujah, Glory, Glory, Hallelujah, We Three Kings of Orient Are, Christ, The Lord, Is Risen Today, The Bells of St. Mary's, Hallelujah (The Robe), A Mighty Fortress Is Our God,
Side 2: Little David, Play on Your Harp, Deck The Hall, Palm Sunday, The Lord's Prayer, 23rd Psalm, Chorale
Brass of the Hollywood Bowl Symphony Orchestra, conducted by Alfred Newman
CAPITOL ZP 8529
4 track, 7½ ips
\$7.98... 35 mins.

Alfred Newman and the Brass of the Hollywood Bowl Symphony Orchestra really put their souls and spirits in the inspirational selections which comprise this tape.

When something has to be expressed with authority, brasses are the instruments

for the job—and with the aid of a pipe organ and percussive section, here is a job superbly done. Each number provides its exhilarating thrills. Great swells, soft passages, warm tones, all combine to carry a most beautiful religious message. Organ pedal notes are so low you can almost count their frequencies. Stereo tape here does a superb job that a monaural version could not compete with. Altogether, a beautiful album of music of faith.—*F. N. West*

SHOWS



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

MUSIC OF FRANK LOESSER

Sequence A: Medley from Guys and Dolls, Medley from Hans Christian Andersen, Medley from Where's Charley?
Sequence B: Medley from Greenwillow, Medley from The Most Happy Fella

Boston Pops Orchestra, Arthur Fiedler, conductor

RCA FTC-2068
4 track, 7½ ips
\$8.95...35 mins.

Arthur Fiedler and his Boston Pops really give Loesser a whirl—and what a magnificent result! Without benefit of re-recording gimmicks and tricks, RCA demonstrated what could be done with fine music and musicianship. No gadgets were needed because here is wholesome, stirring music, so beautifully recorded, and with such dynamic range that you'll wonder why your hi-fi rig sounds so good all of a sudden.

Stereo as it should be, recreating the original music with such faithfulness and fidelity that you feel you are there.—*F. N. West*

POPULAR



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

BILLY MAY'S BIG FAT BRASS

Side 1: Brassmen's Holiday, Invitation, The Continental, Return of the Zombie, On A Little Street in Singapore, Joom Jooms
Side 2: Solving the Riddle, Autumn Leaves, Love is the Thing, Ping Pong, Moonlight Becomes You, Pawn Ticket

Billy May & His Orchestra
CAPITOL ZT 1043
4 track, 7½ ips
\$6.98...29 mins.

Three cheers to Capitol for producing a novelty musical tape without the usual gimmicks other than realistic ones. The surprising thing about this one is the revelation of what is really possible with brass

and no reeds and Billy's ingenious arrangements show it. The tunes bounce merrily along, and, although some are unfamiliar, give the musicians a chance to express themselves in an exciting manner. They also resist the temptation to get too noisy and keep the whole thing on the side of comfortable listening.

Sound is well recorded with good presence and stereo effect.—*F. N. West*



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

LONDON SAMPLER SERIES—POPULAR

Side 1: Heath—Tender Trap; Mantovani—Carnival Theme; Ros—April in Portugal; Black—Siboney; Chacksfield—So Rare
Side 2: Ros—Heart; Heath—I've Got My Love to Keep Me Warm; Black—Lullaby of Birdland; Chacksfield—Clopin Clopat; Mantovani—Out of My Dreams

LONDON LPQ 66000

4 track, 7½ ips
\$3.95...27 mins.

London's Sampler Series offers this tape to display some of its "Popular" wares and has come up with a winner. Imagine one tape with Ted Heath, Mantovani, Stanley Black and Frank Chacksfield, each playing two spectacular numbers for \$3.95 list. Sound like a bargain? It is.

These outstanding artists, representing the cream of the London catalog, play an excellent group of selections, each designed to create a desire for the entire album. Top recording, technically and musically—you can't lose.—*F. N. West*



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

SOMEBODY LOVES ME

Side 1: Somebody Loves Me, Golden Earrings, You're the Cream in My Coffee, The Green Leaves of Summer, Don't Fence Me In, I Only Have Eyes For You
Side 2: The Thrill Is Gone, You'd Be So Nice To Come Home To, It Had To Be You, I Don't Want To Set The World on Fire, Moon Song, All or Nothing At All
The Ray Conniff Singers

COLUMBIA CQ 401

4 track, 7½ ips
\$6.95...35 mins.

With so many singing groups making themselves heard these days, it is only natural that the Ray Conniff Singers, recognized as one of the best in the field, should issue a new tape that is a winner.

They have again departed from their original style wherein the voices took parts of instruments in an orchestra, and now sing the lyrics. About half of the numbers are done with a "beat" and the rest are the moody ballad type.

There is an interesting stereo effect as the male voices and piano are on the left, the female voices and harp on the right, while the rhythm section seems to come from the center. It all makes for some nice listening.—*F. N. West*



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

PERCUSSION AROUND THE WORLD

Side 1: The Poor People of Paris, Frenesi, The Third Man Theme, Calcutta, La Montana, The Children's Marching Song
Side 2: Volare, April In Portugal, Never On Sunday, Japanese Sandman, Cielito Lindo, Auf Wiederseh'n Sweetheart

International "Pop" All Stars

LONDON LPL 74010

4 track, 7½ ips
\$7.95...30:46 mins.

This is a Phase 4 tape of Percussion Around the World in which the International Pop All Stars attempt to capture the color and spirit of the countries visited. Although "Percussion" is in the title, it is very often overdone and outweighs the melodies.

The tunes, themselves, are not authentic native music, but for the most part, a collection of Broadway, film and pop tunes, that suffer from an overabundance of bongos.

The sound and recording are of the usual high quality.—*F. N. West*



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

TWELVE STAR PERCUSSION

Side 1: I Got Rhythm, We'll Be Together Again, Three Blind Mice, Nice Work If You Can Get It, Just A Gigolo, Lover
Side 2: Button Up Your Overcoat, Green Eyes, Pennies From Heaven, La Mer, Why Don't You Do Right?, Adios Muchachos

International "Pop" All Stars

LONDON LPL 74011

4 track, 7½ ips
\$7.95...28:16 mins.

Another entry in London's Phase 4 series by the "International Pop All Stars" in which a dozen old standard tunes have been given the percussive treatment. The result might have been subtitled the "Battle of the Bongos," as these instruments duel back and forth across the speakers while the music is subordinated to the noise makers.

It will be interesting to hear how these fine melodies sound if London ever uses the Phase 4 technique to produce good, easy-to-listen-to music without the bongo and percussion irritation.

As things sound at present, percussion can become very tiresome after a few playings.—*F. N. West.*



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

PERCUSSIVE LATIN TRIO

Side 1: La Cucaracha, La Palomita, Amor Amor, Pajaro Campana, Otorino Larin-gold, Granada

Side 2: La Bamba, Pepito, Perfidia, Cascada, Subo Subo, Adios

Los Machucambos
LONDON LPL 74012
4 track, 7½ ips
\$7.95...34:50 mins.

The Los Machucambos, a trio composed of 2 boys and a girl, display their artistry and ingenuity in a program of authentic folk tunes, ballads and Latin-American hits sung and played with the enthusiasm typical of their temperament.

Voices are well blended, rich in color, and, gay or sad, frenzied or sentimental, are well balanced against the melodic background of unusual native instruments. Among these are the Paraguayan harp, the charanga, and the tambora.

The bongos and other percussion instruments are used as they should be in Latin music, and aid, rather than disturb the vocal display.

The clarity of the sound, particularly of the harp solos, is sharp and brittle, probably due to the Phase 4 recording technique.—*F. N. West*



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

ROGER WILLIAMS INVITES YOU TO DANCE

Side 1: I Get A Kick Out of You, Papa, Won't You Dance With Me? Half As Much Cha-Cha-Cha, Hello, Young Lovers, Makin' Whoopee!, That Old Black Magic, When My Baby Smiles At Me

Side 2: I Could Have Danced All Night, The Tender Trap, Cheek To Cheek, Melody of Love, All of Me

Roger Williams
KAPP KTL 41032
4 track, 7½ ips
\$7.95...32 mins.

Roger Williams has assembled an appealing group of hits and transformed them by his magic to irresistible rhythms for dancing. At times his magic fools you and you feel that you'd just like to sit back and listen, but try steppin' out a bit, and you'll find that although sweet and tending to the moody, the music is pleasantly danceable.

He is supported by orchestras directed by

Frank Hunter and Pete King, and to say the least, his choice of orchestras is as good as his taste for musical selections. They make an excellent combination

The tape is beautifully recorded with plenty of stereo emphasis and complete absence of tape hiss and crosstalk.—*F. N. West.*



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

GOLDEN PIANO HITS

Side 1: Exodus, Canadian Sunset, Autumn Leaves, Bewitched, Begin the Beguine, Tchaikowsky Concerto

Side 2: Miserlou, 'Till, Warsaw Concerto, Nocturne in E Flat, Near You, Quiet Village

Ferrante & Teicher and their orchestra conducted by Nick Perito
UNITED ARTISTS UATC 2227
4 track, 7½ ips
\$7.95...37 mins.

Ferrante and Teicher, having forsaken most of their musical monkeyshines on the tricked up pianos, have settled down and put their creative genius to work on some real keyboard performances.

These showmen have taken some of the popular and concert favorites and given their interpretation to music of various moods, starting with their big hit recording of the "Exodus Theme" and including music by Tchaikowsky and Chopin. With a full orchestral background they play the stereophonic Steinways for all they are worth, and make you sit up and listen. This tape should be a "must" for twin piano music fans.—*F. N. West*

NOVELTY



Performance ★
Fidelity ★

BEST LAFF
Redd Foxx
BEL CANTO ST-141
4 track, 7½ ips
\$5.95...31 mins.

A performance by a West Coast night club personality named Redd Foxx who delivers a series of off-color jokes before a studio audience that is apparently convulsed at everything he says. Much of his material is in poor taste and some of it is crude or blue-tinted.

Stereo sound consists of the same monaural track on both left and right channels. This one has little appeal for the family trade and is definitely not for children.—*F. N. West.*



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Severna Park, Md.

CROSSTALK

from the Editors

BEFORE READING THIS we would suggest that you read the first two letters in the Feedback column on page 16 to get the necessary background information. Briefly, a Texas inventor has claimed that he has developed a device which imposes a tone on broadcast music, which tone is inaudible to listeners but which makes it impossible to record the music off the air. This announcement was contained in a UPI dispatch from Corpus Christie, Texas, which stated that Station KTOD-AM-FM in that city, had reported it had used such a device.

* * * * *

AFTER READING THE UPI dispatch, we concerned ourselves with attempting to get the facts in the case and also to secure some opinions. Both proved to be highly interesting.

* * * * *

RADIO STATION KTOD management said no such test was ever authorized by that station, neither by the management nor the board of directors. They said they had no connection with the inventor of the device, an L. L. Stewart, nor interest in the invention, nor did they ever intend to use such a device were it available.

* * * * *

THEY ALSO MENTIONED THAT since the story had appeared in the newspapers their mail had been heavy and from all over the nation—most of it telling them to "get lost," and running 90 to 1 against the use of any device.

* * * * *

THE RADIO STATION ALSO SAID that the news release did not come from them as stated in the release, but instead the inventor had furnished the statement to the wire services.

* * * * *

IT IS ALSO of interest to note that the FCC, which controls the airwaves, has had no applications for the making of such a test and were such a device used by any radio station to prevent the public from making home recordings of broadcasts, they would want to take a very close look at it. An unofficial opinion voiced by an FCC spokesman said that the use of such a device would violate broadcast rules. No station has been granted authority to scramble its music to prevent home recordings.

* * * * *

ENGINEERS IN THE RECORDING industry who had given any thought to the matter were inclined to shrug it off. At the worst, they felt, it would simply mean a market for another device to extract the offending tone before it reached the recorder, thus providing the opportunity for some manufacturer to make a few bucks by manufacturing the units.

* * * * *

AS WE GO TO PRESS, we do not have any details on how the device operates but neither can we figure how it would. If the tone is above the level of hearing, perhaps one which would beat against the bias oscillator of the recorder, then it would be so high that AM stations could not even get it in their bandwidth. FM stations, which go out to 20 KC might be able to do so but it would take mighty good equipment to ever get up that high on recording.

* * * * *

IT WAS ALSO THE thinking of some people in the recording field that any radio station that attempted to use one of these devices would lose its audience so fast it wouldn't be funny . . . and this seems to be brought out in the case of the mail response to the Texas station to which such a broadcast was ascribed.

* * * * *

ADDING IT ALL UP, it looks to us like a tempest in a teapot. The inventor has gotten some fine publicity. KTOD is apparently an innocent victim in the whole ruckus (one news source said they had a signed affidavit from the inventor that the broadcast had never been made). The FCC says such signal tampering is illegal and recording engineers believe that it would be a simple matter to make a filter to get rid of the unwanted tone. In addition, audience reaction would probably make it a very unwise move on the part of any radio station. We don't believe there is much cause for concern.

INDUSTRY NEWS

CONLEY ELECTRONICS, Evanston, Ill., makers of the Fidelipac cartridge, has named Ralph A. Anderson as president. He has had extensive experience in the electronics field.

AMPEREX CORPORATION, 230 Duffy Ave., Hicksville, L. I., New York, has announced a line of subminiature transistors for entertainment purposes. They have been designed to sell at or below comparable large-size transistors or vacuum tubes.

LOS ANGELES HI-FI SHOW to be sponsored by the Institute of High Fidelity Manufacturers will be held at the Ambassador Hotel from March 20 through the 25th.

THE MINNESOTA MINING AND MANUFACTURING CO. cartridge and machines will not be due on the market until late spring or early summer, according to present plans.

BELL SOUND is stepping up the schedule of manufacture of cartridges to play on its line of cartridge units. Its affiliated company, Bel Canto, has scheduled a monthly release of twelve new cartridges per month for the next four months.

JACK M. HALLECK has been named product sales manager for the tape recorder line of Warwick Manufacturing Company. The position is a new one in the firm.

AMERICAN CONCERTONE, INC., a division of Astro-Science Corporation, has just received new contracts for aircraft and missile magnetic tape instrumentation recorders

amounting to \$363,000, according to Concertone president Melvin C. Oelrich. The firm has also completed development of a recorder featuring concentric reels and dual differential capstans primarily designed for airborne or mobile data acquisition purposes.

CONDUCTORLAB, INC., Groton, Conn., has formed an audio-visual documentation division. It will supply industry with A-V programs for industrial training and inspection. The Avdoc laboratory will be equipped with sound recording and reproducing equipment for the preparation and duplication of magnetic tapes. Warren G. Abbot will be vice-president of sales and Robert J. Baker, technical director.

STANCIL HOFFMAN CORPORATION, Hollywood, Cal., has just appointed William L. Cara as Marketing Manager. He has been active in recorder marketing for fourteen years and has just resigned from Ampex to take the new post.

MAGNETIC RECORDING INDUSTRY Association looks for 1962 to be a big year for tape recorders. Growth of from 12 to 50 per cent is expected by industry executives. This also includes recorded tape. According to Bill Gallagher, four-track tape has enjoyed continued volume increases every year. Herb Brown, former MRIA prexy points out that with the increasing number of machines in use, tape sales should show a 20 to 30 per cent increase.

BOOK REVIEWS

A First Course in Sound Recording and Reproduction, by W. Greenwood. 5" x 7 1/2". cloth bound, 120 pages, \$3.95. Published by Pitman Publishing Corp., 2 West 45th Street, New York 36, N. Y.

An amazing amount of information has been crowded into this little book.

The author traces the development of sound recording and reproducing techniques from the early mechanical phonograph to the latest in magnetic recording.

The thirteen chapters cover practically every subject of possible interest to the hi fi enthusiast and will promote a better understanding and appreciation of the striving for perfection that transforms the plain everyday listener into an enthusiast.

Beginning with a short, concise dissertation on the theory of sound, which, of course, is the medium we are manipulating, the various methods of recording and reproducing are examined in detail, beginning with the mechanical tone arm of the early phonograph, through the many techniques of disc recording, sound on film recording up to the present World War II contribution of magnetic recording.

In addition to all this information on recording, there are equally informative chapters on loudspeakers, microphones, measurement techniques and the latest application of recording techniques in this age of computing machines and space satellites.

Because of the easy conversation style of presentation and the minimum of technical profundity this book is as interesting to read as a novel and as informative as an encyclopedia.

Introduction to Hi-Fi, by Clement Brown. 5 3/8" x 8 3/8", paper bound, 188 pages, \$3.20. Published by Gernsback Library, Inc., New York, N. Y.

This book is written for the music lover interested in obtaining enough technical information to intelligently select the component elements of a high fidelity system.

After explaining basic terms and fundamentals, the author discusses the practical considerations of pickups, amplifiers, speakers, room acoustics, stereo, tape recording and the selection and installation of a system.

Clement Brown is considered an authority and being both British and a music lover, has written with a completely different approach to the subject.

Equipment and equipment characteristics are examined in respect to their contribution to the end result of producing acceptable sound quality rather than in comparative specifications of little or no significance to the non engineering reader.

This difference in point of view makes this an interesting and informative book for even the veteran enthusiast whose sense of values might need a little shaking up.

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NEW PRODUCTS

KRS ELECTRONICS STACT



A completely new idea in automatic programming and reproduction of sound on tape has been introduced by KRS Electronics of Palo Alto, Calif. This multiple cartridge tape unit utilizes stacked endless loop cartridges. The basic unit is adaptable to a wide variety of applications involving the recording, reproduction and programming of voice and/or music. Another version of this "STACT" (Stacked Tape Automatic Cartridge Transport) is being produced for automatic teaching applications in language laboratories. Each unit can take the place of six conventional reel to reel tape recorders. An instructor may channel six separate lessons to as many as forty student positions on each channel. Each of the six channels (cartridges) may be engaged singly or in any combination; each can be stopped, started or changed independently of the others. A STACT unit takes about one square foot of space, and everything is automatic or push-button controlled. Complete information is available from KRS Electronics, 4035 Transport Street, Palo Alto, Calif.

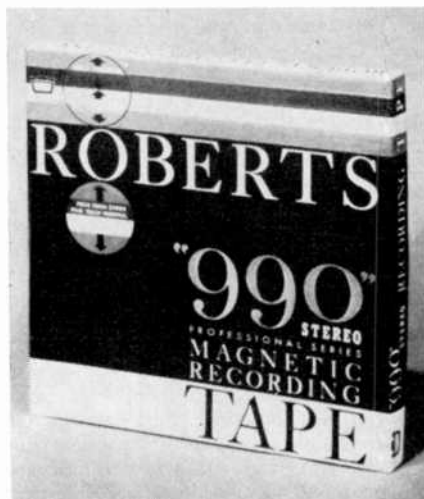
FILMAGIC PRODUCTS



Filmagic Long Life Tape Recorder Cleaning and Conditioning fluids now appear in new packages and new combinations of fluids to allow purchases of exact types and quantities of these needed maintenance items. One kit, FM-LL 200, is a standard cleaner-lubricant combination of two 2-oz. bottles, and the other, FM-LL 300, contains a cleaner-tape conditioner combination consisting of two 2-oz. bottles. Both kits sell for \$1.89. FM-LL 300 kits contain exact fluid refills for owners of the Filmagic Pylon kits. Available

separately are the individual 2-oz. bottles of all three fluids, priced at 98¢ each. Any other information is available from The Distributor's Group, Inc., 204—14th St., NW, Atlanta 13, Georgia.

NEW ROBERTS TAPE



Roberts Electronics, Inc., 5920 Bowcroft Avenue, Los Angeles 16, California, has introduced new Roberts magnetic tape. According to the manufacturer, Roberts "990 formula" recording tape offers true professional fidelity regardless of whether it is used with full, half or quarter track heads. Available in all standard reel sizes and types, Roberts magnetic recording tapes are available now from Roberts at the above address.

PHONO TRIX AMPLIFIER-SPEAKER



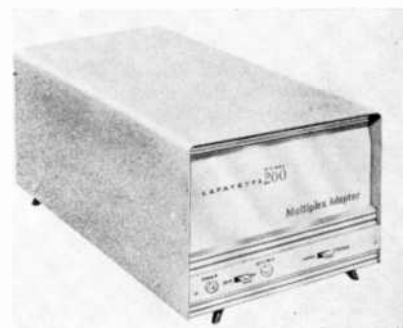
The Phono Trix all-transistor auxiliary amplifier-speaker makes it possible to use the new Phono Trix "Executive 88" miniature tape recorder as a portable, compact public address system. This amplifier-speaker is a completely self-contained unit, carrying its own power supply. It operates on 8 standard flashlight batteries. In addition to its use as an amplifier and as a portable public address system, the amplifier-speaker is excellent for private music listening where room-filling volume is desired. It is priced at \$39.95 and comes in a deluxe leatherette carrying case with a shoulder strap.

CLEVITE HEADPHONES



A new headphone set designed for maximum comfort and featuring a frequency response of 50 to 10,000 cps has been announced by Clevite Electronic Components, 232 Forbes Road, Bedford, Ohio. Model ED-300 headphones feature a moisture-proof piezoelectric "bimorph" motor, noted for its sensitivity, simplicity and negligible power requirements. Impedance is 50,000 ohms at 1,000 cps. The headset is designed for maximum comfort and ruggedness as well as to meet high audio-electronic standards, according to the manufacturer. The headphones can be worn comfortably over glasses, and the set's single cord allows easy on-off movements. Two types of removable ear cushions are available. They may be detached or attached in seconds with a special nylon zipper. The ED-300 headphones are available in four colors. All information and price are available by addressing a request to Dept. CR-128 at Clevite.

LAFAYETTE MULTIPLEX ADAPTER



Lafayette Radio Electronics Corp., 111 Jericho Turnpike, Syosset, L.I., N. Y., has announced its model LT-200 FM Stereo Adapter. This model is a universal self-powered adapter which requires no special knowledge to hook up. The front panel contains two slide switches, 1 power and 1 mono-stereo selector. Also included are power light and visible light indicator for stereophonic operation. Rear panel contains 1 input tuner jack and 2 amplifier output jacks. Features include notch filter for 38 KC; a low impedance plate follower output (for remote amplifier connection); matched diodes for optimum separation and 5% components in de-emphasis and notch circuit plus 1% components used in the matrix circuit. Supplied with 15' of low capacitance input cable. Housed in a metal case covered with tan vinyl. For more details and price, write to Lafayette.

TAPE IN EDUCATION

Of all the myriad uses for a tape recorder there is none so exciting as actual voice-to-voice contact with another tape recorder owner. The rise of the voice-sponding clubs is sufficient evidence of that.

This same technique is equally exciting when carried over into the classroom and through it any teacher can bring to her pupils an experience which will fire their imaginations and set them to work with vigor.

Tape exchanges can be arranged with classes of similar grade level almost anywhere in the world, thus bringing to the students the voices and songs of their counterparts in other lands.

Even an exchange with another school in the same state, or in any of the United States, proves to be a fascinating experience.

Ruth Y. Terry, a teacher in the Muskegon High School, Muskegon, Michigan has been actively engaged in this endeavor for a number of years, having organized the International Tape Exchange to facilitate the exchange of tapes between schools.

Just recently she has authored a Tape Exchange Directory which includes a listing of almost 600 schools in this country and abroad who are interested in the tape exchange idea. This includes almost all grade levels and a wide variety of interests on which tapes may be exchanged.

The booklet also contains a discussion of the tape exchange idea, values which accrue, curricular applications, reports of participating schools, suggestions for getting started with classroom tape exchanges and on making good recordings.

The 56 page booklet is available for \$1.50 from the Michigan Audio Visual Association, The University of Michigan, Audio-Visual Education Center, Frieze Building, 720 E. Huron, Ann Arbor, Michigan.

Educators who would like to have their names added to the directory should send the details to Ruth Y. Terry, International

Tape Exchange, 834 Ruddiman, Ave., North Muskegon, Michigan, U.S.A.

It is contemplated that supplements to the original booklet will be compiled from time to time adding new names as they are received.

The title of the booklet is "Pupils Speak to Pupils Around the World."

As an example of the value of this type of exchange here is a letter from Floyd L. Smith, principal of the Woodruff Elementary School, Ypsilanti Michigan.

"Woodruff School is finding new educational values in the use of tape recordings.

"Last year in grade six, Australia was just a place on the map . . . but after the children had received a tape recording made by Sixth Graders at Northcote School in Melbourne, Australia, the whole pattern of motivation was changed. The attitude was warm and personal. Real people lived in Australia. Children! And the study that followed gave a much broader concept than could ever be given by a printed page. Grade five this year is having the same experience with Canadian Schools and is gaining new appreciations.

"And what an opportunity in the communication arts! The fifth and sixth grade children made a tape in reply. They listened to their own recording and evaluated it. No one could point out their weaknesses as effectively as they could themselves, listening to their own tape. There was purposeful perfection as a goal with no outside pressure. Grade six has just finished a tape recording on the meaning of the Bill of Rights for radio station WHRV. Besides the valuable information on this historical document, they became their own severest critics on HOW it should sound. . . ."

The author also reports on her own experiences in international tape exchanges between classes . . . "a tape was prepared by the writer's English class in the Muskegon Junior High School. It included our National Anthem, our Pledge of Allegiance, a recording of *America* and a

talk by an Australian Exchange teacher about the schools in the United States. The tape was sent along by parcel post to Kerang, Victoria, Australia, and in a short time a tape from Australia describing the area, industries and schools of Kerang was received in Muskegon. This initial effort and the study activities it stimulated developed a great interest in Australia, a 'feeling' for the school life of Australian students and an awareness of the things common to both countries. Other tape exchanges followed with schools in Japan, Sweden, England, New Zealand, Germany, India and Austria. The results were exciting. The tapes made the people of these countries 'come alive'— become real. Pupils learned to respect their counterparts in other countries because of their mastery of English and were challenged to perfect their own diction. At the same time through experience, they became interested in learning a foreign language and could see its utility. This was motivation for reading, discussion and special reports."

It takes but little imagination to see the possibilities in such tape exchanges between classes.

Almost any subject can be made more alive and of vastly greater interest to the students through the medium of tape exchanges. But perhaps even more important than the increased interest in the subjects themselves is the increased interest in the people of the other lands.

The students are fascinated by the thought that far away, perhaps half-way around the world there are boys and girls like themselves studying the very same subjects and with much the same problems.

This cannot fail to have a great effect on their conception of international understanding between peoples which has proved so necessary to part of life today.

Likewise, in producing tapes for those overseas, much has to be learned about our own lives so that the presentation may be made of the highest interest and value.

If you are interested in starting a tape exchange we suggest you start by acquiring a copy of Miss Terry's booklet.

TAPE RECORDING BOOKSHELF

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

Aimed at new recordist who has yet to discover the interesting and profitable uses of a tape recorder.
6" x 9", 128 pp., paper bound, illustrated\$1.00

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

A complete handbook of tape recording containing up-to-the-minute information of practical value to every tape recordist.
5 1/4" x 8", 150 pp., paper bound, illustrated\$1.50

TAPE RECORDERS AND TAPE RECORDING, by Harold D. Weiler

Covers Room Acoustics—Microphone Techniques—Recording From Records—Radio and TV—Sound Effects—Recorder Maintenance, etc.
5 1/2" x 8 1/4", 190 pp., paper bound, illustrated\$2.95

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

This book is based on the principle that to get the most from a recorder, one must first understand thoroughly how it operates.
5 1/2" x 8 1/2", 177 pp., paper bound, illustrated\$2.75

BOOK DEPARTMENT, TAPE RECORDING MAGAZINE

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Recording from Phono

Q—I would appreciate any information you can give me on the proper tone control and loudness settings for recording directly from a record player to a tape recorder. The jack on the record player is connected across the speakers.

The record player has a loudness control numbered from 1 to 10 and a bass and treble control numbered from +5 to N to -5.

The tape recorder also has a tone control for playback plus two volume controls.

With the record player tone control set at N (Normal), the recording sounds muffled even with a treble control setting on the recorder. I next tried +5 treble and -5 bass on the record player while recording and a bass setting on the recorder during playback. However, something seems to be missing.

With all these settings, I am at an impasse how to make a clear, normal recording. Should not one setting be adequate for all phonograph records? Also should not a bass playback control compensate for a lack of bass emphasis during recording?—E. H. H., Reading, Pa.

A—Your difficulty would seem to stem from an impedance mismatch rather than from adjustments of controls. The output from your record player is a low impedance, relatively high-power output. If you are feeding this into your recorder using a high impedance input, such as the mike jack, you will get distortion which will make the recording sound muffled. A transformer with an 8 ohm primary and a 100,000 ohm secondary should help in this case. The low side is connected to the phonograph and the high side to the recorder. You might also try bridging a 100,000 ohm resistor across the wires leading to the input and an 8 ohm resistor in the line. This will sometimes serve in place of the transformer.

The tone controls are generally limited to playback only so their setting when making a recording will mean nothing. The controls on the phonograph will affect the recording since they are ahead of the speaker from which you are taking the signal.

The setting may have to be varied from record to record since they are not uniform.

Impedance-Shielded Cable

Q—I would like to make the following inquiry: 1—What is high impedance and low impedance? 2—When is shielded cable used? Why is it used?—K. H., Milwaukee, Wis.

A—The term impedance is used to describe the resistance of an alternating current circuit and is expressed in ohms. The input impedance of a device is the impedance seen when "looking into" the input terminals. The output impedance is that obtained by "looking into" the output ter-

minals. The nominal impedance is that specified by the manufacturer which will produce a given set of results. Amplifiers, for instance may be made to operate over a range of several different values of source impedance and the gain will vary with the different values of source impedance. High impedance is usually applied to circuits having great resistance, say from 15,000 ohms up. Low impedance is applied to devices of low resistance, such as loudspeakers which usually have an impedance of anywhere from 2 to 16 ohms. A low impedance microphone will run about 50 or 75 ohms and a high impedance mike will go to 100,000 ohms. The nominal impedance of transmission lines for audio work is 600 ohms.

Shielded cable is wire which has under its outside rubber or plastic coat, a woven braid of fine wires completely encircling the conductors in the center. The purpose of this protective braid is to trap and ground any stray currents which might interfere with the transmission of the signals on the conductors. Shielded wire with the outside braid and one center conductor is sometimes called coaxial cable or "coax." This is the type most frequently used for making audio connections. The braided shield is always connected to the grounded side of a circuit, such as the case of the microphone and the outside of a plug. The inside "hot" wire is connected to the tip of a plug and the other side of the element in the microphone.

Shielded wires should be used to connect devices where very small currents are involved, such as from a microphone to the input of a recorder or from the heads to the recording amplifier. Connections from a phono pickup to the preamplifier should likewise be of shielded wire. Since the braided shield picks up stray currents and grounds them it prevents the currents from reaching the hot center conductor or conductors and setting up hum in the line.

Chair with Hidden Speakers

Q—I am informed that several years ago your magazine advertised a chair with hidden speakers which could be jacked into a monaural or stereo set for personal listening I am interested in this type of thing. If you can send me a photo or put me in contact with the company who makes it today, I would be appreciative. Just to reiterate, this was a regular living room chair with hidden speakers in the wings which could be jacked into a stereo set.—H. L., Monsey, N. Y.

A—We recently received an announcement that the Greystone Upholstery Corporation, 375 Auburn Street, Allentown, Pa. is now marketing a chair such as you mention. We understand that the price is from \$169 up, depending upon the choice of upholstery. The chair has 8 inch speakers. We suggest you contact them directly.

TAPE CLUB NEWS

Voicespondence Again Plays Cupid

Dan Cupid has let fly with his arrows again—twice—amongst members of The Voicespondence Club. Dorothy Panter of Batavia, New York, after talking on tape to Bill Lohr of Durhamville, New York, for some months arranged to meet him. Both Dorothy and Bill are blind, but in spite of that it was "love at first sight" when they met. They are making their tapes together these days, now that their affection has resulted in their marriage.

The second arrow came to earth when The Voicespondence Club's Service Committee sent Roy DiMauro of Brooklyn over to Manhattan to help Rebecca Guegan learn to use her new recorder. This is the sort of thing that VS-ers are always doing—lending each other a helping hand. This time, however, that arrow of Cupid's pierced both hands, and it wasn't long before Rebecca and Roy were married. They're both blind, too, as are about 20% of the members of the Club, and while they didn't meet each other by tape they did meet as a result of voicespondence.

Magazine For The Blind

The Tarver Memorial Fund, operated by, but separate from, The Voicespondence Club, continues the free distribution to the blind of loan tape copies of the club's recorded digest of Tape Recording Magazine. The club for the past four years has prepared a master tape every two months of selections from this magazine and has placed this master in its Tape Library for copying onto tapes sent in by blind members. Thanks to the expanding activity of the Tarver Memorial Fund, blind VS-ers can now get loan copies sent directly to them post free for "reading" and then returning for the next on the list. The fund also distributes similar free loan copies of The Voicespondence Club's own quarterly magazine.

The fund operates entirely on voluntary contributions and does not make use of the club's regular income in any way.

A 52 Pound Head of Cabbage?

VS members Ed Schultz of Arkansas and B. J. Carr of Alaska are good friends—via tape, of course. And their tape friendship has been marked by a lot of boastful comments about their respective states, with Carr speaking of his huge state and its achievements as though he was a king-size Texan. When the subject of vegetables came up Schultz, who says he is the only totally blind printer in the world, pointed out that the short growing season in Alaska precluded the growth of anything like the kind of vegetables they got in Arkansas. Carr said no, and pretty well proved his point by shipping Schultz a 52 pound head of cabbage! The freight bill for sending this huge piece of sauerkraut-on-the-hoof was \$29.70, but VS-er Carr says it was worth it to prove his point!

JOIN A CLUB

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

AMATEUR TAPE EXCHANGE ASSOCIATION
Ernest Rawlings, President
5411 Boscage Street
Cartierville, Montreal 9, P. Q., Canada

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

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

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

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

MAGNETO-VOX CLUB
J. M. Roussel, Sec.-Exec.
8140, 10th Avenue
Montreal 38, Que., Canada

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

STEREO INTERNATIONAL
O. B. Sloat, Director
1067 Flatbush Avenue
Brooklyn 26, N. Y.

**TAPEWORMS INTERNATIONAL
TAPE RECORDING CLUB**
Marion Chism, Co-ordinator
129 South Broad Street
Carlinville, Illinois

THE SOCIETY OF TAPE HOBBYISTS
Ralph Holder, General Secretary
116-06 139th Street
South Ozone Park 36, N. Y.

THE VOICESPONDENCE CLUB
Charles Owen, Secretary
Noel, Virginia

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

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

OVERSEAS

AUSTRALIAN TAPE RECORDISTS ASSOC.
John F. Wallen, Hon. Secretary
Box 970. H., G.P.O. Adelaide, South Australia

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

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

**THE NEW ZEALAND
TAPE RECORDING CLUB**
Kenneth M. Tuxford
P. O. Box 7060
Auckland W. 1, New Zealand

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

Italian Tape

A tape on Milan, Italy has been produced by World Tape Pal, Enzo Cardillo, a very active member, and Miss Albina Fornelli, a newcomer to WTP. Here is a visit to one of Italy's most important cities via the medium of tape. In fifteen minutes you are taken through the past and present of Milan; its history, its economy, its geography, and its monuments.

The program was recorded on a V-74 Kodavox tape with background sound effects made at the Linate Airport and the Central Station of Milan, and operas recorded from La Scala Theater, world renowned opera center.

Taped Church Services for Ill

The secretary, John S. Gaydosh of the Russian & Eastern Orthodox Liturgical-Church Music tape exchange society wishes to thank the many people who have already made exchanges of church tapes, and those that will continue to do so.

Many of the tapes exchanged will be used in services for ill worshippers in their home or hospitals. It is a wonderful feeling for shut-ins to be able to listen to their Liturgical Services on Sundays.

This organization is non-profit and these services for shut-ins is their way of doing a good deed for the Russian and Eastern Orthodox Church in America and Canada.

Club Readies Broadcasts

Recently, the Magneto-Vox Club has been invited to cooperate in the production of a continuous series of weekly radio programs, which would be broadcast by radio station CFOX, Montreal, during the first months of 1962.

Any member stations in the club can send in any recordings they consider to be of interest for the programs. The club also invites any soundhunter anywhere to send in their recordings. Every week, three or four will be selected by Charlie Morgan and Maurice Roussel for broadcasting during that program. Producers of selected programs will receive a couple of reels of tape and their name will be mentioned in the program. A few examples of the kind of recordings which can be submitted are as follows: sound effects, interviews, candid recordings, amateur artists, sound experiences, oddities, reports or events, children, skits, animals, etc.

Anyone interested in additional information can contact the club at the address listed in our roster.

Elected Officers

The committee of officers of the Union Mondiale Des Voix Francaises Club is as follows: Jean Thevenot, well-known producer of French radio and television and founder of the International Federation of Sound Hunters—Honorary President; Guy Serin (France)—President; Emile Garin (USA)—Secretary; John Courtois (USA)—Treasurer; other officers include Linda Primavera (USA), Jose Allays and Roland Maury (Belgium), and Edmond Lavaut (France)

HOW'S YOUR HEARING?

Tapebook #2

by James M. Laing, M.Ed.

Are You Getting The Most Out of Your HI-FI or Stereo?

Can You Understand Speakers? Hear Lyrics Plainly?

Protected hearing is the key to your listening enjoyment.

Hearing is one of your most precious human possessions. It, however, like every other precious possession, requires protective care. Without proper protection your hearing can leave you completely, and without warning.

To properly protect your hearing there are two things you must do: (1.) test your hearing periodically, and (2.) seek early medical guidance as soon as a hearing test indicates a possible hearing loss.

Periodical hearing tests are important because, unlike most other ailments, a hearing loss gives you little positive warning. A hearing loss can creep into your life so gradually that you can be completely unaware of its presence.

Test your hearing . . . and be sure!

To help you check your hearing periodically is the purpose of this "hearing check recording."

TAPE CONTAINS

30 minutes of music by the famous Lenny Herman Orchestra—good for listening or dancing as well as screen testing of hearing. Specially monitored.

33 ton pairs to test musical discrimination

75 word pairs to test speech discrimination

Full 7" 7 1/2 IPS
dual track reel
full direction booklet
Only \$9.95

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Mooney-Rowan Publications
Severna Park, Md.

Please send me copies of TAPE-
BOOK #2. I enclose \$

Please bill me later

Name

Address

City Zone State

FEEDBACK

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

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

Tone Signal Causes Furor

To the Editor:

I am a Disc Jockey in this city . . . and also a tape enthusiast in varied directions. I was thusly quite horrified to find the enclosed item sent over the wires of United Press International.

I believe it to be a matter of great importance that you warn your readers of the horrible threat revealed in this piece of copy. I hope you can find some way to eliminate it.

Due to circumstances I prefer to remain anonymous . . . but the item is authentic, I assure you. You may check, if you wish.—Dallas, Texas.

Ed. Note: enclosed with the above letter was a UPI dispatch right from the station teleprinter. The dispatch stated that a Corpus Christi radio station KTOD-AM-FM reported it had put into use an electronic device that spoils a recording made at home from a TV or radio broadcast.

The dispatch further stated that the station had said it had used the device during the broadcast of a tape of Pablo Casals, world's leading cellist.

According to the item, the device broadcasts a tone on top of the music and makes it 'exceedingly' difficult to record. It is claimed the tone cannot be heard by a person listening to the radio or TV receiver. It stated that if the broadcast is taped from a receiver at home, the tone is so audible when it is replayed that it ruins the music.

The invention is the work of L. L. Stewart, an electronics consultant who claims that record sales are cut from 25 to 30 million dollars a year by home taping.

The inventor is quoted as saying that the device has been widely tested and is almost foolproof. There is no way to take the tone out. The better the equipment (for recording at home) the better the system works.

For our comment concerning this device see Crosstalk, page 10.

To the Editor:

I am enclosing an article (see above Ed. Note) taken from last evening's paper that has upset me and I suppose, most other owners of tape recorders. In all possibility you have already read the article and perhaps many letters resulting from the article. I, for one, would like to see a good article in TAPE RECORDING explaining the reason behind this and who is behind it. Is there anything we, the average tape enthusiast, can do to curb the use of this device in the way of protest letters, etc.?

Is this another attempt by the record industry to stamp out that insolent, persistent pest, the tape recorder? Perhaps the record industry will invent a new "device" in the future to prevent me taping borrowed records or prevent my taping at a friend's home because it may cut

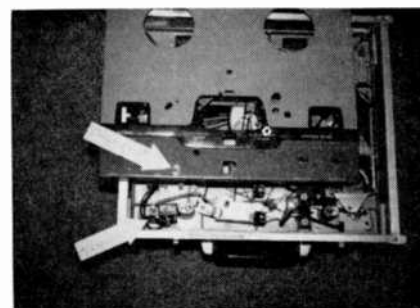
potential record sales perhaps "\$— million a year."

Perhaps this tone can be filtered out by another device to be added to the enthusiast's tuner? After the missile was built then came the anti-missile missile.

Well, needless to say, this is one confused, frustrated tape recorder owner who has just cancelled all thoughts of purchasing that second recorder as well as that high-quality multiplex tuner.—Richard J. Hardin, APO., San Francisco.

See our comments in Crosstalk, page 10.

Reader Installs Microswitch



To the Editor:

I just wanted to let you know I read TAPE RECORDING from cover to cover.

I think your magazine is doing a lot to educate the great American public to the facts of tape recorder/reproducers.

Too many people are ignorant of the fact that tape recorders are the best means of reproducing "store bought recordings," and are not just toys to talk into.

I have the portable Ampex 960 with the two 2010 amplifier/speakers, which have given me endless hours of enjoyment.

After reading December TAPE RECORDING, "A disengager for your recorder," I thought I would send a picture of the microswitch I installed in my Ampex. The microswitch is mounted on a flat brass strip to the recorder chassis. A brass rod soldered to the appropriate arm opens the microswitch after the tape goes through and the automatic disengager releases the capstan pinch roller, take up drive, etc.

The microswitch is wired in series with the normal switch (this arrangement also cuts power to any amplifiers connected to the tape deck). A toggle switch is wired in parallel with the microswitch. With the toggle switch on, the power stays on in between tapes. To use the "Auto power cut off" I put the Ampex in play and flip the toggle switch off. Thus everything disengages and shuts off instantly at the end of tape.—Richard H. Laughlin, Fond du Lac, Wisconsin.

ERRATA

The price of the Bell T-338 Recorder reviewed in the last issue was incorrect. It should have read \$369.95. We regret the error.

"WHY MY RECORDER IS IMPORTANT TO ME" CONTEST

WIN A REEL OF TAPE. Tell us in your own words why your recorder is important to you, not why it could be important to someone else. Entries will be judged on the basis of their usefulness to others and on the uniqueness of the recorder use. No entries will be returned. Address your entry to: Important Recorder Contest, Tape Recording Magazine, Severna Park, Md.

Gentlemen:

As a student of Judo, I am quickly discovering the skill required to complete a Judo throw properly. Although this is not as easy as first meets the eye it is proving to be a lot easier than memorizing the Japanese names for the throws themselves, a most important aspect of Judo.

Since I've had my tape recorder I have used it strictly for recording music, never realizing its potential as a "private Judo tutor" until I discovered that by listening to myself pronounce the Japanese names over and over again on tape, not only did the names remain with me longer but the throws were outlined much more clearly in my mind.

My tape recorder has proved invaluable to me for this reason and I'm sure that as time elapses and as I gain experience in this wonderful world of sound, I will find even better uses for this ingenious invention.—*Robert Cheikes, Bronx, N.Y.*

Gentlemen:

The question is—How Is My Tape Recorder Important to Me? I am sightless, and until I received my tape recorder I was considered a shutin during the cold months of late fall, winter and early spring when I could not get out because of the weather. However, when I got my tape recorder, everything changed. I found that I could visit anyone in the whole wide world via tape—visit with them just as

I would if I traveled there personally. They keep me highly entertained in my own home and I can do all of this without leaving my own fireside. I can again associate with sighted people as well as the blind.

My tape recorder makes it very pleasant for me and I appreciate it and all it is doing for me. I couldn't praise my tape recorder enough. I enjoy all the different subjects, entertainment, music, sports, and what have you, possible now through my correspondence on tape.—*Fred A. Baker, Cleveland, Ohio.*

Gentlemen:

Four years ago I got my tape recorder for Christmas and it is very important to me and my family.

1. I can record everything from radio, records, speeches and so forth.

2. I belong to the German Singing Society. Every year we are giving 2 concerts. It helps a lot during rehearsal to record and play back the voices, so the singers can hear how it sounds. The evening of our concert will be recorded also. Every two years is a Songfest by the North Pacific Saengerbund (including: Portland, Oregon—Seattle, Wash.—Spokane, Wash.—Tacoma, Wash.—Vancouver, B.C.). There are 400 singers on the stage. This is a very big event and the radio station men record it and so I get a tape also

and the friends in our hometown can hear it too.

3. One other thing is worthwhile to mention, my father, 82 years old, came from Eastern Germany 1 year ago. On my birthday he had a nice surprise. With help of a friend he recorded a speech. I am sorry to say, he got homesick and went back to East Germany on Aug. 24, 1961 were he died 2 weeks later. Now I have his voice on tape forever.—*Ilse Krauss, Portland, Oregon.*

Dear Sir:

I am a Canadian soldier stationed on the Gaza Strip in Egypt. I've been in Camp Rafah for three months. While I've been here, I've had the opportunity to buy a "Grundig Stereo Hi Fi" tape recorder TK45. With this in mind, I've answered your question: Why my tape recorder is important to me.

Since I have owned my recorder, I've been able to listen to music of my own country. I can get C.H.E.X. newscasts sent to me to keep me in touch with my home town. I have recorded letters from my family and loved ones. This helps to bring home to me, here on this lonely outpost. I've got a rare opportunity to record a people of an ancient land for use in teaching lessons in my church. My recorder is my friend, my family and my girl, all in one.—*CFN. Riel, E.W., Middle East.*

TAPESPONDENTS WANTED

This listing is for those seeking tape correspondents, looking for swaps of tapes, etc. and it is a free service for our readers. If you wish your name listed send us the following information on a post card: 1-Name, 2-Mailing Address, 3-Kind of recorder, speed and number of tracks, 4-Subjects on which you want to tapespond or items for which you are looking, 5-Indicate whether you are an adult or teenager. Listing will run two months and then be dropped to make way for new listings. Address your postcard to: TAPESPONDENTS WANTED, Tape Recording Magazine, 101 Baltimore-Annapolis Blvd., Severna Park, Md.

F. Wayne Ashworth, WSTP Radio, Box 157, Salisbury, N. Carolina; Recorders: V-M 720, 3¾ & 7½ ips, quarter track—Revere 1120, 3¾ & 7½ ips, dual track—Ampex 601, 7½ ips, single track; Interests: Amateur Radio, Religion, Music, Photography, Travel, World Affairs.

Albert Schrib, 2030 S. Gilpin, Denver 10, Colo.; Recorder: Knight (KN 4075), 1⅞, 3¾ & 7½ ips, 4 track stereo; Interests: Psychology and hypnosis.

Richard H. White, 24 Stillwell Road, Franklin Park, New Jersey; Recorder: Sony, 3¾ or 7½ ips, quarter track; Interests: Music, Photography, High Fidelity; Adult, 34, single.

Jerry Lipman, 1750 Rivera St., San Francisco 16, Calif.; Recorders: Webcor-Regent & Sony 262-SL, 1⅞, 3¾ and 7½ ips, 4 track; Interests: Researching Dublin-born composer, Michael William Balfe. Also interested general tapespondence; Adult.

George DiSylvestro, 717 Florence Drive, Park Ridge, Illinois; Recorder: Wollensak, 3¾ & 7½ ips, dual track; Interests: Wants to trade or exchange American Foundrymen Society technical meetings or foundry educational subjects and salesmanship training tapes.

Roger Feingold, 2055 Cruger Ave., Bronx 62, N. Y.; Recorder: Voice of Music 722, 7½ & 3¾ ips, 4 track stereo; Interests: The art of conversation, Music, almost all topics; Teenager.

Lawrence A. Sharpe, P. O. Box 713, Chapel Hill, North Carolina; Recorder: Sony 101, 7½ & 3¾ ips, dual track; Interests: Wants copies of old (not now on air, not necessarily too far back) soap operas and other old radio programs. Has language laboratory equipment at his disposal for making copies. Also interested in exchanging language tapes; Adult.

Louis Berger, 1751 E. 67th St., Chicago 49, Ill.; Recorders: Wollensak, Revox, Sony

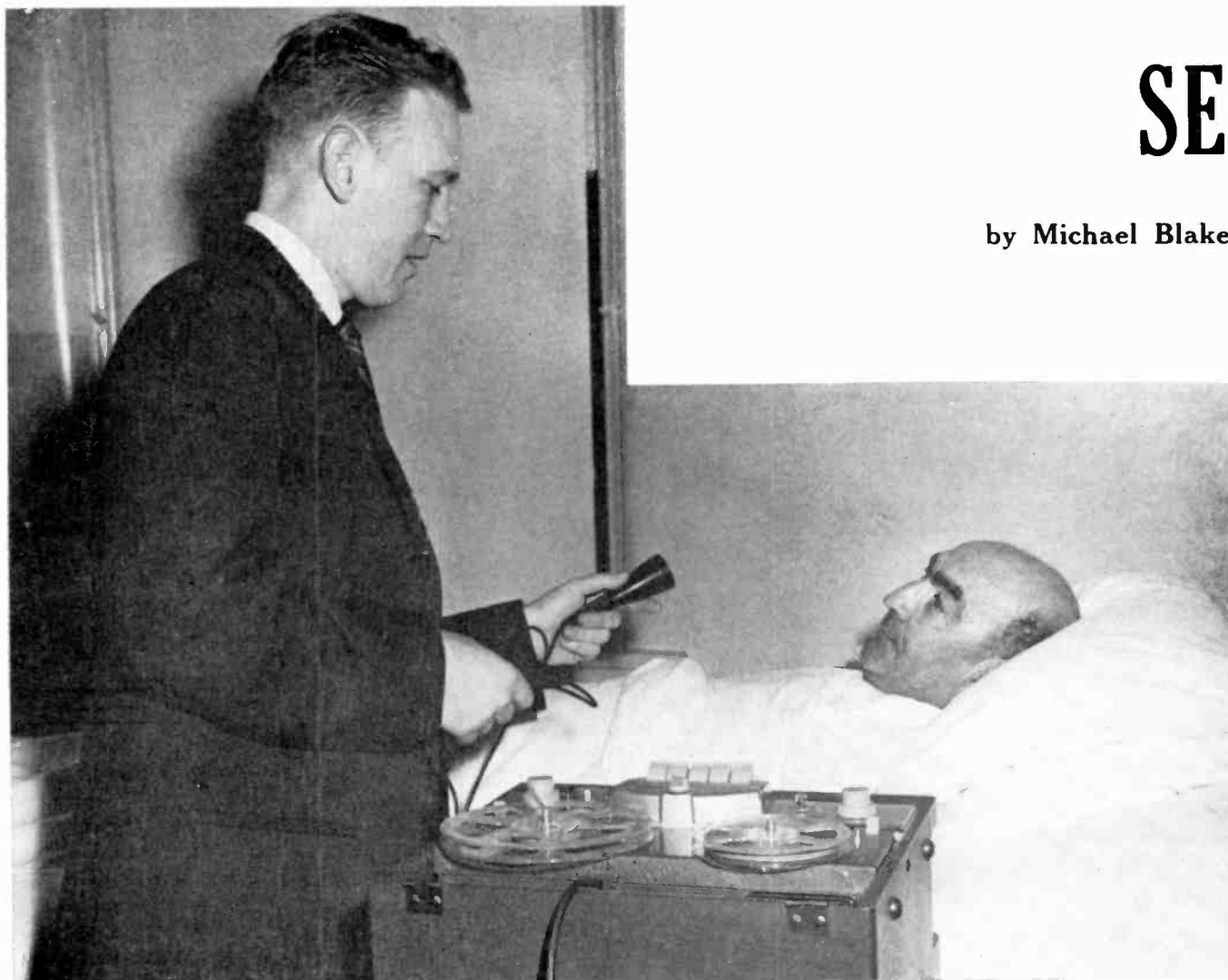
Stereorecorder, 7½ or 3¾ ips, dual track; Interests: Sound effects, collector's items, comedy, entertainment. Have 10 year collection in 571 reels which includes selected musicals, dramas, voices of celebrities, old and current; Adult.

Sam Bergstein, 43-40 Union St., Flushing 55, N. Y.; Recorder: Bell tape deck, 7½ or 3¾ ips, mono dual track or 2 track stereo record; Interests: Dixieland, Big Band Swing, Dance Bands; Adult.

C. B. Hagen, Geography Dept., UCLA, Los Angeles 24, Calif.; Recorder: Ampex 960, 3¾ or 7½ ips, full, ½ or ¼ tracks; Interests: Historical-political recordings, speeches of statesmen and famous men, historical events, political and propaganda songs, marches and music, wartime recordings; Commercials and jingles; Music of Carl Orff not on commercial records; Nature and city sounds, ambient and background noise recordings; Adult.

SELF

by Michael Blake



Prominent people under hospital treatment make excellent interviewees. In this instance only patients "on the mend" are candidates for the microphone. Patients with chronic or terminal illness do not come within the province of the cheerful-chatty interview.

TAKE that tape recorder out of the attic or the hall closet and get to work! There's gold in that tape recorder—gold, prestige, recognition, and hours of fun, as you put your machine to work in creating a highly salable product. I refer to the *self-contained feature interview*—a product that has a sales potential at any one of 3600 AM and 874 FM radio stations throughout the nation.

Discounting the 50,000-watt giants in the major cities, the 250, 1000 and 5000-watt stations which dot the countryside are hungry for local news. This is especially true since the demise of network radio. Stations are now interested in local news, depth coverage of news in your own neighborhood.

This is a how-to-do-it article. It is not an easy step-by-step plan as can be found in publications reserved for auto mechanics and quiltmakers. Rather this how-to-do-it is a pot-pourri of tricks and know-how that I have gathered in the past several years as News Director of a medium-sized radio station in the New York Hudson Valley. It is an AM and FM operation not unlike the radio station whose tower is just outside your town or atop your town's tallest building.

Also included in this text are three examples of the SCFI, the reasons why they were made, and the special problems encountered. Interested? Okay, let's dig further.

First of all, let's get rid of a preconceived notion. All of us at one time or another have taken our tape recorder microphones in hand and have imagined ourselves as master newsmen delivering the news to a vast news-hungry audience. We sound good. In fact, we're even a little bit better than the hacks whose voices fill the airwaves. Forget it—it r'ain't so. Radio is a craft which is learned by making countless errors and stumblings on microphone. You may sound good in the privacy of your room or in the party atmosphere but there is a big difference when that little red light tells you that you're actually on-the-air.

So, first of all, you must realize that you are not a polished radio performer. This means that you will have to work twice as hard in making taped interviews. You will spend more time in planning the tape and you will spend more time at the editing rack.

The SCFI is what the name implies. It can stand alone. It has both an opener and a closer. It tells its own story. Here are three examples. Once you've digested them we shall discuss the special problems in each one.

Newsman: This is Michael Blake at City Hospital. Today we're visiting Police Chief Peter Jones who has been confined to the hospital for the past two weeks. It was two weeks

CONTAINED FEATURE INTERVIEWS

. . . it's a well known fact that people like to hear about people, and this type recorded interview is sought by many local radio stations to use in their programming.

ago that Chief Jones sustained a broken vertebra in a fall at Police Headquarters. We're here at City Hospital at Room 206. Chief Jones, how do you feel?

Chief: I feel very well now Mike and I want to thank you for stopping by.

Newsman: Chief, you certainly look well; how long do you think you'll be confined here at the hospital?

Chief: Possibly two more weeks.

Newsman: Chief Jones, looking around the room I see a great number of get-well cards. About how many have you received?

Chief: From the nearest I can figure, there are about 900 cards.

Newsman: Sir, have you been troubled with any of the official business of the police department during your hospital stay?

Chief: No, I'm thankful that Acting Chief Robert is doing a very fine job. I also want to thank the Mayor and members of the Common Council for coming to see me.

Newsman: Earlier you were telling me about the work performed by the City Ambulance Corps. Would you expand on this?

Chief: I would like to say that when I sustained that unfortunate accident at police headquarters, it took the Ambulance Corps less than five minutes to arrive on the scene. I would like to say this much to residents of the city, that we are indeed fortunate to have a corps. It does outstanding work, a wonderful, wonderful job in our city.

Newsman: Chief Jones, it certainly is good to see you looking as well as you do and we all wish you a speedy recovery.

Chief: Thank you, Mike, and I want to thank you for dropping in to say hello.

Newsman: We've been visiting here at City Hospital with Police Chief Peter Jones who will be confined for possibly another two weeks. This is Michael Blake at Room 206. I return you now to our main studios.

This interview ran 2-minutes 30-seconds. It is important to note that in an interview at a hospital the interviewee, the Chief, was "on the mend" as the result of a broken bone. Except for the bone fracture, he was in excellent health. It is therefore permissible to ask him how he feels and how long he will be confined. Under no circumstance would it be permissible or in good taste to interview someone with a chronic illness or terminal sickness. The rule here is that only "on the mend" patients are candidates for taped interviews.



Go to Jail. Go directly to jail—if you want an interview with a jail guard. Cell blocks have very poor acoustics giving a hollow echo-sound to voices on the recording.



Bridge managers and toll collectors also make interesting interviewees. Here the author speaks with a bridge toll collector in an interview punctuated by the rush of cars and the ringing of toll registers.



The self-contained feature interview must be tightly edited. Often the best interviews are "produced" at the editing rack.

Upon arrival at the hospital I spoke with the Chief and made notes for the opener and closer. Next I mapped questions to ask on the basis of our general conversation. We then did an informal run-through of questions and answers. In cutting the interview I told the Chief that if either of us did not like the tape we would cut it again. This was said to put the police officer completely at ease.

The tape was perfect except that the Chief had long pauses before answering the questions put to him. The pauses were edited out. Also removed from the tape were long sentences extolling the virtues of the Ambulance Corps. It was good but much too long.

Let's examine another interview.

Newsman: This is Michael Blake. Today we're at the office of Town Assessor Harry Smith. In two weeks Mr. Smith leaves on active duty with his army reserve unit. Mr. Smith also served in the Second World War and in the Korean War. Well, Harry, what are your feelings at this point; are you at all bitter that you've again been called into service?

Assessor: No, I am not bitter, but I am not happy at the prospect of entering the army for the third time. However, when I took on the reserve obligation I realized that I would be the first to be recalled in the case of any emergency. I guess that emergency has arrived.

Newsman: Harry, when were you first called into service?

Assessor: I was first called in September of 1942. I served for 2½ years in the South Pacific. In the Korean War I was recalled to active duty in September of 1950. I guess September is my lucky month.

Newsman: Harry, I know that Mrs. Smith and the children are not happy in the prospect of your leaving home, but how are they bearing up now that you are almost ready to ship out?

Assessor: Naturally my wife is quite upset. Right now I'm still trying to impress on the children that this is not the usual two-week tour of duty and that I may be gone for an extended period.

Newsman: Actually for the children this will be your first time away from home?

Assessor: That's right. Patty is now nine years old. In fact when Patty was born I was on duty in California some three-

thousand miles away. And Billy, who is six years old, has never known his daddy to be away for any length of time.

Newsman: Harry, is there anything else you might want to say?

Assessor: No, except to take this opportunity to say so long for a little while to all my friends, fellow workers and associates, and all of the wonderful people I have met in the town during my two years as assessor. To those people, so long for a little while.

Newsman: Speaking for the folks at the radio station, and I think the general public, we all wish you good luck in this your third call to the service. And we hope that it won't be too long before you're back home again.

Assessor: Thank you.

Newsman: We've been speaking with Town Assessor Harry Smith who returns to active duty in two weeks along with his army reserve unit. This is Michael Blake at the Town Office Building, I return you now to our main studios.

This interview ran 2-minutes 50-seconds. With the assessor the questions were mapped as in the previous interview. The opener and close paragraphs were written out and we had an informal run-through. Because the assessor was very smooth in answering the questions the tape was almost perfect. There were only two spots which needed editing. Toward the end of the interview where he said "Thank you" he fumbled in trying to remember my name. He finally said, "Thank you . . . Mike?" Doubtful "Mike?" was removed. Also when giving the rundown of his service career the interviewee said, "I served for 2½ years in the South Pacific," but then added "with General MacArthur." It sounded all right when he said it but "with General MacArthur" seemed very awkward on playback. It implied that the assessor and the general together had won the war. The general was faded-out with a pair of scissors.

Here is a third example.

Newsman: This is Michael Blake. Today we're at the Lincoln High School at the office of William Brown, Director of Adult Education. We're here for answers, answers to questions about adult education or what one critic calls "new term madness." That is, the madcap frenzy by many adults to sign up for courses which are of doubtful worth—courses they probably never will complete. Mr. Brown, how many of the adults who register actually complete the studies?

Director: Well Mike, we feel that here at Lincoln we have been fortunate in having a very low drop-out rate. However, there is a sizable percentage in this school as there is in every school throughout the nation.

Newsman: Sir, looking over your list of courses offered this semester, I see courses in Arts and Crafts, Physical Education for Women, Golf, and Social Dancing. How do you qualify the spending of tax dollars on such courses?

Director: That's a good question and a point I would like to clear immediately with the general public. We and the State Education Department divide the courses into two categories—vocational and recreational. The courses you have named are of a recreational nature and must be self-sustaining; they must support themselves—no tax dollars are used to subsidize them. Other courses in auto mechanics, business law, and carpentry are vocational and do receive the tax-dollar support.

Newsman: Why are there so many drop-outs?

Director: Mostly it's poor planning on the part of the individual and the school administrators. The individual often makes a poor choice not being fully aware of what the course is really trying to accomplish. Then too, the students' new-term resolve often wanes when it is discovered that the learning process is sometimes long and tedious.

Newsman: In a nearby school system I know a woman, a homemaker, who has signed for a welding course. She told me that she registered "just for kicks." What is your reaction to this?

Director: Here is a perfect example of poor planning. The woman should not be in the course.

Newsman: Do you think she'll finish the course?

Director: It is very doubtful.

Newsman: Mr. Brown, what is the outlook for adult education?

Director: It is generally bright. More adults than ever before are taking advantage of what is a comparatively new concept. Because adult education on the grand scale is a new concept there is still much to learn about it by both the general public and the educators who administer the programs.

Newsman: Adult education. A new semester about to begin here at Lincoln High School and at high schools throughout the nation. We have been speaking with Adult Education Director William Brown. This is Michael Blake. I return you now to our main studios.

This interview ran 2-minutes 45-seconds. Of the three interviews it was the easiest to make because the interviewee was a very capable public speaker and completely at ease in front of the microphone. At only one point on the tape did he become tangled in his answers. This was in the second question. He not only became tangled but he also lost the tenor of authority in his voice. Realizing that I had a bad answer, I told him so right on the tape so as not to lose levels. I said, "Bill, you stepped all over yourself in that answer. I'm

going to ask the question again—and then give me a better and tighter answer." I did and he did. It was a simple matter to edit the original question and answer from the tape.

In making the SCFI there are certain rules to follow. 1. They must have a news peg even though the peg may be a little vague or contrived. 2. The interviews must be relatively short and should never exceed three minutes. 3. They must be tightly edited. There is no excuse for mistakes when there is time for both planning and editing.

It should also be remembered that you are in complete control in cutting the interviews. The people you interview may be experts in their own fields but you are the expert with the microphone. Let the interviewee understand this fully by telling him what *you* want on *your* tape. The microphone is a great equalizer between the interviewer and the interviewee and it should be used to full advantage—*your* advantage.

So now you know a little bit about making the SCFI. Now we discuss the merchandising of your product. Consult with the News Director and/or Manager of the radio station nearest your home. Go prepared with a sample interview, a tape which will prove some proficiency on your part. Also go prepared with an outline of what you propose to do. Let the station officials know that your feature interviews would be submitted on a regular basis of perhaps once or twice a week. Above all, be enthusiastic about what you propose to do.

It is also a good idea to present a list of possible interviews. Many ideas will occur to you as you scan the pages of your local newspaper. Your list of proposed tapes might include an interview with the postmaster on Christmas mailings, an interview with the owner of a newly-acquired home fallout shelter or an interview with the night desk sergeant at police headquarters. Interviews with bridge managers and toll collectors make great copy. You might also list possible interviews with any number of municipal and school officials



Michael Blake, the author, is the News Director at WLNA AM and FM in Peekskill, New York. He keeps well informed of local happenings which are of interest to his listeners.

on their return from national and state conventions they all attend. How about that book that's been banned in Boston? Interview your local bookseller about it and ask him about other books that have been condemned in the past.

The list of possible tapes is endless. At the beginning of the hunting season interview both hunters and your local game warden. Cholera epidemic in China? Sit down with your county health commissioner and ask him what cholera is?—is there any danger of the disease spreading to the United States?—to our county? When was the most recent case of the disease recorded in our country?

Not only can the local headlines of the day supply ideas for tapes but also the national and international stories. Russia has just exploded another superbomb—will this have an effect on our local crops? Will the fallout affect the milk supply? Ask your health commissioner or go to the county farm agent or the head of the grange and find out.

Soon ideas for tapes will come so fast and furious that you won't have time to cut them all. Driving home from the studios one day I spotted a man with a geiger counter surveying a rock formation. Because I always carry my tape recorder in my car I stopped and asked the prospector what he was doing? It developed that the man had no serious prospect of finding uranium but as some people carry cameras and others carry binoculars and others carry walking sticks (and others tape recorders)—this man carried a geiger counter. Why not?

Getting back to the merchandising of your product it would seem elementary to mention that your sample tape should be recorded at the minimum speed of $7\frac{1}{2}$ -inches. However, people not in radio often forget that this is the minimum speed of most studio playback equipment. It

must also be remembered that station equipment is single track which means that when you record on your dual track machine you must use a perfectly clean tape.

Another engineering phase of your project involves synchronization of your machine. Many recorder owners do not realize that their machines are really off-speed. Playback on a recorder on which the tape was cut does not pose a problem as a general rule. It is only when the off-speed recording is played back on another machine that the error is discernible.

Once you are given the go-ahead by the radio station you will want to check with the station's Chief Engineer. The engineer, usually a good natured fellow, will be most happy to check your recorder with his timing tape against the studio equipment.

And now the last and most important rule in your merchandising program. Although the station officials will probably provide that all of your tapes be submitted *on speculation*—you must demand and receive payment for acceptances. You must "do nothin' for nothin'" not so much for the money involved but rather because nothing will stamp you as a rank amateur more than "doing it for the experience" or "for art's sake." Remember that if your product has any worth it should be paid for. At first you might receive as little as two or three dollars a tape. The amount is not important but the principle of payment for your efforts is important and paramount.

Now it's up to you. I have given you the benefit of my experience with the *Self-Contained Feature Interview*. It's knowledge which came the hard way—by making mistakes. As you make progress with the technique you'll find that each interview shall become easier and easier to do. Get to work!



The WLNA studios in New York's Hudson River Valley—not unlike the radio station in your own community. Local stations like to broadcast local news and many are looking for taped items, such as interviews, to use in their programming.

How Your Recorder Works

by Mark Mooney, Jr.

Part Two: Tape Drive Mechanisms and Methods

Drawings courtesy Howard W. Sams & Co. Reprinted from Tape Recorder Manual, Volume 3, Copyright 1959 by Howard W. Sams & Co.

IN the first part of this series of articles, which appeared in the last issue, we discussed the various types of tape transports now in use and also the kinds of motors most often used for powering them.

In this installment we will be considering the tape transport itself and the component parts which go to make it up.

It is the function of the tape transport to move the tape, rapidly in the case of fast forward or rewind and with precision and extremely even speed in the record and play modes. It must not impose undue strains on the tape, must provide an even and proper wind of the tape on the reels and be both reliable and easy of operation.

The basic parts of the transport are: the motor, the drives associated with it to transmit its energy to the parts which move the tape, the mechanism connecting the controls to the working parts, the feed and takeup reels and their associated clutches or drag elements, the tape guides, the heads and pressure pads, capstan and roller, and shutoff devices.

All of these parts have to do with the *mechanical* operation of the recorder. While they may be interconnected by means of switches with the electronics, actually the electronics are not part of the tape transport and will be treated separately later.

There are a number of ways in which the energy of the motor is transmitted to other parts of the transport. Since the motor runs at a much higher speed than is useful elsewhere in the machine, its speed must be reduced. This is accomplished in various ways depending upon the design of the recorder.

One method is the rim drive where the steel motor shaft bears against a rubber-tired flywheel. Another method is to use an idler between the motor and the capstan flywheel. Still another is the use of belts, either flat composition material or round rubber. If the motor speed can be reduced sufficiently, the capstan may be a part of the motor shaft.

In almost every case a flywheel is used to smooth the flow of power from the motor and in some cases the capstan is mounted as part of the shaft of the flywheel. Thus the energy to pull the tape past the heads is made as smooth as possible.

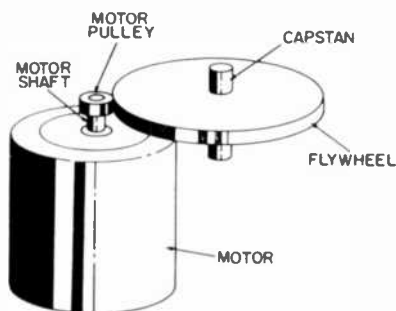
In machines in which the rim drive is used or which employ an idler puck, one of the surfaces is rubber to give the necessary friction for the drive. This "tire" after being cemented to the perimeter of the wheel is ground so that it is concentric with the shaft. The tires are of either natural or synthetic rubber of a hardness necessary to give the amount of friction desired. Should this tire become damaged, it is usually better to replace the entire wheel rather than attempt to make a repair on the tire.

The chief form of damage is through leaving the machine in the play or record position instead of the stop position when it is turned off. This allows the rubber rim to remain in forceful contact with the steel drive shaft or steel flywheel and a flat will develop if it is left in this position too long.

When the recorder is started up, this flat causes a thump each time it contacts the shaft or flywheel and, in addition to the noise, it also causes a variation in the speed of the capstan which in turn causes the tape speed to vary and causes wow. Sometimes it is possible to work the dent out of the rubber by letting the recorder run for thirty minutes or so. If not, the only solution is to get a new wheel.

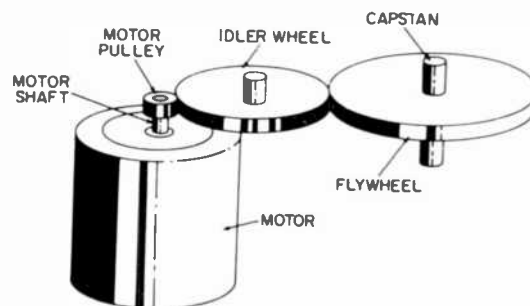
Rubber tires will also, over a period of years, develop a glazed surface which reduces the amount of friction available by permitting slippage. This glaze may sometimes be removed by holding a piece of fine emery paper or sand paper against the tire as it revolves. A typewriter eraser of the abrasive variety may also be used.

Almost every tape recorder instruction book cautions about oiling the machine. Either it is not necessary at all because of the use of bearings which never require oil or oil must be applied sparingly. The word "sparingly" is a



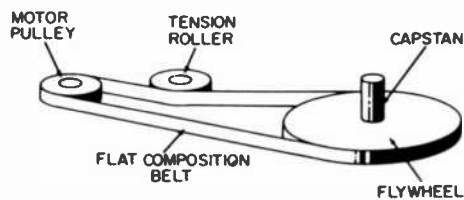
Rim drive system.

The rim drive system employs a motor pulley which runs against the rim of the flywheel bearing the capstan.

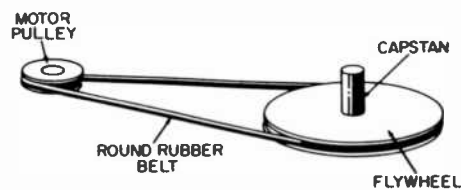


Idler drive system.

The idler drive system, which is a very common type of drive, interposes a rubber-tired idler between the motor pulley and the flywheel.



Composition belt drive system.



Rubber belt drive system.

In many cases belts are used in recorders instead of the rim or idler drive systems. The belts may be flat and of composition as shown at left, or of round rubber, as shown at right. The flat belts require the use of a spring loaded tension roller to keep them tight. The rubber belts do not need such a roller but they can become loose through old age when the rubber loses its snap.

key word, for oil will spread over the surfaces of the steel parts and get on the rubber rims. This will reduce the friction and interfere with the drive.

If the drive system has been subjected to over-oiling the parts must be cleaned thoroughly with carbon tet or similar solvent and care must be taken to make sure that none is left. If the machine is badly saturated it will be found best to replace the wheels rather than attempting to clean them up.

The rim and idler drives are widely used and are efficient provided proper care is given—which includes not keeping the machine in the record or play position unless the motor is running and avoiding over-oiling, as mentioned above.

There are two types of belts used in recorders which do not employ the rim or puck drive systems. These are either flat composition belts or round rubber belts.

The composition belt runs between the pulley on the motor and the flywheel and generally has an idler which is spring loaded and which runs against the belt to keep it taut. Provided the belts are properly made the system is a good one and is used on some professional recorders.

The second type of belt used is the round rubber belt. Because this supplies its own tightening effect, the idler is not needed. These belts generally give satisfactory service unless, again, oil manages to reach them and cause them to slip. Sometimes, when spotty slippage occurs, the belt will wear badly and quickly become useless.

Old age also affects the belts and they tend to lose the liveness and become loose, causing slippage and uneven pull of the tape.

The third method uses neither belts nor drive pucks but instead drives the capstan by having it as part of the motor shaft, usually a flywheel to take out motor speed variations is incorporated.

It is the sole function of this motor to drive the capstan and pull the tape, thus for rewind and fast forward, as

well as takeup and feed, a second or even a third motor is required. Because the motor is operated at a lower speed than with other types of drive it generally has to be larger and heavier or the capstan shaft diameter must be greatly reduced. The use of separate motors for capstan, feed and takeup is an excellent system although it does add to both the cost and the weight of the machines.

The heart of the recorder is the capstan and roller for it is here that the speed is determined and also where any slippage occurs with the tape.

The tape is squeezed by the rubber roller against the steel capstan and it is this pressure which provides the drive for the tape. Since the roller is of rubber, the same cautions and troubles can happen to it as with the rubber tires in the drive system. Prolonged pressure against the capstan with the machine not running will produce a flat on the roller which will produce wow in recording or playback.

In addition to this, the capstan and roller may also accumulate a coating of oxide particles which, if left to accumulate, will impair the performance of the machine.

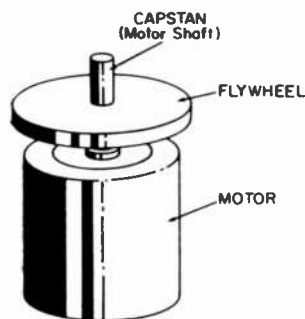
Most recorders produced today have two, or perhaps three speeds available. There are a number of ways in which the tape speed may be varied. The first is by altering the size of the capstan. This method is used on some professional type machines which have a tapered sleeve inside the capstan which fits over a tapered capstan shaft.

A second method is to do the job electrically by switching the field of a synchronous motor by changing it from a four-pole configuration running at 1800 rpm to an eight pole which runs at half that speed. This method is mostly confined to the professional machines which use the synchronous type of motor for their driving power.

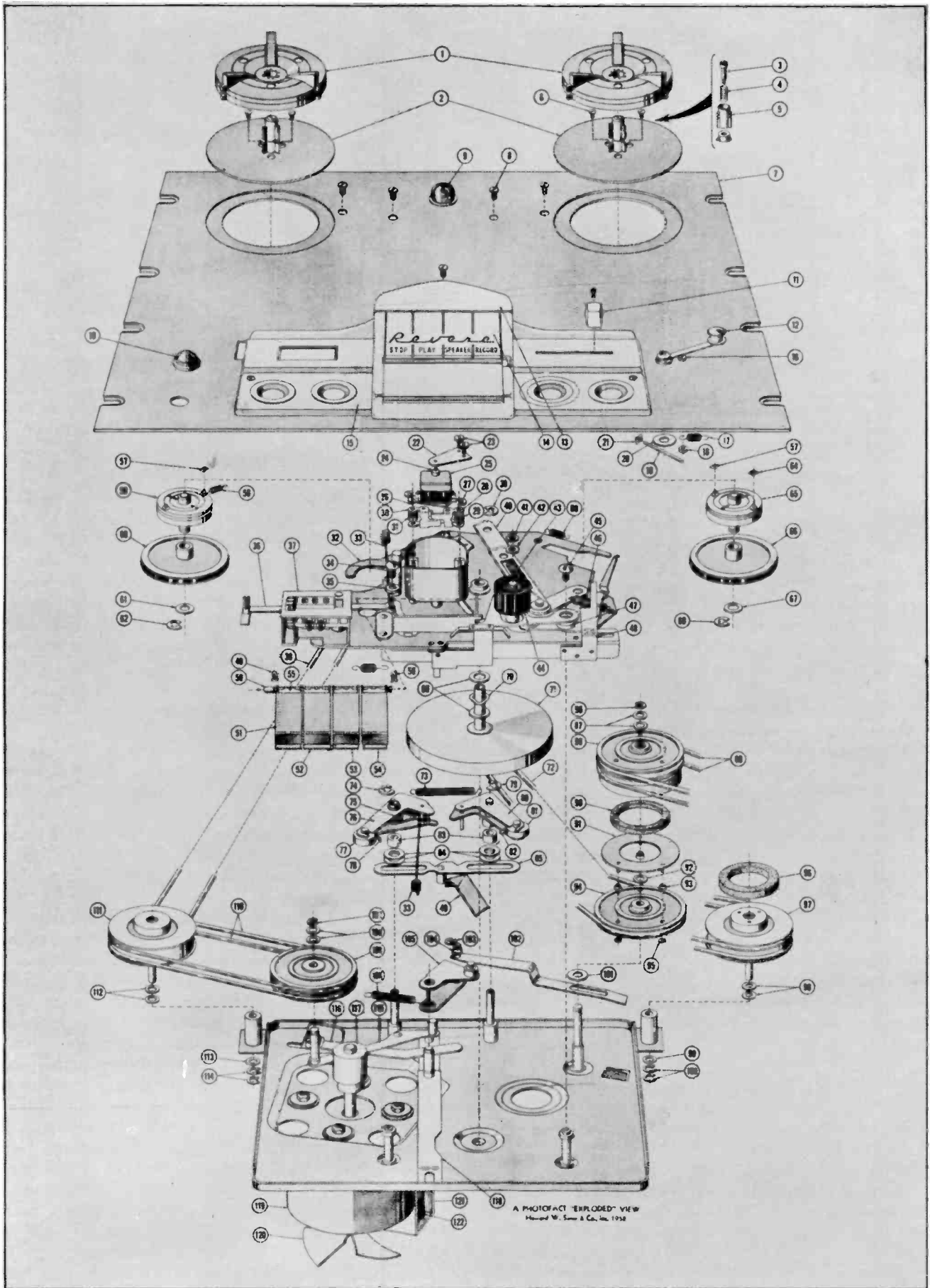
Most home recorders accomplish the speed change by shifting the position of the idler puck which lies between the motor and the capstan flywheel. The motor shaft has two diameters turned on it. When the puck is in contact with the larger diameter it is rotated at a greater speed and produces the higher speed of which the machine is capable, usually $7\frac{1}{2}$ ips. When it is shifted in position so that it contacts the smaller diameter on the motor shaft, its speed is reduced to the slower speed of the recorder, usually $3\frac{3}{4}$ ips. A third diameter may also be present on the shaft which would give the $1\frac{1}{8}$ speed.

Usually the mechanism in the recorder is so arranged that the idler wheel is lifted clear of both the flywheel and the motor shaft and then set down against them again in the new position. In recorders using this type of motion the idler is protected against nicks occurring in its rubber rim. Other machines simply slip the idler back and forth between the two diameters without lifting the rim from the

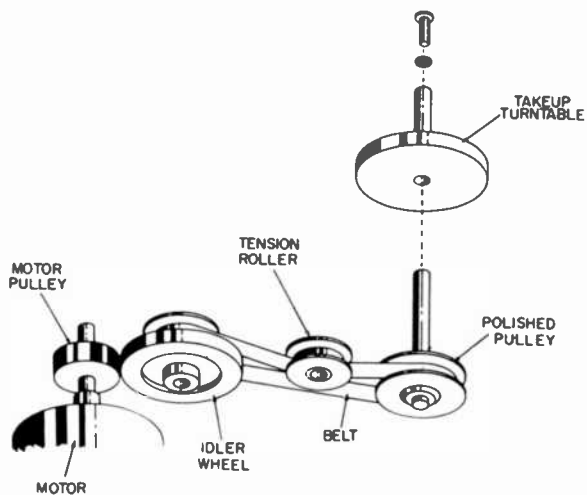
Direct capstan drive system.



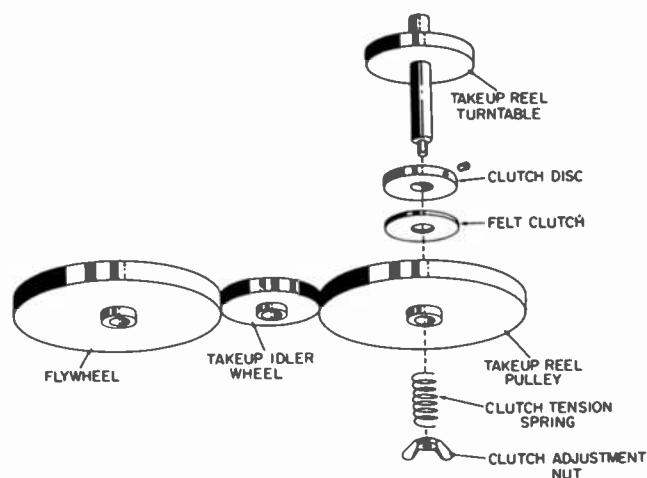
If the recorder motor is capable of being run at slow speeds and still maintain sufficient torque then the capstan can be part of the motor shaft and no belts or pulleys are needed. This system is generally reserved for use with synchronous motors which can be changed in speed by electric switching. This method also necessitates the use of other motors for feed and takeup reels.



An exploded view of a Revere tape recorder. Careful study of this drawing will reveal how the parts are laid out and the functions of each can be seen. A Photofact exploded view. Copyright Howard W. Sams & Co. 1958.



Slipping belt drive system for take-up reel.



Slipping clutch drive system for take-up reel.

Since the take-up reel must revolve at varying speeds, depending upon the amount of tape on it, it cannot be directly driven. Two methods of providing the necessary drive are shown. At left is a slipping belt drive where a flat belt is permitted to slip over a highly polished pulley and, at right, a slipping clutch type of takeup which employs a felt washer to permit slippage between the two discs. A third method, not shown, uses a stalled motor.

shaft or flywheel and this exposes the idler to possible damage if the manufacturer's instructions regarding speed shifts are not followed. As with most mechanisms of a fairly complicated nature, it is best to follow the manufacturer's recommendations to prevent difficulty. If the instructions call for shifting the speed only when the recorder is on, then do not attempt to make the shift with it off or trouble may result.

Speed changes are also accomplished by shifting drive belts from one pulley diameter to another. The ratios are usually on the order of two to one thus providing two speeds on the machine, one of which is half the other. Again, the manufacturer's directions must be followed when speeds are changed.

One of the most complicated tasks on a tape recorder must be accomplished by the take-up reel. As the tape is pulled by the capstan and roller at a constant speed past the heads, it must be wound up on the take-up reel, usually the one on the right side of the deck.

The difficulty arises from the fact that when the tape is started on the reel hub it winds about a diameter of two inches. When the take-up reel is full the diameter is more than six inches. It can easily be seen that if this reel were to have a constant speed it would go either too fast or too slow for parts of the tape as the wind-up diameter varied.

The answer is found in two methods, one electrical where a separate motor is employed for the take-up reel and the other mechanical in which slippage is employed.

This takes the form of a clutch which consists of a disc driven at a constant speed by belts or an idler wheel. Another metal disc is placed above this one with a piece of felt between them, like a sandwich. As the lower disc revolves at a constant speed, the motion is transmitted by the felt to the upper disc, however, the felt permits the upper disc to slip and in so doing maintains about the same tension on the tape throughout the winding process. It also permits the speed of the reel to vary, turning it rapidly when the diameter of the tape on the reel is small and slowly when the tape diameter becomes large. The

amount of pressure between the two discs and the felt is usually adjustable by means of a spring loaded nut.

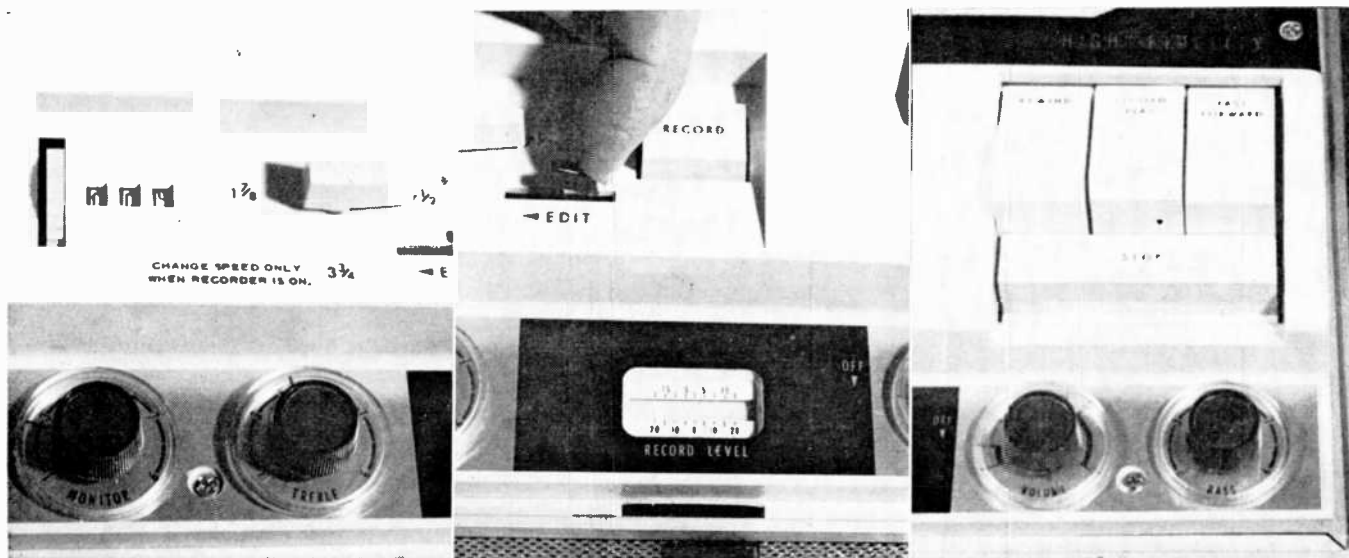
It is seldom realized that tape is under far greater tension when there is little of it on the hub than when the reel is full but this is so. When the tape on the reel is of small diameter the lever arm is short and a greater amount of torque is necessary to turn it. This is one reason the reels with the larger 4 inch center hub have come into use. By providing a larger hub in the middle, the lever arm is longer and the tape is subjected to less stress than otherwise.

The other method used principally in the less expensive machines is to secure the necessary slippage by driving a belt around a very highly polished pulley. The belt is usually of the flat composition type or may be cloth of some kind. As the amount of tape on the reel becomes greater the belt slips more and more. Both the belt and the slipping clutch are subject to some variations due to atmospheric changes.

In machines using three motors, one each for the capstan, take-up reel and feed reel, the take-up reel motor is not permitted to get up to speed but is run in a stalled condition. This permits a steady pull on the tape and the correct tension is obtained throughout the winding process.

The problem with the feed reel, or supply reel is a simple one. It needs merely hold a back tension on the tape to insure that the tape is not spilled in the process. Some machines, which do not use pressure pads to hold the tape to the heads depend upon this back tension to maintain tape contact and, in such cases a slipping clutch on which the tension can be adjusted is employed.

In fast forward or rewind, the purpose is to move the tape as rapidly as possible from one reel to the other. The regular tape moving mechanism of the recorder is generally disengaged and the reel is driven through an idler or belt directly from the motor. In either mode very little back tension is applied to the tape. The purpose here is to give an even, soft wind. If the tape winds on the reel too tightly because of too much back tension then it may suffer some deformity.



The mechanical controls on a Webcor recorder. Speed change is at left and note that speed should be changed only when recorder is on. Center is the edit key which lifts the roller from the capstan and stops tape motion and the record interlock. At right are the tape motion controls. The lower row of controls operate the electronic functions only and are not considered part of the tape transport itself.

In either the fast forward or rewind mode of operation, the tape should ride free across the heads and have as little contact with them as possible. On some recorders an automatic shutoff switch is employed which will shut off the recorder should the end of the tape come through or the tape break. The greatest danger of tape breakage lies in sudden stops from fast forward or rewind, especially if any tape slack exists between the two reels.

The other remaining important parts of the tape transport are the brakes and the head and pressure pad assembly.

The brakes, generally, are pads of felt or leather which are pressed against the reel spindle discs when the stop button of the recorder is pressed. The braking must be positive yet not so severe that the tape is snapped. It is also necessary that the feed reel be stopped first to prevent tape spillage. On units with three motors, electro-dynamic braking is used and in this method the motors are stalled to provide the braking action.

The pressure pads which hold the tape against the heads are generally of felt and are held on spring-loaded arms which are moved out for insertion of the tape and when the machine is in fast forward or rewind. The pads are subject to both wear and the accumulation of dirt or waxes which make them become glazed and produce a high-pitched mechanical squeal as the tape passes through.

Pressure pads are easily replaced and they should not be permitted to become too worn before replacement is made or their uneven pressure may cause uneven head wear. They are usually attached to the spring fingers with cement and if a replacement is made, only enough cement to hold

them should be applied. More than this may work up into the small piece of felt and cause it to become hard.

Pressure pads which are improperly adjusted can cause excessive tape tension in addition to increasing head wear.

Good contact of the tape with the heads is a necessity for without it there is a distinct falling off of the higher frequencies and some loss of volume.

Tape guides are found on all recorders and the purpose of these is to prevent the tape from weaving up and down and to straighten its path to and from the heads. These are usually very smoothly finished and carefully made so that the correct clearances will be maintained. They should be kept free from dirt and should be gone over with a cleaning solution when the heads are cleaned.

Some of the professional recorders also have as part of the tape guiding system a stabilizer which is a rotating part about which the tape is led before it goes to the heads. This unit evens out any tensions caused by sticking tape, etc., and aids in delivering the tape at constant tension to the capstan and roller.

All of the mechanical functions of the tape transport are activated by either levers, knobs, buttons or keys. In some recorders the keys are merely switches, the actual moving of the various levers and drive parts of the tape transport being accomplished by the use of solenoids. The use of these heavy duty magnets permits great flexibility of operation and, indeed, permits operation of the recorder at a distance or by a time clock to tape programs without an operator being present without leaving the recorder in the record position which might cause flats.

(next month—tracks, heads and preamps)

TAPE AND THE THEATRE

by Don Dunn

. . . . tape the sound effects and background music for your next dramatic presentation.

BA-ROOOM!
Crack!
Screeeeeeeeeeech!
Brring! Brinnnggg!

Fascinated by sound? Constantly surprised by the diversity of effects that are produced by the motion of air against the inner ear? Awed by the rumble of thunder that grows from a distant mutter to an overhead growl? Made melancholy by the long, low lost whistle of a far-off freighter? Delighted at the tinkle of fragile glassware, the gurgle of pouring champagne?

I'm one of those people who can quickly answer each of the above questions in the affirmative, one of those people who find pleasure in discovering new sounds and bringing them to others, in collecting roars and rattles and squeaks the way some persons collect stamps or butterflies or matchbooks.

There was a time not long ago when soundophiles had an outlet for their creative talents. The outlet, of course, was radio. (You remember radio? It's like television, only with the picture tube burned out.) Armed with his coconut shells, his sheet of crumpled cellophane and his shot-filled balloon, radio's sound effects man could reproduce the clatter of horses' hooves, the snap-crackle of a blazing

fire and the murmur of the surf before the network microphone.

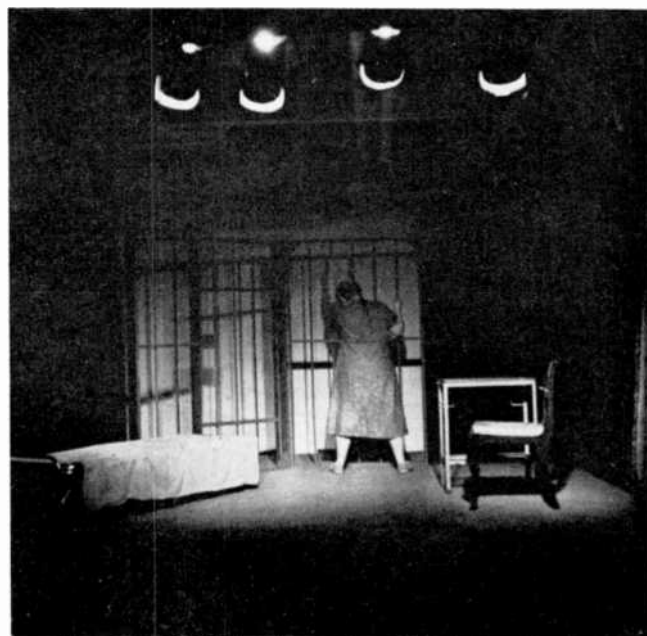
Two things eventually made the job of the sound-effects man obsolete. One was the demise of radio—as it existed during the '30's and '40's—in the face of television's competition. The other was the advent of the tape recorder, which made it possible for the actual sounds of horses hooves, blazing fires, murmuring surf and thousands of other happenings to be captured forever and recreated at will.

As a visual medium, television has never relied strongly upon sound effects to create a mood or further a story-line. If music is employed, union rules generally necessitate "live" scoring, hence, recorded music has little place in tv.

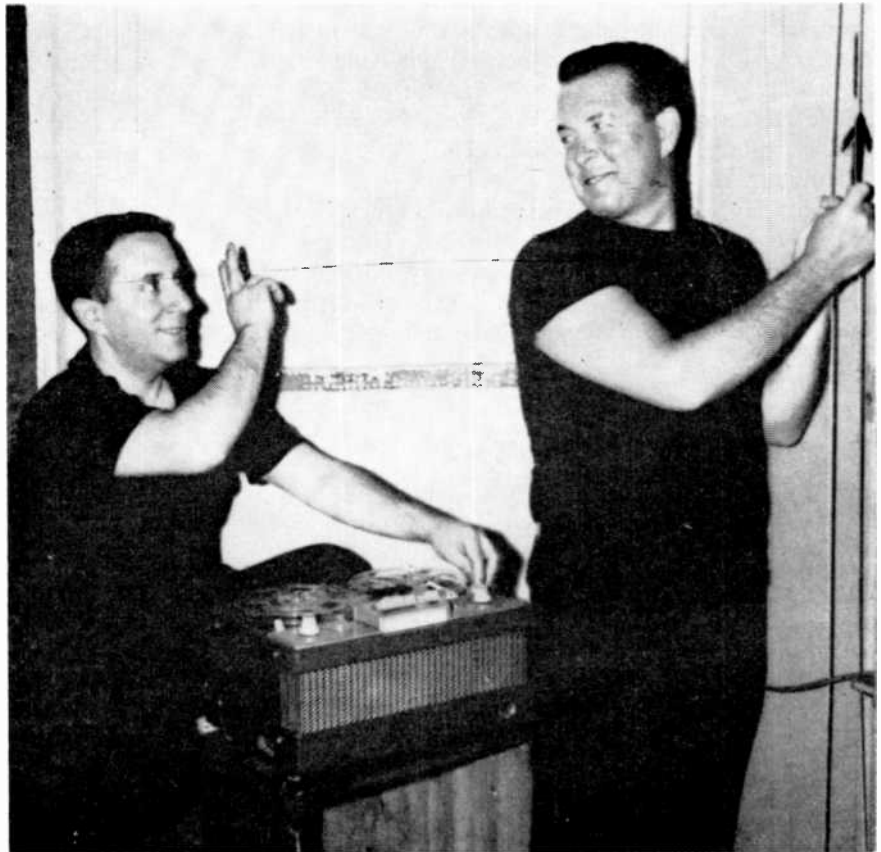
As any collector most enjoys his collection when it is shared with someone, so the student of sound can find pleasure when others appreciate his efforts and abilities in capturing life on tape. Still, a few persons are content to sit patiently while a loudspeaker buzzes, roars and hisses. Where, then, can the sound-collector display his wares?

The obvious answer: a "little theater" group.

Sparked by the booming "off Broadway" movement, amateur drama is blossoming across America today. Nearly any community of several hundred people or more has



Spotlight on drama—taped music, sound effects heighten drama at Theatre-In-The-Cellar suspense productions. Try to imagine a motion picture or dramatic show without music and sound effects and you would come up with a dull production indeed.



Backstage—sound-man fades overture as curtain-puller awaits cue.

its own little group of actors—usually made up of members of the PTA, the Ladies' Aid Society or what-have-you.

Experience has shown that time and again such a group will choose a play, cast its actors, assign a director, organize scenery and property crews and go into rehearsal—before someone notices that on page 45 of the script, the offstage sound of an erupting volcano is called for. "Wow!" says Mrs. Amelia Witherspoon, director, "how can we do that?"

"I know," pipes up Effie Benson from the corner where she's been sewing a costume for the *Island Princess*, "we could have somebody blow up a paper bag and pop it. The audience will never know the difference."

Unfortunately for Mrs. Witherspoon and her fellow players, the town's audience isn't quite that unsophisticated. The roar of laughter that greets the volcano's "Pop!" is just enough to ruin a highly dramatic presentation. "But—" sobs the director afterwards, "we didn't know any other way to make a noise."

With such occurrences happening almost daily, there are ample opportunities for the man or woman who has a tape recorder, an interest in theater, a certain amount of pride in doing a highly complicated job well—and who delights in working with others.

Make no mistake: there's nothing simple about "running sound" for a theatrical presentation. The task calls for split-second timing, patience and sheer ingenuity. It also involves long hours and careful planning. But it pays off—usually not in dollars, but in pleasure and mutual satisfaction.

Today's theatrical sound duties are in no way as complex as they once were, before the advent of tape recorders and sound-on-disc effects. Let's go back to 1931, to the Broadway production of *The Ghost Train* by Arnold Ridley. A highlight of the mystery drama was the appearance, just offstage,

of a roaring, hissing, smoking locomotive. Audiences sat spellbound in wonder that the play's producers could materialize at will an actual train, not knowing that the "train" actually consisted only of some flashing lights, a few puffs of smoke and realistic sound effects. The sounds were produced—according to Samuel French's authorized acting edition of the script—by the following:

One engine bell; 1 garden roller propelled over a series of wooden struts screwed to the stage, 30 inches apart; 1 18-gallon galvanized iron tank; 1 thunder sheet; several cylinders of air; 1 bass drum; 2 side drums; 1 small and 1 large padded mallet; 1 wire drum brush; 1 milk churn; 1 medium mallet; 1 pea-whistle; 1 train whistle (for mouth); 1 whistle on air cylinder, and 2 electric motors.

In addition to the equipment, seven stagehands were necessary to produce the noises of a train pulling into a station, stopping and starting up again. The script directions read as follows:

"On rise of curtain, man rings signal bell. Two men beat on the galvanized tank and bass drum gently, gradually increasing in volume. Then the motors start, along with a rhythmic brushing of the side drum with the wire brush, and another man rumbles the thunder sheet. Another releases air from a cylinder, and as the total volume of sounds increase, another man starts to pull the roller over the struts as rapidly as possible, gradually slowing. When noise is at its height, all stop dead, except the cylinder man, who continues to blow off air. While train is in the station, Station-master shouts 'All change! All change!' while one man repeatedly beats the milk churn with its lid. He stops as Stage Manager blows pea whistle. Stage Manager then grasps medium padded mallet and beats second side drum one beat. Then another beat, then another, gradually increasing in

pace and diminishing in volume as train is supposed to leave station. Simultaneously, and keeping in time with him, other men give shakes to the thunder sheet, give puffs of steam, give beats on tank, start motors and start the roller. The whole success of the effect depends on each unit working together to achieve the desired rhythms."

Hmmm!

Unhappily for the stagehands' union (which endeavors to keep as many men employed as possible), but happily for the amateur theater, it's no longer necessary to have as many persons backstage producing sound effects as there are actors in the play. If you want an approaching train nowadays, you



drop a tone arm on the proper groove of a sound-effects record and you have your train. The same with a jet take-off, a docking steamboat, artillery fire, a roaring crowd and many more. Discs of numerous sound effects are available from many sources, including companies that specialize in providing sounds for broadcasting and theatrical purposes, as well as those who have prepared novelty demonstration discs for gauging the reproductive abilities of high-fidelity equipment.

In theater, however, a tape-recorder is more than an adjunct to disc-recorded effects: it is a "must-have" piece of equipment, as important as a stage itself, or lights, or scenery.

First of all, any recorded sound effect on a disc will immediately be transferred to tape by the right-thinking sound man. Once on tape, the sound is virtually damage-proof. There need be no fear of dropping the disc and breaking it, or of scratching it with a dull needle.

Next, there is the ease of cueing that is possible with tape, but often impossible (when you're working in a dimly-lit booth under the stage apron) to achieve with discs. Anyone who has ever tried to drop a microscopic tone-arm stylus onto the proper band of a long-playing phonograph record will understand how much simpler it is to press a tape machine's "Start" button in order to feed a sound into the air.

Thirdly, a tape recorder can be used to obtain sound effects that are not immediately available on records. Do you need an offstage door slam? Turn your recorder on, plug in your microphone and slam a door. Ringing telephone? Set up your machine and call a friend. Have him ring back, after you've explained that it might take a while for you to answer as you'll be in a taping session. Need gunshots, machinery noises, motors? Experiment with a leather cushion or briefcase slapped with a ruler for the shots . . . an egg-beater



Need a ringing phone in your dramatic presentation? Tape it right at home (top) and play it from the wings (bottom). Many of your needed sound effects are at your fingertips. If you can't get the real thing, simulated sounds do just as well.

rotated near the microphone for the machinery . . . or an electric fan for the motor.

There are hundreds more. A running water tap can be amplified to sound like a waterfall. Traffic noises and racing car motors can often be picked up simply by holding a microphone out of a front window. Crunch a wooden berry-box near the mike and you have the sound of a collapsing building. Horses, carriages, planes can be recorded almost at random from tv programs. For crowd noises, a group of actors can often be rounded up after a rehearsal, and coaxed into shouting "Storm the Bastille! Kill the umpire! Long Live England!" in a discordant jumble of voices, while you unroll.

Or, let's take music. Almost any play, whether Shakespearean or Tennessee Williamsean, can be heightened in theatrical content by a judicious use of music—both as an "overture" and as "effect" during the play itself. The selection of proper mood music in itself is an art. The piece chosen and the instrumentation must "fit" the play: it's not enough to use fast music for a comedy and slow music for a drama.

One point about theatrical music is that it should not be familiar to the audience. Play *Old Man River* to preface a southern drama and you're likely to send the customers away wishing they had seen "Showboat." Use the *William Tell Overture* before an English period piece and The Lone Ranger will be in everyone's mind.

And here's where your tape recorder can create miracles.

You need some unusual-sounding, interesting melodies to lead into a mystery or heavy drama? Make a tape of a theme by Ravel or Haydn (or your favorite composer) played on a record turntable *at the wrong speed*. Try a 33 1/3 disc at 45 or 78, for example. Record with your tape machine running at 7 1/2, and then play it back at 3 3/4. You might have to experiment for a while, but the music that results is often exciting and completely different from anything your audience has ever heard. You'll have pleasure, too, in producing what is theoretically an "original" musical composition.

A few technical details: Don't try to run sound without at least two speakers—one to feed music into the auditorium or seating area, the other backstage to produce sounds that are part of the play themselves. Don't try to get away with only the speakers in your tape machine—the overture music would seem muted and tiny through the front curtains, and the one sound source would be quickly located by the audience, which would then have a tendency to identify later sound effects as coming from the same source. This identification process can be enough to ruin your previous efforts at creating and locating sound effects.

If you don't have an auxiliary speaker to jack into your recorder, insist that the dramatic organization spend enough money to get a suitable one. An ideal set-up, of course, calls for one or two out-front speakers for music before the curtain and between acts, and for an additional speaker on each side of the stage. Depending on the complexity of sound effects for the show, more backstage speakers can be used. The average group should be able to "make do" with one speaker out front, another backstage at one side and the recorder (with its speakers) backstage on the other side.

Once the curtain is up, make sure the out-front speakers are disconnected. Otherwise, you're likely to have doors slamming, hoofbeats and gunshots appearing right out over the heads of your spectators.



Theatrical music is taped from disc played at wrong speed for unusual effect. Classical music is especially good for this sort of tomfoolery.

The eyes of those spectators can play tricks highly helpful to a sound man. Say a telephone is supposed to ring on stage, but you play the sound of a ringing phone *offstage*—15 feet from the telephone instrument on the set. No matter—the sound will appear to the audience to come from the telephone. No heads will swivel toward the wings where you are operating your tape recorder. You don't believe it? Try an experiment: watch a person talk or play an instrument on television. You know the sound *isn't* issuing from the person's mouth or from the instrument, that it's coming from a speaker several feet away from the picture—but the effect is to the contrary. On stage, it's much the same.

But, you say, I don't have time to get involved with a play. Don't they rehearse for weeks on end? The answer is yes, so far as the actors and director are involved.

For sound, it's generally only necessary to attend the last few rehearsals before the performance. Of course, you'll get together with the director before he goes into rehearsal and discuss the sound effects that will be needed, the type of music required according to the kind of production being done and how your recorder and speakers will be set up. During the next weeks, the sound man is often on his own to come up with the necessary noises.

At the final rehearsals, volumes can be set and speakers positioned. The director provides the sound technician with a script that can be marked for cues. The technician has already put his music and effects on one reel, spliced carefully with lengths of leader between each sound. (Use *long* lengths, or you're likely to get a ghastly car crash on the heels of a ringing phone.) The sound man makes up a cue sheet for himself, numbering the sounds in order and indicating details such as which speaker the sound comes from, what the volume control settings should be, etc. If the pre-planning is done properly, the sound man's job is an easy and delightful one.

His reward might only be a line of type in a program and an invitation to the cast party, but he'll have a lot of fun being heard and not seen.

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STAFKSTED

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THE RCA Victor Cartridge Tape Recorder is of a size compatible with the cartridge. It is small in dimensions and weighs only a trifle over 13 pounds.

The case is of high impact plastic and is sturdy and able to take normal usage without showing signs of wear or cracking.

The inputs and outputs are all grouped on the left side of the machine and include: a speaker switch which cuts the set speaker when the unit is connected to an external amplifier-speaker; an output socket which connects the output of the preamp

to an external amplifier or hi-fi system when desired; an input socket for recording from a radio or phono or another recorder, a mike jack and the on-off volume knob.

The tape motion controls are on the top of the deck. At the rear is the speed control which offers two speeds, $3\frac{3}{4}$ and $1\frac{7}{8}$ ips and at the front, left, the record switch. This cannot be operated if the cartridge in the machine has the "H" arrangement broken out, thus it is impossible to record over an already recorded cartridge accidentally. On the right is the rewind-stop-play switch. There is no fast forward on

the machine and should it be desired to advance the tape rapidly, the cartridge can be flipped over and the rewind used to move the tape.

In the center of the deck is the track switch which allows the selection of tracks 1 or 2—this is further subdivided into A-1, B-1 and A-2, B-2 depending upon which side of the cartridge is up since the machine records and plays back from all four tracks (monophonic model). Immediately in front of the track selector switch is the level indicator.

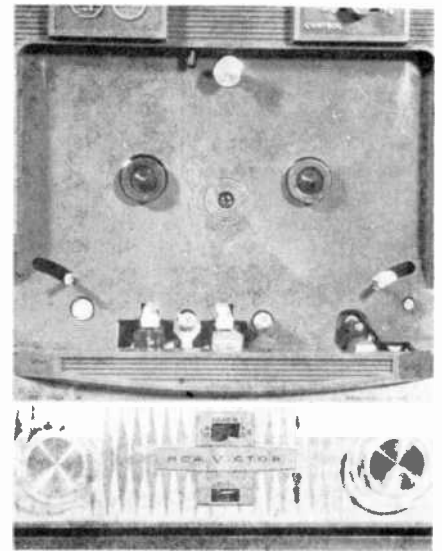
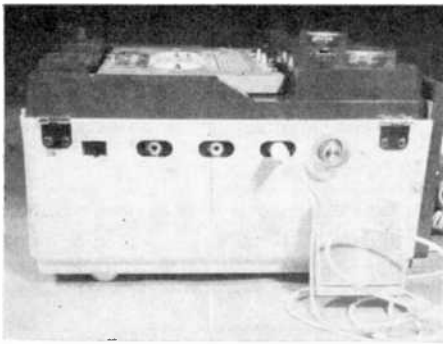
The power cord, mike and its cord and the accessory cord for making connections to an external source for either recording or playback, are held in a plastic case which sets on top of the deck when the unit is being transported. The whole is very compact and well planned, making a neat and easily carried unit.

To record, the cartridge is placed on the machine, the rear end being inserted first and then the cartridge is brought down flat on the deck. The record knob is turned and held with one hand while the record-stop-play switch is turned to the play position. This will lock the record knob in place and the unit will record until the right knob is turned to the stop position.

When the end of the tape is reached the machine will automatically shut



The cartridge tape recorder is small, measuring only 7 x 10 x 11 inches. The case is grey plastic with a black front grille and a spring-loaded handle.



Left: inputs and outputs are grouped on the side of the case. From left to right: speaker switch, output, input, mike socket and on-off volume knob. Right: cartridge slips in place on top of case centering slot over the pin in the rear of the cartridge well.

off and return the knob to the stop position. If the machine is in record, it will also return the record knob to normal.

To rewind, the knob is turned to rewind and, again, the tape will stop automatically when the end is reached.

The four tracks are utilized by recording with the track selector switch in the 1 position then flipping the cartridge and recording again. The

cartridge is again turned over and the track switch shifted to the 2 position and the process repeated.

The same machine is available in a stereo model and is almost identical in appearance and size except that it has dual mike input and output sockets and also has a tape index counter and a dual level indicator.

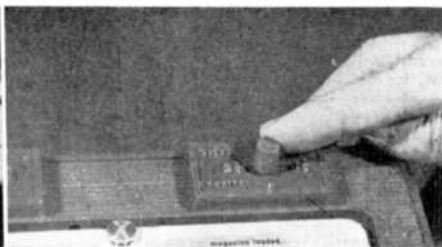
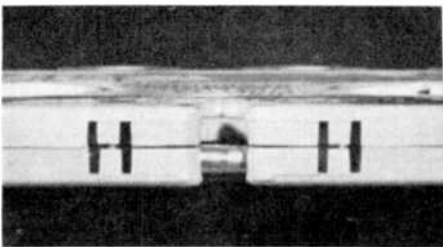
The model which we tested was the monaural model. We found that it

While machine is made for cartridges, it will play 3" reels with the use of an adapter. Shutoff levers can be seen middle right and left. Lower left is record switch and lower right rewind-stop-play control. Center items are track selector switch and level indicator.

worked smoothly and no difficulty was encountered in any phase of its operation.

Recordings were made using the microphone and also from FM radio using the input jack. In the latter case, the 3¾ ips speed was used and the tape was played back through a hi-fi system. The results were more than expected and were very good.

The unit represents good value for the price asked and if you are considering a cartridge unit you would do well to look this one over.



Left: "H" shaped arrangement is found on cartridges intended for recording. After recording these may be broken out to prevent the cartridge being recorded again. Recorded tape cartridges do not have H arrangement. Cartridge may be recorded upon again if H is not broken out or if hole is covered with adhesive tape. Right: speed selector switch.

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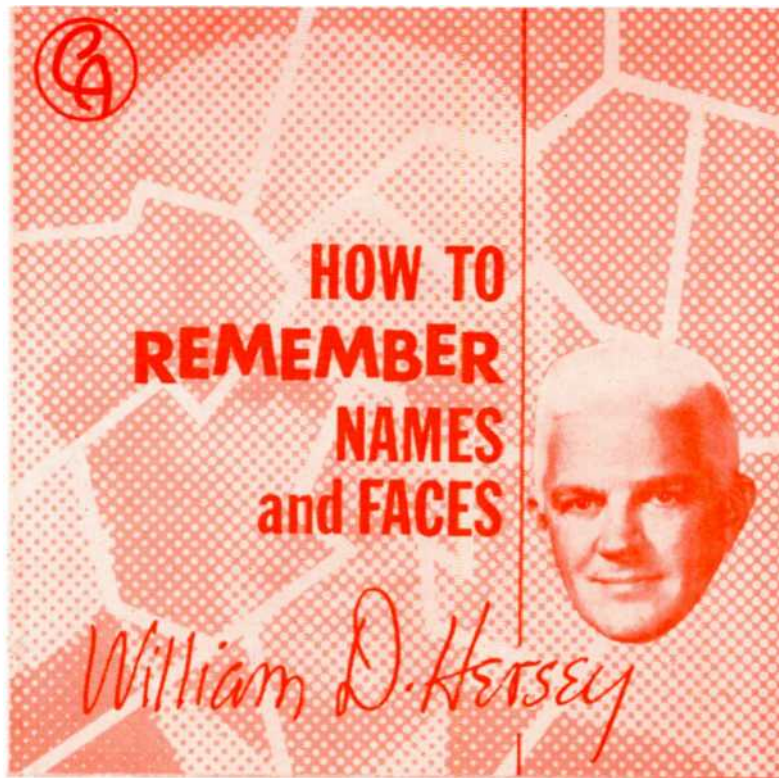
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