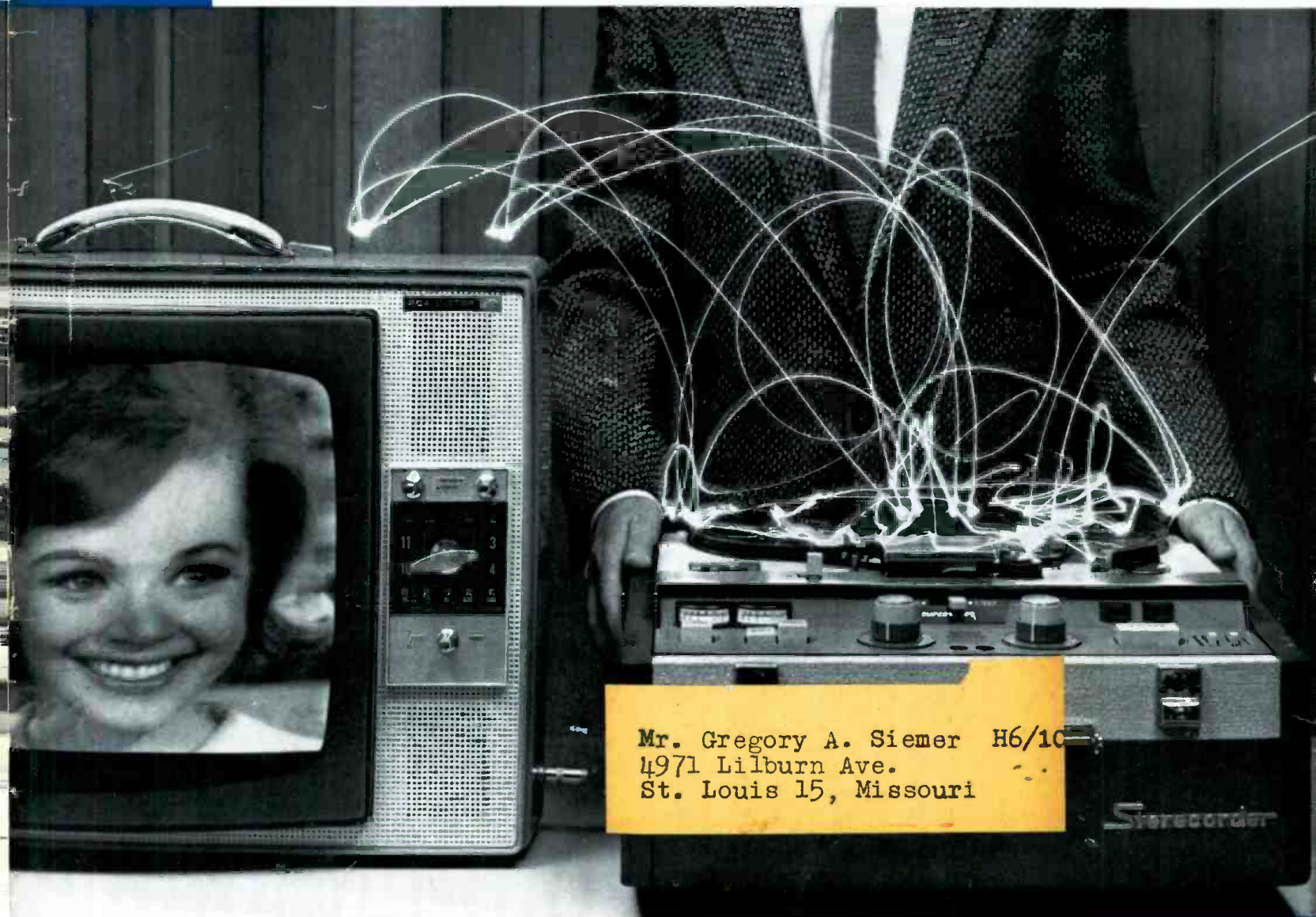


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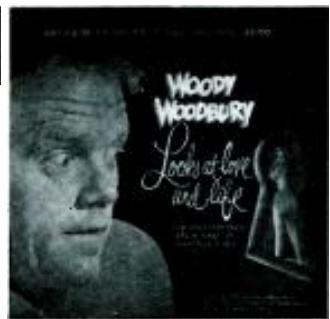
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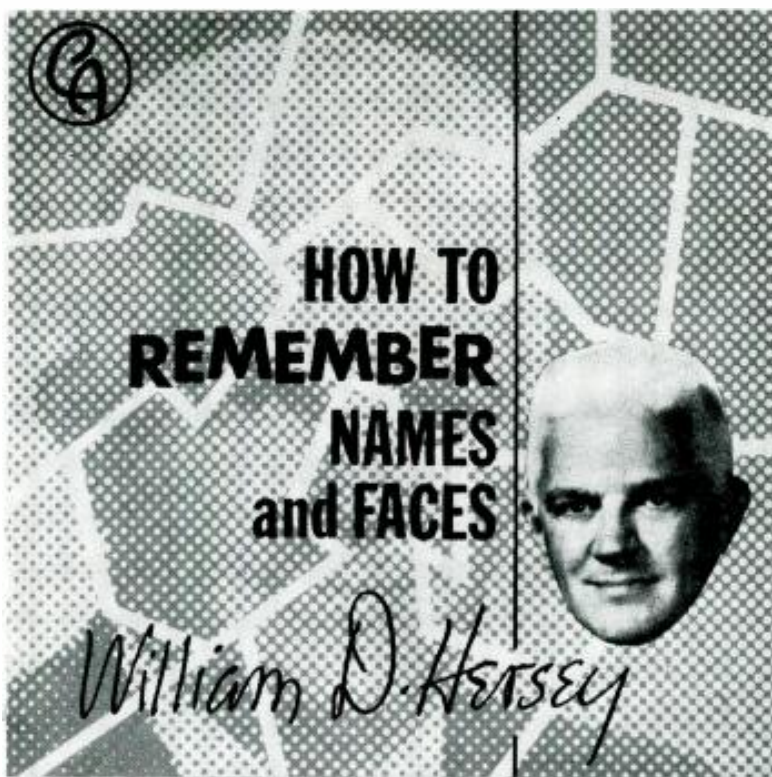


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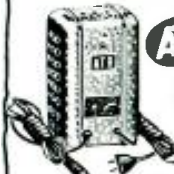
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TAPE RECORDING

VOL. 8 NO. 10

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NEW TAPES

★ Fair

★★—Good

★★★—Very Good

★★★★—Excellent

CLASSICAL

Reviewed by Robert E. Benson



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

SCHUMANN: Piano Concerto in A Minor, Op. 54

FRANCK: Symphonic Variations for Piano and Orchestra

Peter Katin, pianist; London Symphony Orchestra conducted by Sir Eugene Goossens

EVEREST T43036

4 track, 7½ ips
\$7.95 . . . 45 min.

Fine performances of these two romantic works by Peter Katin, with sympathetic accompaniment under the baton of Sir Eugene Goossens. There are better performances of both works on discs, notably Lipatti on Columbia for the Schumann Concerto, and Fleisher on Epic for the Franck, but the present tape will satisfy most listeners so far as performance is concerned.

The piano sound is questionable . . . rather wooden and extra heavy in the bass, but the orchestra is nicely balanced, big and reverberant, with great empty-hall sound. Some folks might find the sound on this tape not to their liking; I enjoyed it after a few minutes of getting used to it.

Everest is to be commended for not interrupting the Schumann Concerto between the 2nd and 3rd movements and placing the third movement on the reverse track, as they easily might have done. This would have been a most unfortunate break. Instead, playing the tape through one way one hears the Schumann in its entirety, and playing it through the other way the complete Franck work can be heard, leaving a considerable amount of blank tape after the Franck. This is the way it should be done, and our hats are off to Everest for avoiding a disrupting break in the Schumann Concerto.



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

BRAHMS: Piano Concerto No. 1 in D Minor, Op. 15

Leon Fleisher, pianist; Cleveland Orchestra conducted by George Szell

EPIC EC 802

4 track, 7½ ips
\$7.95 . . . 47 min.

When first issued a year or so ago as a monophonic disc on Epic (LC 3484), this was recognized as one of the best performances and recordings ever made of this gigantic concerto, perhaps bettered only by the Rubinstein-Reiner version on RCA (LM 1831, monophonic disc only). When transferred to stereo disc (Epic BC 1003), it was even more impressive, and now we have it on a superbly engineered four-track tape which is doubtless its ultimate refinement in sound—richer and cleaner than ever before.

Epic is to be congratulated on its good taste in packaging. All of their tapes are packed in elegant blue boxes, with gold and red letters, and are attractive enough to be a distinguished addition to any tape shelf. Recommended without hesitation.



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

SAINT-SAENS: Symphony No. 3 in C Minor, Op. 78 (with Organ)

Boston Symphony Orchestra conducted by Charles Munch

RCA FTC 2029

4 track, 7½ ips
\$8.95 . . . 34 min.

This Symphony is one of Charles Munch's specialties, and this is his second recording of it.

Munch possesses just the right temperament to bring out the best in this rather pretentious orchestral showpiece, and he guides the Boston Symphony in a glowing performance, superb in all respects, with bigger sound than the competing four-track version (Mercury STC 90012, \$7.95) with Paul Paray conducting the Detroit Symphony Orchestra. The Urania two-track tape with Hans Swarowsky conducting remains my choice for this music, but this tape is now difficult to find.

The present tape is the best recording of the Boston Symphony I've ever heard, and it's guaranteed to put any hi-fi rig through its paces, although there is occasionally a fuzzy quality to the sound. According to the liner notes, when this performance was recorded the Orchestra was placed on the floor of Symphony Hall, away from the stage, with a resultant open quality that is very pleasing, and a good, ponderous organ sound. I might add that this tape is a revelation when compared to its stereodisc counterpart, which was overcut and distorted in most loud passages.

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

BERLIOZ: Fantastic Symphony, Op. 14
 Paris Conservatory Orchestra conducted
 by Ataulfo Argenta
LONDON LCL 80012
 4 track, 7½ ips
 \$7.95 . . . 51 min.

Ataulfo Argenta was one of the most promising young conductors until his death in 1958. Why he was so seldom given the opportunity to record with one of the better orchestras is a mystery. The majority of his recordings are with orchestras having a French timbre — saxophonish French horns, weak woodwinds and thin strings—although he did make several records with London orchestras where these qualities are fortunately absent.

In this tape of the *Fantastic Symphony* Argenta's intentions are hindered by a small-sounding orchestra which must be given an A for effort, but is incapable of producing the big-orchestra sound necessary for this score. London's close-up recording only reveals orchestral details better left unexposed. The Everest tape (T4-3037) is far superior, though it might not have been, had London given Argenta an orchestra worthy of him, along with their best sound.

POPULAR



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

MISTER PERCUSSION
 Puttin on the Ritz, Softly As in the Morning Sunrise, The Man I Love, Get Out of Town, Deep Night, Colonel Bogey (March), Once in a While, Ev'rything I've Got, Out of This World, Binga Bango Bongo, Picnic, Oye Negra
 Terry Snyder and the All Stars
UNITED ARTISTS (Ultra Audio) UATC 2217
 4 track, 7½ ips
 \$7.95 . . . 33 mins.

This is another in the long series of "percussive" programs currently being offered by most labels, but is not a bongo and drum solo as many are. Instead, it combines practically every type of percussion instrument obtainable, with brass and woodwinds, to produce brilliant and sparkling sound that moves from left to right channel in a very definite manner.

Descriptive notes on the back cover tell you what to expect as the music plays back and forth.

Ultra-Audio has done a first-rate recording job, with stereo effect and fidelity of the best.—*F. N. West*

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

BENNY GOODMAN RIDES AGAIN
 Track A: Mission to Moscow, Benny Rides Again, The Earl, Ev'rything I've Got, Whispering
 Track B: All the Things You Are, You Do Something To Me, It Could Happen To You, Stereo Stomp
 The clarinet, orchestra, and quintet of Benny Goodman

BEL CANTO ST-112
 4 track, 7½ ips
 \$7.95 . . . 29 mins.

There is only one Benny Goodman and this is a fast and lively performance as

can only be performed by the maestro himself. Supported by some of the ablest musicians in the business today, they romp through a series of swingers and chamber jazz in a most pleasant and appealing style. Such a nostalgic offering should appeal to old timers and young moderns alike. This is another in a long series of successes for the "King".—*F. N. West*



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

LET'S DANCE AGAIN
 Pretty Baby, Side Saddle, Soft Shoe Song, Adios, Irene, Hey! Chick!, Cha-Cha-Panecas, Bouncing Ball, Swamp Fire, Would You Like To Take A Walk, The



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Doodlin' Drummer, Let's Dance Again, Play A Simple Melody
David Carroll and His Orchestra
MERCURY STB 60152
4 track, 7½ ips
\$6.95 . . . 34 mins.

Here is another release by the David Carroll orchestra and a sequel to his first "Let's Dance" album. As played in his masterful style, there is a very definite stereo response so characteristic of Carroll's previous offerings. The varied musical program is effective, pleasant and most entertaining.

Mercury's recording engineers have produced a good, clear sound which makes it a "must" for the hi-fi enthusiast who likes to show off his equipment.

An excellent tape!—*F. N. West*



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

CLAP HANDS! HERE COMES ROSIE!

Sequence A: Something's Gotta Give, Hooray For Love, Mean To Me, Oh, What A Beautiful Mornin', It Could Happen To You, Makin' Whoopie
Sequence B: Clap Hands! Here Comes Rosie!, Everything's Coming Up Roses, Give Me the Simple Life, Bye Bye Blackbird, Aren't You Glad You're You, You Got, Too Marvelous For Words

Rosemary Clooney
RCA FTP-1033
4 track, 7½ ips
\$7.95 . . . 32½ mins.

Meet Rosie Clooney in her first "solo" tape. Always cast previously with other name singers and musicians, Rosie emerges here alone in the spotlight with a baker's dozen of popular tunes properly selected to suit her singing style.

Refreshing orchestral arrangements by Bob Thompson together with smart choral support make this one you'll like to hear again and again. She is in good voice and Clooney fans should rejoice at the chance to have a "private" performance by one of our top pop singers.

Good clean sound, well recorded.—*F. N. West.*



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

DANCING ON A CLOUD

Sequence A: Medley No. 1—'S Wonderful, Ain't She Sweet, Anything Goes & In the Shade of the Old Apple Tree
Medley No. 2—Dancing in the Dark, Embraceable You, Shuffle Off to Buffalo, Softly As in a Morning Sunrise

There are three other medleys in this sequence.

Sequence B: Medley No. 6—Avalon, Baby

Face, Louisiana Hayride, I'm Looking Over a Four Leaf Clover
Medley No. 7—September in the Rain, Tip-Toe Thru the Tulips with Me, Carolina in the Morning, Moonlight Bay, Night and Day
There are three other medleys in this sequence.

The Three Suns
RCA FTP-1067
4 track, 7½ ips
\$7.95 . . . 37 mins.

This tape is one of the best that the Three Suns have made—41 numbers arranged in 10 medleys—you name it and if it was good, it's there. Mostly nostalgic, the selections such as Baby Face, Daisy Bell etc., glide swiftly by and whether you are dancing or listening, it's all over too soon. The usual fine recording techniques and stereo effect add to the pleasure that this recording has for both young and old.—*F. N. West*



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

RING-A-DING

Ring-A-Ding Ding, Let's Fall in Love, Be Careful, It's My Heart, A Fine Romance, A Foggy Day, In the Still of the Night, The Coffee Song, When I Take My Sugar To Tea, Let's Face the Music and Dance, You'd Be So Easy To Love, You and the Night and the Music, I've Got My Love To Keep Me Warm

Frank Sinatra; Arrangements and orchestra conducted by Johnny Mandel
REPRISE RSL-1701
4 track, 7½ ips
31 mins.

A new label and a new Sinatra. Sinatra breezes through twelve excellent selections with a careless abandon that adds considerable charm to a style that for years has been considered tops in the field. Old Sinatra fans will renew their interest and new Sinatra fans should be attracted by the score.

Johnny Mandel who wrote the arrangements and conducted the orchestra certainly deserves his share of glory as the music and arrangements are as novel and exciting as Frank's artistic freedom in handling the lyrics.

Nothing wrong with the tape technically either. Fidelity and stereo effect are all that one could wish and the miking is excellent.—*C. Parody*

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SHOWS



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

SOUTH PACIFIC

Some Enchanted Evening, I'm Gonna Wash That Man Right Outta My Hair, Younger Than Springtime, Happy Talk, A Cock-Eyed Optimist, Bali Ha'i, A Wonderful Guy, Honey Bun, This Nearly Was Mine, There's Nothin' Like A Dame

Frank Chacksfield and His Orchestra

RICHMOND (London) RPE-45019
 4 track, 7½ ips
 \$4.95 . . . 30 mins, 40 sec.

By this time, almost everyone is familiar with Rodgers & Hammerstein's "South Pacific" and although the music has been recorded by many orchestras, there is in this tape that Chacksfield touch prevalent throughout which in itself makes for exceptional and enjoyable repeated listening. Frank Chacksfield with his unusual arrangements and flair for sweet melody, provides a little extra something on his own — delightful entertainment — good recording, nice stereo separation and excellent interest. Quality of the Richmond tape is up to the usual high London standard.—*F. N. West.*



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

GREAT MOTION PICTURE THEMES

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Ferrante and Teicher, Gerry Mulligan, arranger-conductor Don Costa, Nick Perito and others

UNITED ARTISTS UATC 2223
 4 track, 7½ ips
 \$7.95 . . . 40 mins.

A collection of motion picture themes from sixteen of the greatest of the more recent hits from Hollywood. Includes some taken directly from the sound track as well as interpretations of them by other leading artists.

The brilliant Ferrante and Teicher piano team lead off with their best-selling theme from "Exodus," followed by Don Costa, Al Caila, Nick Perito and others.

Good stereo separation, fairly wide dynamic range, and reasonable variety all add up to an interesting tape particularly for movie fans.—*F. N. West*



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

EXODUS
 Music from the movie
 Hollywood Studio Orchestra
 UNITED ARTISTS UATC-2224
 4 track, 7½ ips
 \$7.95 . . . 45 mins.

The score for Exodus was written by Ernest Gold to provide a musical background to fit the various moods and situations of the people in the picture. The

music seems like a series of tone poems, each beautiful unto itself — tense, solemn at times, with crescendos which suddenly shock you out of your lethargy, all held together by a haunting main theme.

Excellent recorded, both from the standpoint of dynamic range and fine stereo separation. A good tape if you are in the mood for dramatic and emotional music.—*F. N. West*

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CROSSTALK

from the Editors

THE DAY OF completely transistorized audio equipment is not many years away. The tiny, solid-state devices are being used more and more in gear for all sorts of applications.

* * * * *

THE PORTABLE, self-powered tape recorders make the widest use of transistors in the audio field and already there are transistorized amplifiers and preamps on the market.

* * * * *

AS WITH ALL new devices of this sort, there are a few years at the beginning when the prices are high. Manufacturers must recover the sums spent in research to develop the new devices and early assembly methods are usually by hand, an expensive procedure.

* * * * *

ONCE ESTABLISHED, however, other manufacturers jump into the business and as production methods improve and mechanization takes the place of hand labor, the prices drop.

* * * * *

THIS HAS HAPPENED and is happening today in the transistor field. Where a few years ago there were 40 manufacturers, there are now 80 and all with the latest equipment, necessary to meet the prices quoted by those who do have the latest equipment.

* * * * *

THE TRANSISTOR itself has improved steadily under the heavy research programs devoted to it. Early transistors, which were invented by Bell Telephone Labs, were not good enough in frequency response nor could they handle enough power to make them practical in audio work. But these problems have now been licked.

* * * * *

WHEN PHILCO closed its Lansdale, Pa. tube plant and CBS brought tube production to a halt in its New England plant, it brought out forcefully the inroads that the transistor has made in everything from radios to computers.

* * * * *

WHEN THE TRANSISTOR first started to make its appearance, everyone was asking when they would be applied to recorders and amplifiers. At that time, tubes were both cheaper and better than transistors, hence there was no real need to put them into gear that was destined to be used in the home for there was plenty of power available from the plug in the baseboard and small equipment was not really needed.

* * * * *

SUCH THINGS as portable radios and hearing aids, where small space and light weight, plus low battery drain were of extreme importance were the first to benefit. The high cost of transistors was more than offset by its other advantages. But these were limited markets and manufacturers looking for other markets were forced to bring their prices down and improve their production methods before the transistor could be considered for other applications. How well they succeeded is becoming apparent in the widening number of transistor products.

* * * * *

A YEAR ago, projections were made as to the hoped-for cost levels of transistors in 1963. Competition between manufacturers and better production techniques have already brought the prices down to where they hoped to have them two years hence—a gain of two years on the timetable. In addition, the better manufacturing techniques have resulted in manufacturing yields of 90 per cent where in former years only 40 to 50 per cent of the output was able to pass inspection. During the interval between 1958 and 1960, the price of transistors for low-speed commercial computer switches dropped 65 per cent and audio amplifier transistors fell 45 per cent.

* * * * *

THE QUALITY of the transistor is now such that it performs perfectly in the audio ranges. You will see more and more small amplifiers, amplifier-speakers and recorders, some of which will be entirely self-powered from small batteries. . . . and the quality will be good.

INDUSTRY NEWS

H. H. SCOTT of Maryland, Mass., has had to increase its manufacturing area by 50% ten years ahead of schedule. The firm has leased a portion of Maynard Mills less than a mile from their present facilities. Their present plant, built four years ago, was supposed to have been adequate to take care of growth for ten years. H. H. Scott, company president, feels that FM stereo and their new kit business has a great future.

COLUMBIA RECORDS has upped William P. Gallagher to a new position of vice-president of marketing in a realignment of its sales and integration of its marketing. Mr. Gallagher is also a director of the Magnetic Recording Industry Association.

CURTIS MATHES MANUFACTURING CO., Dallas, Texas, will enter the magnetic industry with a tape deck. Curtis Mathes, Jr., company president, said that 40 per cent of the nation's homes are ready for a simple tape deck designed for home recording. The deck will be designed for the home cultural entertainment market and will be suitable for learning foreign languages.

NATIONAL AUDIO VISUAL ASSOCIATION convention and show in Chicago was a sell-out with a 230 booth exhibit, the biggest ever, and an attendance of more than 3500 people from education, A-V dealers, business, medicine and religion. The show was the largest in the organization's 21 year history. Mahlon H. Martin of M. H. Martin Co., Massillon, Ohio, was elected president replacing Harvey W. Marks of the Visual Aid Center, Denver who was last year's president. Mr. Marks becomes chairman of the Board.

AUDIO ABSTRACTING CENTER, Box 346 Hinsdale, Ill., is now producing a monthly tape service—"Marketing/Sales in the Tape Recorder Field." The one-hour tapes will contain digests of all news from trade publications having to do with tape recorders. It is estimated that about 200 hours of reading by the editorial staff will be necessary to produce the 1 hour tape each month.

THE FOUNDATION FOR RESEARCH ON HUMAN BEHAVIOR, 1141 E. Catherine Street, Ann Arbor, Michigan has just issued its "Consumer Behavior in 1961—a Summary Report" which delineates the attitudes of the consumer toward purchases of goods. Cost of the report is \$1.00.

MAGNECORD SALES DIVISION of Midwest Instruments, PO Box 7509, Tulsa, Oklahoma has just brought out a booklet "207 Ways to Use a Tape Recorder." The booklet describes ways in which a tape recorder may be used in business, professions, industry, schools, churches and at home. Copies are free on request.

MINNESOTA MINING AND MANUFACTURING COMPANY, St. Paul, Minnesota has named Dr. Charles W. Walton as vice president for research. He succeeds Dr. Carl Barnes who recently resigned for

personal reasons. Dr. Walton was formerly vice president and general manager of the 3M adhesives, coatings and sealers division.

TANDBERG OF AMERICA, Pelham, N.Y., has developed a complete, self-selling recorder accessory display rack for Tandberg dealers according to Bob Bowman, sales manager. The unit holds microphones, a foot pedal, telephone pick-up, extension cables, metallized tape leader, Y connectors, cleaning fluid, swabs and tape. The items are packed in polyethylene bags with descriptive headers.

NATIONAL BETTER BUSINESS BUREAU and MAGNETIC RECORDING INDUSTRY ASSOCIATION have jointly produced an informative booklet which is about ready for distribution to dealers for passing out to their customers. The booklet delineates the various phases of tape recording so that customers will have a better understanding before they buy.

LANGUAGE TRAINING AIDS, Boyds, Maryland, has available a new catalog of correlated visual and sound programs for foreign language teaching. The catalog contains filmstrips and slides having matching dialogs on tapes, records, flashcards and other aids. Free copy sent on request.

BELL SOUND division of Thompson-Ramo-Wooldridge has named Kenneth L. Bishop, General Manager of the Bell Sound Division, as the man responsible for all consumer products of the firm. He will also supervise the activities of Bel Canto Stereo Tapes, a subsidiary. Russ Molloy will continue as manager of Bel Canto. W. M. Jones, T-R-W group vice president made the announcement.

The move will promote better coordination of marketing activities of both Bell Sound, makers of recorders, decks and amplifiers, and Bel Canto, major producer of stereo tapes.

BELL AND HOWELL will develop and market a series of courses for use with its Language Mastet, a device which plays back words and sentences from pre-recorded magnetic strips mounted on specially prepared cards. The rights in the machine were acquired from Ellamac, of Chicago.

Dr. G. Paul Moore, of Northwestern University has been retained as a consultant to Bell & Howell on the Language Master program.

KIMBERLY INDUSTRIES, 346 W. 14th Street, New York has been named sole United States distributor for Korting tape recorders which are made by Korting Radio Werke, Grassau, W. Germany.

INDUSTRIAL FILM AND AUDIO VISUAL EXHIBITION will be held this year at the Barbizon Plaza Hotel in New York from October 9 to the 11th. The exhibition will include the First International Film Festival. Herbert Rosen, president of Industrial Exhibitions, 17 E. 45th Street, will handle the show. A-V training sessions will also be featured.



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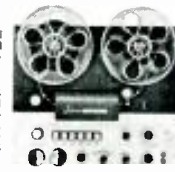
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TAPE IN EDUCATION

Robert C. Snyder

LONGTIME readers will remember that in the January, 1960 column we discussed the Fairbanks speech compression and expansion machine. This month we would like to tell you of a way we think this machine might be used to effect substantial increases in efficiency in teaching ballroom dancing.

By electro-mechanical means, the Fairbanks machine is able to shorten or lengthen the time required to play a given amount of recorded material *but without increasing or decreasing the pitch of the material.*

(Information on the process involved may be found in our January, 1960 column or on page 261 of "Elements of Magnetic Tape Recording" by N. M. Haynes. Details of the machine itself are reported to be in an article entitled, "A Device for Time Expansion Used in Sound Recording", by G. Fairbanks, W. L. Everitt, and R. P. Jaeger, beginning on page 7 of the *I. R. E. Transactions-Audio*, for January-February, 1954.)

The first popular report on this device was in the October, 1959 issue of *Reader's Digest*, which gave particular attention to the use of the device for facilitating teaching muscular coordination patterns in foreign language speech training.

A few months ago I had an occasion to discuss this whole subject with Malcolm R. Robertson of Olenton, Maryland. Mal is now a production control specialist for a federal government agency, but formerly was a Don Pallini dance instructor and in his spare time still specializes in teaching dancing to groups. In the course of our conversation we discussed the possibilities of applying the same principles to dance instruction, which, essentially, involves teaching muscular coordination skills.

Next class session, Mal tried the technique by taking a 33 1/3 RPM cha-cha rhythm record from a popular rhythm accompaniment album (Harmony Album HL 7262) and playing it to his group at 16 2/3 RPM player speed. (Incidentally, a rhythm record has only instruments that produce the beat, no melody is added.)

Mal says that the result was so amazing he was stunned. Every beginning student in his class "locked" into the cha-cha rhythm and seemed almost unable to get out of step.

When he tried the same thing with other records, however, he found problems. With rhythms inherently slower than the cha-cha, he found that the 50% reduction in tempo between 33 1/3 RPM recording speed and 16 2/3 playback speed was too great. And with music with a melody, the pitch changes proved too annoying.

Mal informs me that a Bogen record player with a continuously variable speed control has proved very popular with dance instructors for several years. With this record player it is possible to get any intermediate speed (apparently between 29 and 86 RPM) which overcomes the problem of excessive slowdown to a degree, but unless later models permit variable speeds slower than 29 RPM, this does not really

provide enough slowdown range for 33 1/3 RPM records. Also, the problem of annoying pitch variation still remains. And the pitch variation is evidently quite annoying to many musically sensitive persons.

This is where the tremendous possibilities of the Fairbanks machine for changing tempo without changing pitch come in.

I have just finished discussing this entire subject with Harry Foster, President, Kay Electric Company, Maple Avenue, Pine Brook, Morris County, New Jersey. Kay Electric manufactures the Kay *Vari-Vox*, the commercial model of the Fairbanks machine, which sells for about \$1,500. At this price it can be seen that not every dance studio would be able to rush out and buy a *Vari-Vox*.

However, if it were possible to prepare tapes with a series of tempos of varying degrees of slowdown for each of a number of selections which have proved popular with dance instruction groups and have these tapes commercially available, then any dance instructor with a tape player could have the benefit of the method.

Mr. Foster has said that he would be interested in seeing the outcome of a test of this approach himself, and will assist with the preparation of some suitable experimental materials.

Mal Robertson, who already owns and uses a couple of tape recorders will start an experimental testing program this fall.

I hope to be able to give you detailed information on the results of the experimental dance instruction program soon.

Next month we will try to show how the same techniques might be applied to teaching other muscular coordination skills involving rhythm factors.

Incidentally, this column and the experimental program being undertaken are the result of a request from D. H. Gardner of California. Reader Gardner picked up a reference to this subject in an earlier column and requested more information.

If there are any subjects you want covered, let us know. Is there any interest in a report on sleep learning techniques? We had one request on this a while back from Reader Robert Seamon of Pennsylvania and would be glad to try to dig out some recent information on this if there is sufficient interest. Please also give us details of any successful experience you have had with the technique.

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TAPE CLUB NEWS

One Big Family

It is pleasant to read the short notes that come in to Melva and Charles Owen from members in their Voicespondence Club. The thing that stands out is that these members all seem interested in each other, not themselves.

If one is ill, the others send him wishes to get well; when one has an addition to his family, congratulations are passed around; expressions of sympathy are sent to families who lose loved ones; some members willed their electronic equipment and tapes to the club; some members exchange gifts, such as the pair of socks Rose Ingham of New Zealand knitted for A. E. Foster of N.J.; suggestions of all kinds are passed back and forth between members—and so it goes.

It is this kind of spirit taping promoting, and if we had enough of this kind of spirit, everyday tensions would soon disappear.

Can't Handle Any More

We note that American Tape Exchange member Cyril H. Jervis, from Chile, has expressed a desire to have his name removed from the club's membership listing. Why?—well not because Cyril isn't happy with the club, but simply because he has now acquired his own list of tape friends now numbering well over 130 names. And that's a lot of folks to correspond with for any member.

Just goes to show that the friends you can meet and chat with through these clubs is great in number. Cyril just prefers not to start any new exchanges simply because he can't handle them. His exchanges must be most interesting and Cyril himself must be a delightful person to have acquired so many tape friends.

This is another illustration of the wonderful possibilities of establishing friendships and creating better world-wide understanding through tape correspondence clubs. Onward and upward.

Associate Clubs Aid Tape Exchanges

Under the Associate Clubs plan, authorized by the IRC constitution, Indiana Recording Club exchanges directories and newsletters with clubs in other countries on a reciprocal basis, thereby giving IRC members an opportunity to exchange tapes and to make friends with tape hobbyists in far-away parts of the world.

The Bristol Tape Club, of England, was IRC's first Associate Club and there is considerable activity between members of the Indiana and Bristol groups.

Roster information from the second Associate Club, the Association of South African Recording Clubs, has been received at IRC headquarters and this has been reproduced in part in the Indiana

club's Directory Supplement which is received by members together with Tape Squeal, the club bulletin.

Indiana Recording Club headquarters has also received an inquiry from the British Recording Club.

JOIN A CLUB

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

AMATEUR TAPE EXCHANGE ASSOCIATION
Ernest Rawlings, Secretary & President
5411 Bodge 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, 10 Iema Avenue
Montreal 38, Que., Canada

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

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

THE VOICESPONDENCE CLUB
Charles Owen, Secretary
Noel, Virginia

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

WORLD TAPE PALS, Inc.
Marjorie 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, Whitstone By Duns
Berwickshire, Scotland

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

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

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

WTP Bicycles Cross-country



Teen-Pals Director John Cummings begins his coast-to-coast trip on behalf of the People-to-People Program.

John Cummings, age 18, director of the Teen-Pals Section of World Tape Pals, is making a coast-to-coast bicycle tour to publicize the tape recording activities of the People-to-People Program, activated by President Eisenhower in 1956, and highly endorsed by President Kennedy.

Enroute, John will contact WTP's and others interested in the People-to-People Program, and international tape exchange. He will inform newspapers of his activities and give information on tape exchange to anyone interested.

He has already been interviewed by some major radio-TV stations and newspapers. One of his first appearances was on the Rocky Mountain Network (51 stations). At Salt Lake City he appeared on two radio-TV programs, and was interviewed by The Associated Press, United Press International, and two leading dailies.

He reached Chicago the last week in June where he appeared on Don McNeill's Breakfast Club of the Air. An illustrated feature appeared on a local TV program and a radio children's hour.

Bruce Gustafson, a Teen-Pal, in Brocton, Mass., will be John's host on the East coast, and provide him a central location from where he plans several side trips, including a visit with Fr. Francis Valliancourt, who is leaving his Saskatchewan, Canada church for a vacation in the eastern U.S.


WTP Reel #4, the Central School Tape Club of Oroville, Calif., entertained John with a party at the home of Bruce Barton at the end of John's trial run on his bicycle in early May.

John is an enthusiastic, well-mannered teen-ager, at ease before a mike and an excellent speaker. This fall he will enter college in San Mateo to prepare for the Presbyterian ministry. He is certainly a credit to any club and he deserves much praise for his bicycling endeavor.

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QUESTIONS AND ANSWERS

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

Murder!

Q—I wonder if you can answer a question for me? I have an Akai stereo tape recorder on which I have recorded, among other things, about 24 hours of the best monaural jazz. The sources of the sounds are no longer available.

The problem: I recorded these sounds on tape that has turned out to be worthless and was recommended to me by someone I will soon kill.

What happens is that it screeches when in contact with the playback head. Sometimes, moistening the tape with a finger just before it hits the head alleviates the noise temporarily but one just can't stand there with his finger in the works. With Scotch and other silicone lubricated tapes there is no trouble at any speed. Can I somehow lubricate these tapes? Beeswax? 3 in 1? Axle grease? Help. Help—C. L. K., FPO. San Francisco.

A—You are correct in spotting your trouble as loss of lubricant in the tape but it wouldn't hurt to give your heads and guides, and pressure pads a good cleaning.

To restore some lubrication to the tape you can use a Robins Industries "Jockey Cloth" which is a silicone lubricated cloth. The tape should be run through a fold of the cloth as it is played.

There is also the Pylon "Filmagic" kit which contains cleaning and lubricating fluids plus a pylon device that clamps on the recorder. This, when wetted with the solution, applies the silicone lubricant to the tape automatically. The device may also be held on the recorder deck with a suction cup which is furnished. It is distributed by the Distributors Group, 204 14th Street, NW, Atlanta 14, Ga. The address of Robins Industries, makers of the Jockey Cloth, is Flushing 54, L.I., New York.

On a temporary basis, graphite also can be used to lubricate the tape but this is a messy procedure and the silicone lubricants are much better. Care should be taken not to get too much lubricant on the tape or it will collect on the capstan and roller and cause slippage. Silicone lubricants are so slippery that only the merest trace will suffice.

We would suggest you team up with another recorder owner and make copies of your tapes on new tape you know to be good. This will be a bothersome job but it will assure you of no trouble in the future.

Distortion Trouble

Q—Recently I attempted to tape directly from my record changer to my recorder heads through my input jack. The results were quite discouraging. The sound was choppy and distorted and also appeared to be dragging slightly. I then used the same technique using my FM-tuner and again the same distorted sounds. In each instance I was using shielded cable so I am at a loss to explain why I am not getting results. I can, however, successfully record the same sounds through the mike without any distortion whatsoever. Any ideas as to what the trouble might be?—R. P. C., Catonsville, Md.

A—We believe your difficulty is caused by overloading—the strength of the current going into your recorder is too great for the input.

Different recorders handle this in different ways. With the Webcor, for instance, a special accessory cord must be used which incorporates a resistor to cut down the strong current. The V-M machines have a dual jack. When recording with a microphone the plug is put all the way in and when recording from a high level source, such as a tuner or phono, the plug is put only half-way in.

We would suggest you consult your instruction book which came with the recorder in the section regarding taping from radio or phono. We think you will find the special cord is necessary and it will tell you the number. Your dealer should have it in stock or be able to get it for you.

Since the recorder works satisfactorily when the microphone is used, it would indicate that the machine is OK and that the trouble is coming from putting too much current into an input designed to handle very small currents.

WIN A REEL OF TAPE

Tell us in your own words "Why My Tape Recorder is Important to Me"

CONTEST RULES

Entries will be judged on the basis of their usefulness to others and on the uniqueness of the recorder use. Explanations must be personal—why your recorder is important to you—not why it could be important to someone else. Letters should be kept as brief as possible and yet, tell the story and preferably, should be typewritten, although handwritten letters will be acceptable. No entries will be returned.

Address your entry to:

IMPORTANT RECORDER CONTEST, TAPE RECORDING MAGAZINE, SEVERNA PARK, MARYLAND

NEW PRODUCTS

GERMAN STEREO RECORDER



Kimberley Industries Ltd., 346 West 44th Street, New York City, N. Y. is distributing the West German Korting 158S stereo tape recorder. This machine features three separate heads for recording, playback and erase, and a self contained stereo speaker system. Also, it has an exclusive dubbing control which takes a previous recording on one track and dubs it simultaneously from the track being played onto the track being recorded for perfect multiple synchronized recording; direct tape monitoring for immediate quality control, maximum modulation of tape; reverb and echo effects; lock pause button; recording level indicator; tape counter with zero adjustment; and an automatic shutoff provision for connection of radio, phono, external amplifier, 2 external speakers, or 1 stereophonic or 2 monophonic microphones. Frequency response is 40-15,000 cycles at $3\frac{3}{4}$ ips, and 30-20,000 cycles at $7\frac{1}{2}$ ips. Price: \$329.50. Contact Kimberley for additional details.

OTHER NEW KORTING RECORDERS



Kimberley Industries Inc., 346 West 44th Street, New York City, has announced three new models in the Korting line of tape recorders. These include: Model 114, a 4-track, 2-speed record/playback tape deck with 3 heads — \$279.50; Model 136, a $\frac{1}{2}$ track self-contained monophonic record/playback with 2 speeds of $7\frac{1}{2}$ and $3\frac{3}{4}$ ips — \$219.50; and Model 138 (shown above), a self-contained stereo unit, 1-speed, 4 track, 2 heads — \$339.50. These three models join the Model 158S

reported on in preceding item. Kimberley Industries is the sole U.S. distributor of Korting tape recorders.

NEW SHURE MIKE



Shure Brothers, Inc., 222 Hartrey Ave., Evanston, Ill., has introduced its new Model 540S Sonodyne II microphone, which is a small, modern, high output, omnidirectional microphone in the moderate price range. It provides high intelligibility, dual impedance and an on-off switch, and has the unique feature of variable frequency response—allowing the user to tailor microphone to application. According to the manufacturer, this feature makes the unit suitable for a variety of "difficult" public address installations and home recording activities. In addition the firm said the new unit is the only microphone of its kind with the capability for adjustment of both high and low end frequency response independently or together. Frequency response is 60-10,000 cps, and this mike sells for \$49.95.

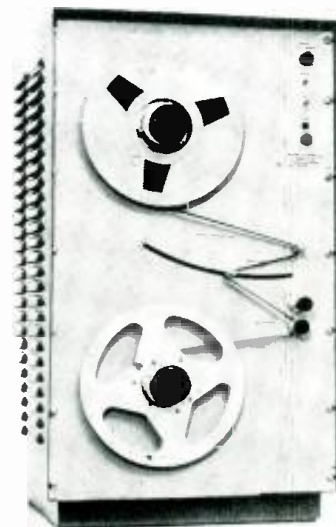
STEREO EARPHONE UNIT



Superex Electronics Corp., 4-6 Radford Place, Yonkers, N. Y., is manufacturing a high fidelity stereo earphone unit which employs separate woofer and tweeter re-

producers in each phone and an adjustable crossover network. These earphones reproduce a full spectrum of sound within a range from 20 to 20,000 cycles. The crossover network is enclosed in a separate, attractively cased unit attached to the phone. Separate controls allow individual adjustment of the sound in each phone. The network is connected to the amplifier by means of easily attached lugged connectors and may be operated from chairside by the listener. Other features of this headset unit are an adapter for use with monaural systems, feather-weight headset for maximum comfort, soft, durable plastic foam cushions, treated to resist contamination and eliminate distracting external sounds, and the headset is completely adjustable and spring supported. Impedance is 8-16 ohms. The Superex Sensiphone costs \$29.95. Write for additional information to the manufacturer.

TAPE REWIND UNIT



A high speed, universal hub, magnetic tape rewind unit which will spool a $10\frac{1}{2}$ " reel in 90 seconds is available from the Automation Division of the Electronic Engineering Company of California. The EECO TR-300 magnetic tape rewind unit is constructed with a universal hub variable from 3" to $3\frac{3}{4}$ " which accepts NAB or IBM tape reels without adapters. Precision variable tape guides handle $\frac{1}{2}$ " or 1" width tapes. Constant tension rewinding is controlled from the front panel to select the desired tension. Average rewind speed is 500 ips. Tape is rewound under constant tension and with greater precision than on regularly-used tape transports. Controls include ON-OFF, rewind and tension. The TR-300 is mounted on a standard 19" panel, $31\frac{1}{2}$ " high, with 10" depth required behind the panel. Price of the unit, f.o.b. Santa Ana is \$690.00 without cabinet, add \$75 for optional cabinet. Write Sales Department, Automation Division, Electronic Engineering Company of California, 1601 East Chestnut Avenue, Santa Ana, California, for complete specifications.

NEW REPLACEMENT HEAD



A new tape recording head designed to replace most Shure TR-5 heads has been made available by Robins Industries Corp., Flushing, N. Y. Called the Robins 5TR-B, this new replacement head is a combination 1/2 track, mono, record/playback and erase head. Eighteen replacement heads now comprise the Robins line. According to Robins, with this complete line, a serviceman or dealer can repair, upgrade or convert to stereo over 85% of all tape recorders produced in the U. S. to date. The 5TR-B replacement head sells for \$18.90.

E-V "THIN MAN" MIKE



Electro-Voice, Inc., Buchanan, Michigan, has introduced the "Thin Man" mike, which has a 24" semi-rigid "neck." The semi-rigid 1/8" tubing permits the microphone to be moved up, down, to right or left. This puts the mike conveniently close to the sound source for full-range, pop-free response without distracting or obstructing the view of either the performer or the audience. Two transparent baffles (supplied with the microphone) allow accentuation of the presence range—the smaller baffle for a 3 db boost and the larger for a 6 db boost at 5000 cps. Used without a baffle, the mike (Model 652) provides smooth response from 80 to 8000 cps. The E-V "Thin Man" is also available with 15-inch long tubing (Model 652A). Both models come complete with

Model 300 stand adapter and 20-foot three-conductor, rubber-jacketed, brown broadcast-type cable. For price and additional information, write to the manufacturer.

FREE LAFAYETTE CATALOG



Lafayette Radio Electronics Corp., 165-08 Liberty Ave., Jamaica 33, N.Y., has announced the release of its new 1962 catalog, with the latest in electronics and stereo high-fidelity equipment. It is free to anyone upon request. It contains 340 pages which feature such items as Lafayette's exclusive top quality equipment in kit form and completely assembled, as well as the latest stereo high-fidelity components of all major manufacturers — tuners, amplifiers, preamplifiers, tape recorders, turntables, speakers, etc. Also offered are complete selections of citizens band equipment, optics, books, tools, radio and TV components and accessories, cameras, public address systems and parts, etc. Write for your copy today.

"MUSIC MASTER" MARK IV



Matthew Stuart & Co., Inc., 156 Fifth Avenue, New York 10, N.Y., importers of the Phono Trix line of transistor tape recorders, has introduced the all-transistor compact Mark IV recorder. It weighs only 5 pounds, has six transistors and operates on 4 standard flashlight batteries. Using dual track 3" tape, it provides 45 minutes of playing time per reel. More than 50 hours of playing and recording time may be obtained from a single set of batteries. It operates at 3 3/4 ips and is completely self-contained in a deluxe 2-tone scotch grain leather, chrome-trimmed carrying case. Developed in West Germany, this recorder has been expressly designed to capture the sound of music and play it

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back with true high fidelity. The cost is \$129.95. For additional details, contact Matthew Stuart.

WEBCOR COMPACT



Webcor, Inc., 5610 W. Bloomingdale Ave., Chicago 39, Illinois, have introduced the Webcor Compact, a 13 pound recorder, with speeds of 3 3/4 and 7 1/2 ips. It has dual track recording heads, wide range hand held mike, record-playback-rewind control, record safety lever and neon record level indicator. Other features include: frequency range up to 12,000 cycles, volume-tone control, and slide synchronizer jack (with Webcor's new slide synchronizer, the Compact Deluxe will do the commentary and change the slides for you automatically). The price—\$99.95. Write to Webcor for more details.

FEEDBACK

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

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

Feed-Not Take Up

To the Editor:

I add my voice to those of Messrs. Collins, Hensel and others in their plea for an adjustable speed recorder. Although I own several recorders already, the absence of such a feature has kept me from buying a really high quality machine.

Incidentally, GMB of Phoenix, who asked in your August Q & A Section if there were any Music-Minus-One type records on the various piano concertos should be warned that he probably wouldn't find them very satisfactory without a pitch adjustment. I have tried the Music Minus One Mozart four-hand record, which by the way is excellent, but it takes a good turntable and a pretty fine pitch adjustment to keep it from sounding like a honky-tonk piano. I have even had trouble taping one part and playing it back on the same recorder against the piano. Whether the difference in pitch was due to the recorder warming up—or the piano—was not ascertainable but even to my amateurish ear the dissonance was unpleasant.

In Thomas' article on Tape Indexing, should not the caption in Fig. 3 say Feed Reel rather than Take Up Reel? The index numbers in the time chart increase more rapidly as the tape is played. This indicates that the index counter is geared to a reel whose tape is decreasing in diameter hence it is the hub size of the feed reel that must be constant. Using a similar chart I often dispense with the take-up reel entirely when editing out useless sections.—*Warwick Potter, New York, N. Y.*

Your deductions on the chart seem to be correct. At the beginning there is about 20 counts between minutes whereas at the end there is about 40 which would indicate more revolutions per minute which would come from a decreasing amount of tape on the hub. If the take-up reel was used then there would be fewer turns per minute as the amount of tape on it increased. Thus the size of the hub on the feed reel would be most important and should be the same for all reels with which the chart is used.

Tommy Is Right

To the Editor:

In the March issue of *Tape Recording* Mr. Tommy Thomas wrote an article on the Wireless Broadcaster which was very interesting.

On the strength of this article I purchased one of the kits from Allied Radio

and assembled same without any difficulty. It perked right off the bat. I found quite a pronounced hum in the reception on the radios. (Mr. Thomas mentioned this hum in his articles.)

After some experimenting I overcame practically all of the hum by wiring in a floating ground consisting of one .01 mfd. capacitor and a 100 K resistor hooked together in parallel.

I hooked one end of the floating ground underneath the broadcast unit under the ground terminal of the input jack marked J-1.

Sending you this information thinking perhaps it might help someone who has one of these broadcast units and is having the hum problem.

I might add—since putting the broadcast unit in operation I have been able to remove about 10 miles of wire from our six room apartment as I had all the rooms wired with extension speakers. Neighbors in the entire building of 16 apartments listen to my broadcasts.

I make all of my own tapes, of which I have approximately 300,000 feet of re-

corded tape, all catalogued, in addition to many good records, so can furnish a large variety of most any kind of music. Your magazine is tops—look forward to its monthly arrival. Have been a subscriber and booster for many years.—*A. A. Yundi, Chicago, Ill.*

Outfield Help

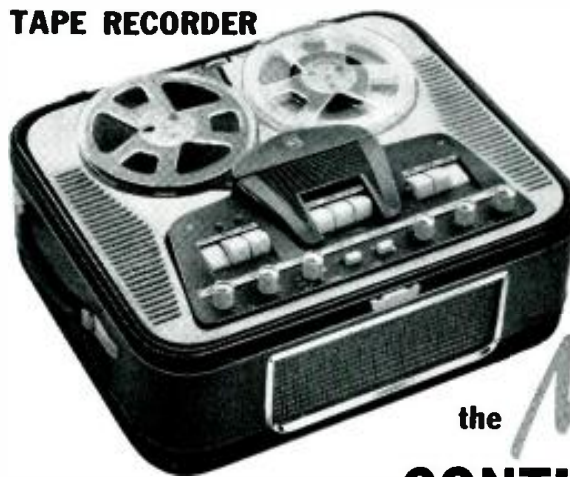
To the Editor:

In your August issue, in the article "A Potpourri of Tape Indexing" by Tommy Thomas, I would like to give some helpful advice. On page 31 he states, "Single flange reels by trimming off one flange . . . etc." I may advise that the American Moulded Products Co., 2727 West Chicago Avenue, Chicago, Ill., has furnished me with take-apart reels in which you are not put to this extra work. They furnished me with 7" reel #5231 unassembled with a 2 1/4 inch hub. This has been several years ago but I am fairly certain if you write them, they will supply them. They are inexpensive and you have a tailored part. I have used them and can speak in their behalf.

Many thanks for Tommy Thomas' article. I'm just a back field fellow trying to give a helping hand.—*Charles Huseman, Cincinnati, Ohio.*

Thanks for the tip. The outfield is just as important as the infield.

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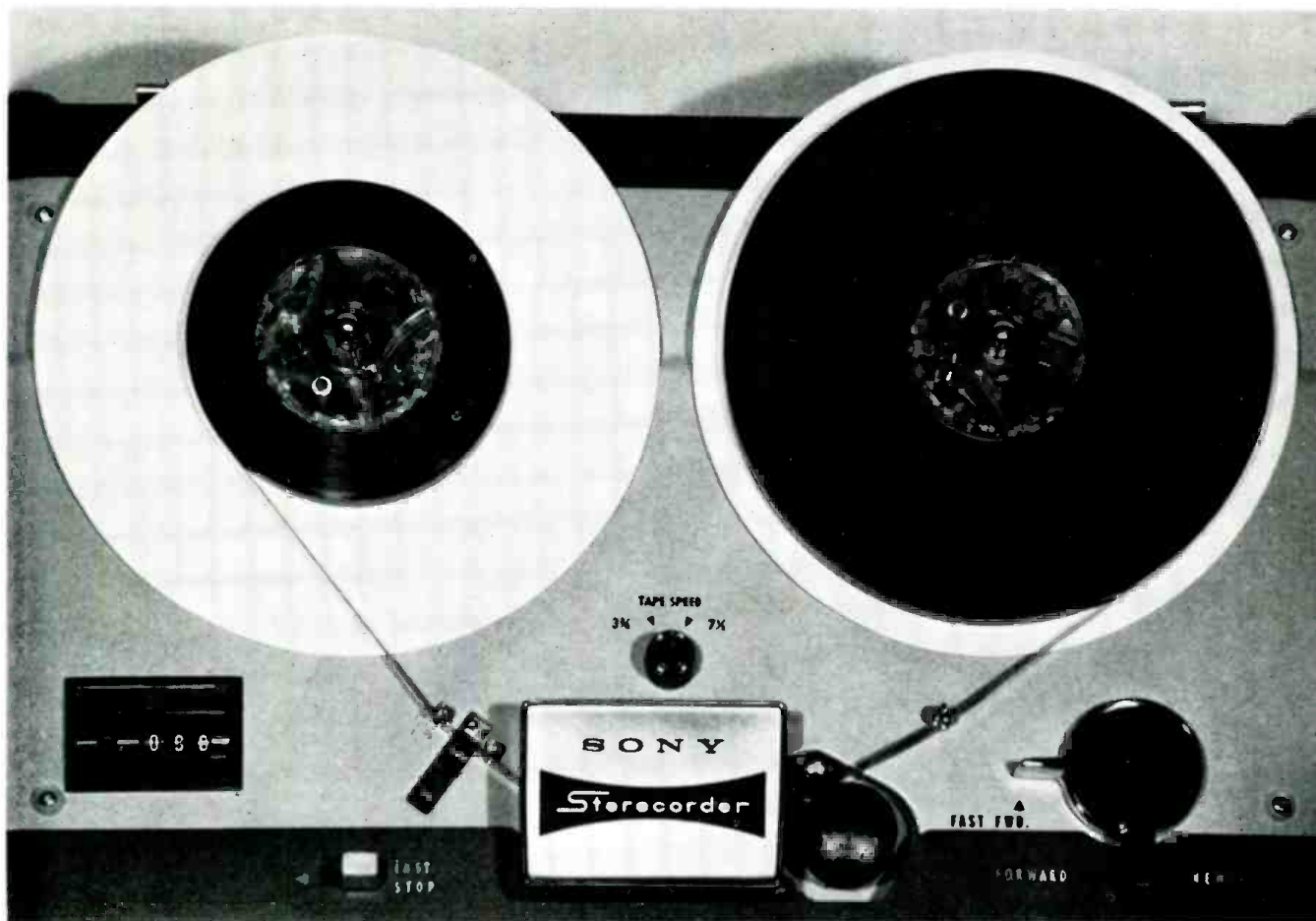


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It would be more convenient if we could record the complete hour program non-stop, without having to worry about midway reel-turnover. This is being done here experimentally by using extended-play tape wound on special "extra size" reels that hold enough tape for almost 62 minutes of continuous recording at $7\frac{1}{2}$ ips.

WANTED—A One Hour Tape Reel

by Thomas C. Thomas

... until some manufacturer answers this request, here are some suggestions for making your own.

WHEN'S the last time that you really enjoyed a full-hour TV program *that you were recording*? And by enjoyed I mean actually sat back and relaxed while watching the show, without having to think much about the actual recording process. Most likely, if you're anything like me, you spend a good part of the hour worrying about getting the complete program on tape. Usually it's necessary to sit tensely, concentrating on trying to out-guess when the commercials are going to start and stop so you can stop and start your recorder correspondingly. Also, to add to the tenseness, somewhere past the half-hour you have to start sweating out the "Flip-Over Point." At $7\frac{1}{2}$ -ins. sec., one track (or two, for stereo FM) won't last a full hour so it's necessary to flip the reels over without (you hope) interrupting a vital part of the program.

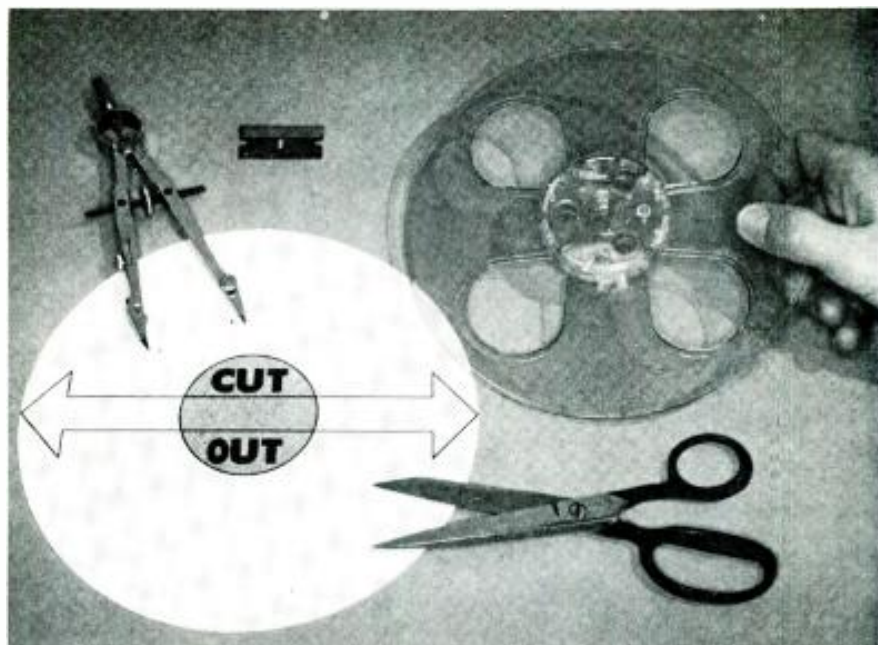
Naturally, this anxious activity on your part all during the show has kept you from *truly* seeing and enjoying it.

So, wouldn't it be nice if you could put a full hour, non-stop reel of tape on your recorder to capture the entire program without once having to worry about stopping for commercials or hurriedly switching around the reels some-

where along the way? Well, this is exactly what I've been doing lately and it's terrific! Using 1-mil tape and a special "extended" reel, I can now record a non-stop 62 *minutes at $7\frac{1}{2}$ ips* on my recorder. This way, except for occasionally checking by VU meter to see that all is still perking along okay, I can give my complete attention to the original program. Meaning that later, when listening to just the audio portion on tape, it's easy for me to thoroughly and enjoyably recreate the *entire* program in my mind.

For most of us, recording music from TV, AM and FM radio, etc., is one of our biggest sources of pleasure from our tape recorder. We usually record at $7\frac{1}{2}$ ips in order to get the best fidelity recording possible. This, of course, automatically means that we can't record a complete hour without stopping. The regular 7" reel used on home recorders holds a little more than 30 minutes of $1\frac{1}{2}$ -mil tape. Special *double-length* tape is available to give you a full hour at $7\frac{1}{2}$ ips, but it's not generally recommended for other than very special uses (and recording music for highest fidelity certainly isn't one of these uses). Also, this super-thin ($\frac{1}{2}$ -mil) tape is readily subject to annoying

Not all recorders can "handle" these extra-size reels, unfortunately, but if yours can then you may want to do a bit of full-hour recording yourself. Besides the cut-down single-flange 7" plastic reel, you'll also need a 7½" circle of thin cardboard with an inner circle cut out just barely large enough to fit over the hub.



print-through, and it must be handled so carefully that not all recorders can use it. So, doublelength tape isn't the answer!

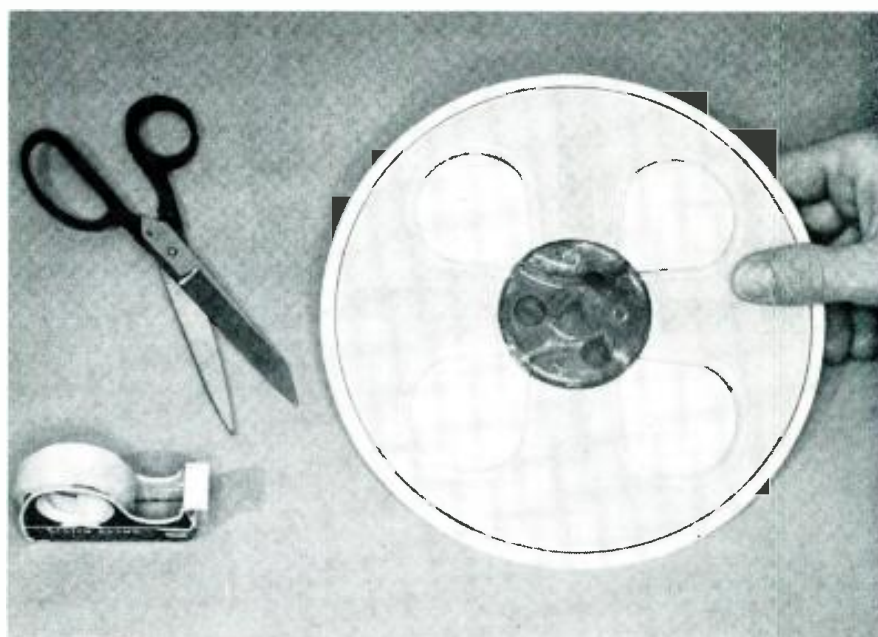
There *is* an answer, though, and I think it's a very good one. First, use extended-play (1-mil) tape. This adds 50% to your recording time without much sacrifice in quality. The fact that the majority of commercial music tapes available today are on 1-mil tape certainly attests to its "proven" quality for music recording. Now it's possible, with a bit of *squeezing*, to get almost 50 minutes of this 1-mil tape on a regular 7" reel. THEREFORE, IF WE HAD A REEL JUST ONE-QUARTER OF AN INCH GREATER IN RADIUS, WE COULD GET OVER 60 MINUTES OF TAPE-TIME ON IT!

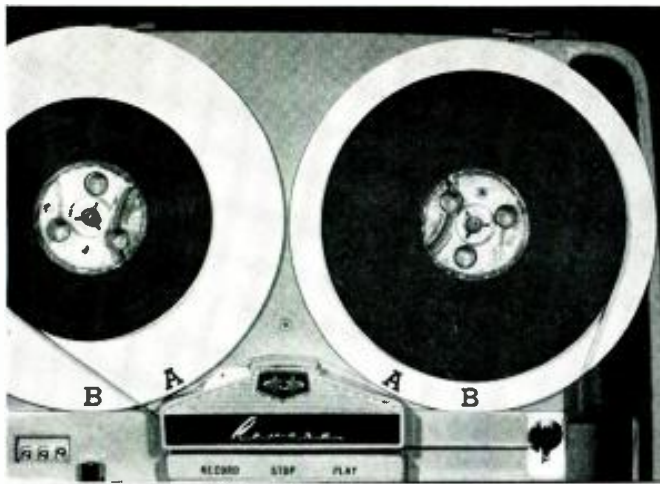
This is exactly what I've been doing recently—using an oversize reel—and the results are excellent. Perhaps, depending upon the type recorder you own, you will want

to duplicate this setup yourself (see accompanying photos) . . . but this isn't the final solution to the problem. *What we really need is a new, slightly larger tape reel, seven and one-half (or a bit more) inches in diameter, and recorders that can handle these reels.*

And truly, for what there is to gain for manufacturer and customer alike, I don't believe that this is too much to ask. The sad part of the whole situation, of course, is that so very *little* "extra" would have been necessary if the 7½" reel had been the standard size in the first place. But, the 7" reel was the one originally used (due, I suspect, to its handiness from 8mm movie film supplies) and it has worked out fine with 1½-mil tape all these years. So far! Now, though, we have 1-mil tape and putting it on this "standard" 7" reel gives us an odd-minuted length of tape. So why not appreciate this, and realize the tremendous difference having a full-hour tape reel would make?

As you can see in this bottomsides-view, very little extra is needed in reel-size to make the "regular" 7" reel hold a full hour of 1-mil tape. Scotch's new double-faced adhesive tape was used to fasten the cardboard temporarily to the reel without permanently damaging it, though rubber cement should work just as well.





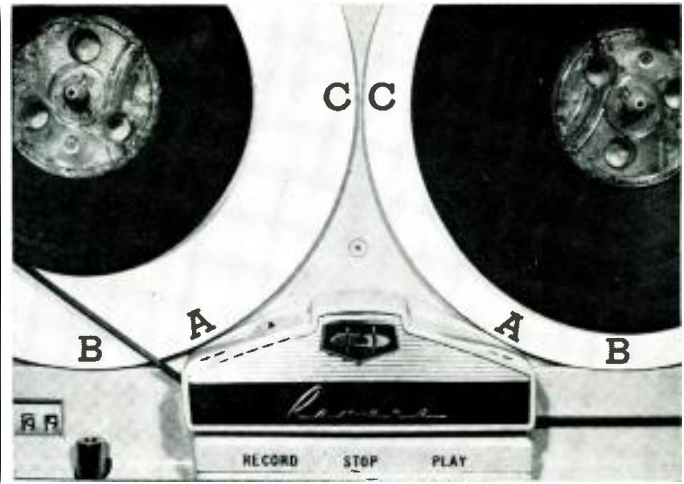
Points "A" are where the tape reels come closest to the raised escutcheon enclosing the tape-head assembly, etc. To work with your recorder, the larger reels must pass freely by at this point (possibly the extra room can be gained by "notching out" the enclosure itself?). Also, other obstructions (as "B") must be cleared.

And realize it before it's too late!

Some years back (if you'll allow me to digress a moment to tell a pertinent story) a very clever man figured out that the *typewriter keyboard* we are all familiar with was incorrectly designed for best efficiency (i.e., fastest typing speeds). Apparently the original keyboard had been influenced by the layout of a print-setters' type case, and this isn't too good for best typing efficiency. Anyway, after many years of study, this man devised a much more efficient keyboard layout that he taught himself and a few others to use. And to somewhat the amazement of everyone, it really worked. It turned out to be a tremendously worthwhile design change that easily shaved over two hours of typing time out of an 8-hour day. (You can well imagine the time—and money—this 25% saving would represent over a year's time, say especially in offices employing dozens or even hundreds of typists.) But, and this is the part that hurts, despite the very great benefits to be had by adopting this new "system" of typing, nothing ever came of it. Why? Simply because it turned out to be an impossible task trying to get manufacturers and typists to switch over. The "old" system was so firmly entrenched



Before getting too seriously involved, check your tape speed to make sure that it hasn't changed. It's just possible—though I assume not very likely—that the addition of even this little extra length of tape will somehow alter the recording speed, making it unusable for really satisfactory results.



And of course, the reels themselves must not touch each other at points "C." You can determine this immediately by placing two regular 7" reels on their spindles and checking to see that there is somewhat more than half an inch in between the reels. Or, alternately, you can measure from spindle to spindle, for over 7½".

that it was too late!

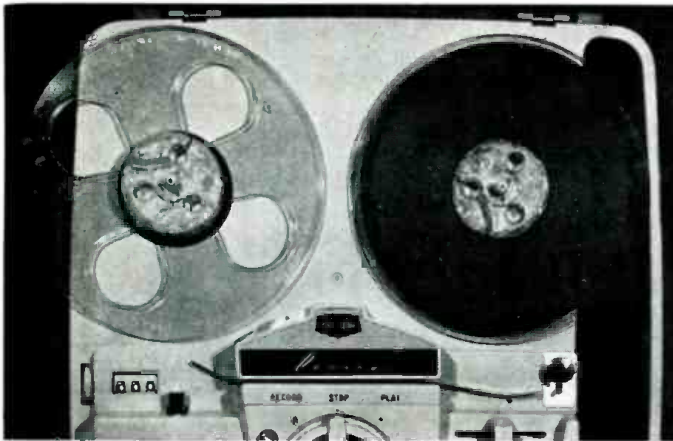
So, getting back to recorders again, let's hope that it's not too late to change our recorders just the wee bit necessary to make them "available" for the full-hour tape reel. Recording on a full-hour basis has too much to offer in both convenience and pleasure to be neglected. Certainly, this will very slightly "out-date" the present recorders that can't make the switch-over easily, but only to the extent that our "old" recorders won't be able to handle quite as much time. We won't be *losing* anything!

IN THE MEANTIME! Let's get down to a bit of experimentation with a full-hour reel that you can make for your own recorder, *maybe*. Last month I showed you how to remove one of the flanges from a regular 7" plastic reel, using diagonal cutting pliers and a file. So, as shown in the photos, all that's necessary to continue this conversion to make the 7½" reels is a piece of thin card stock (the cover of a manila folder is excellent) that has been cut to size as shown and fastened directly to the single flange of the converted reel. Being an extra half-inch in diameter, it naturally will extend a *quarter* of an inch past the outside of the reel. The big question now is, "Can your recorder handle this extra quarter inch?"

I first tried this on a Sony stereo recorder and it worked very well. Using 1-mil tape, I filled the adapted reel almost to the very edge, giving me nearly 62 minutes of non-stop time (at 7½ ips). And as I mentioned previously, it was truly a pleasure to be able to forget my recorder and concentrate, instead, on fully enjoying the program. Unfortunately, though, many recorders won't be able to duplicate this procedure, for any of a number of reasons.

So, I switched over to a new Revere stereo recorder that turned out to be *almost* made for the job. In fact, with just a very few minor, easily-made changes, *the Revere recorder is ready RIGHT NOW for full-hour recording*. As you see here, I show the Revere using the experimental single-flange extended-size reels, but double-flange 7½" reels would work almost as readily. So what is needed is the bigger reel itself.

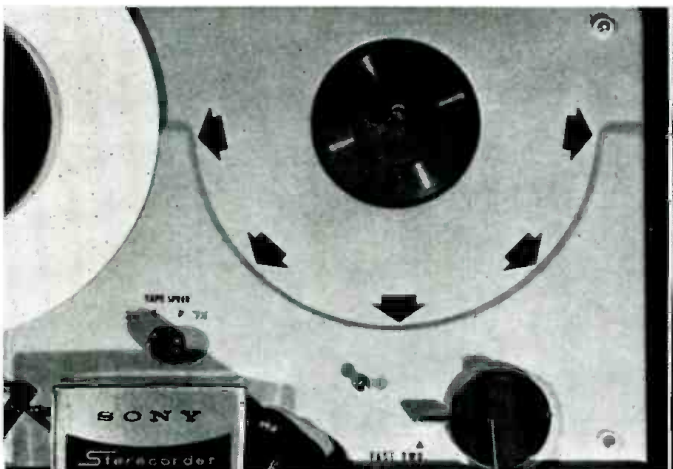
Now, to get back to those of you who would like to try this hour system of recording out for yourselves (assuming that you have a recorder capable of "adaption"), here's



This new Revere Model T-2200 stereo recorder is especially adaptable to the 7½"-diameter reels. Here the upper flanges of standard plastic reels have been removed so you can more readily see just how much room is taken up by these reels and tape.



Here, in direct comparison with the "regular" system, is the setup expanded so a full hour can be recorded at 7½ ips. I'll readily admit it looks a bit crowded, but this seems a small penalty to pay for having a complete hour of recording to a "side."



Going back to the Sony illustrates the plight of all those recorders that (sadly, unlike the easily-adaptable Revere) would have a semi-major deck redesign problem on their hands. With this Sony, the special "sunken" reel spacing would have to be enlarged enough so the proposed 7½" double-flange reels would fit in.



For the present, once we have our full-hour recording we will have to edit it down to "standard" 48-minute length so it'll fit on a 7" reel. Do this either by direct editing, saving the extra tape on a separate, smaller reel. Or (much better) by re-recording the hour tape, slimming it down to 7"-reel size electronically.

what to look for specifically. Most importantly, the centers of the two reels on your recorder must be a bit in excess of 7½" apart. This is necessary so that the two extra-size reels won't touch each other at points "C." Next, there must be enough room at points "A" to permit a reel with an extra quarter-inch radius to rotate freely by without rubbing against the tape-head-assembly enclosure. Or, if there is *not* enough room, it must be possible to somehow *cut out room* for the passing edge of the reel and tape. Finally, the design of the recorder must be such that there is no other raised deck portion or obstruction that would make it impossible for the reel to rotate smoothly by.

In the case of the Revere recorder (again), there's a slightly raised section at "B." Using the experimental reel with the piece of thin card stock atop the single flange, this doesn't get in the way at all. But if a "regular" reel were to be made available in the enlarged 7½" size, it would be necessary to actually remove a section of the deck at both of these "B" points. As far as the Revere is concerned, this is something that could easily be accomplished by the owners of the present machine, and it certainly wouldn't take much in the way of "retooling" at the factory to make this change-over complete in the future.

As you can see, I'm trying to promote *someone's* putting this special reel on the market for all of us to use. And actually, though I've been mentioning 7½" all along, for purposes of ultimate convenience it might be better if it were *still slightly bigger* than this. A reel 7⅝" or 7¾" in diameter would be more easily handled, since it would hold a full hour of 1-mil tape with space to spare. But this still-greater size isn't *absolutely* necessary, I want to point out. And since it might make the difference between whether or not a present recorder could be easily adapted to full-hour-size reels, it perhaps might be best to stop at 7½" maximum? NOTE! Present plastic reels are made with *rounded* edges on the outer, inside circumferences of the flanges. A rounded edge would still be okay for a 7¾" reel, say, but in order to avoid trouble with a 7½" reel, it would be better to make this a "squared" edge inside, so the final rounds of tape wouldn't be easily slipping off the edges.

So how about it, Mr. Manufacturer? Radio and TV have long ago oriented all of us to the "Hour Segment System," so why not fix our recorders to coincide with this? We certainly don't want to get "stuck" like the poor old typewriters.



Jo-Jo, the clown, plays his trumpet before the big show begins. Performers have many talents besides those which they display under the big top and which might make good recordings.

RECORDING UNDER THE BIG TOP

by L. Mallory

Photos by the author

... make your next visit to the circus a lasting one—record it.

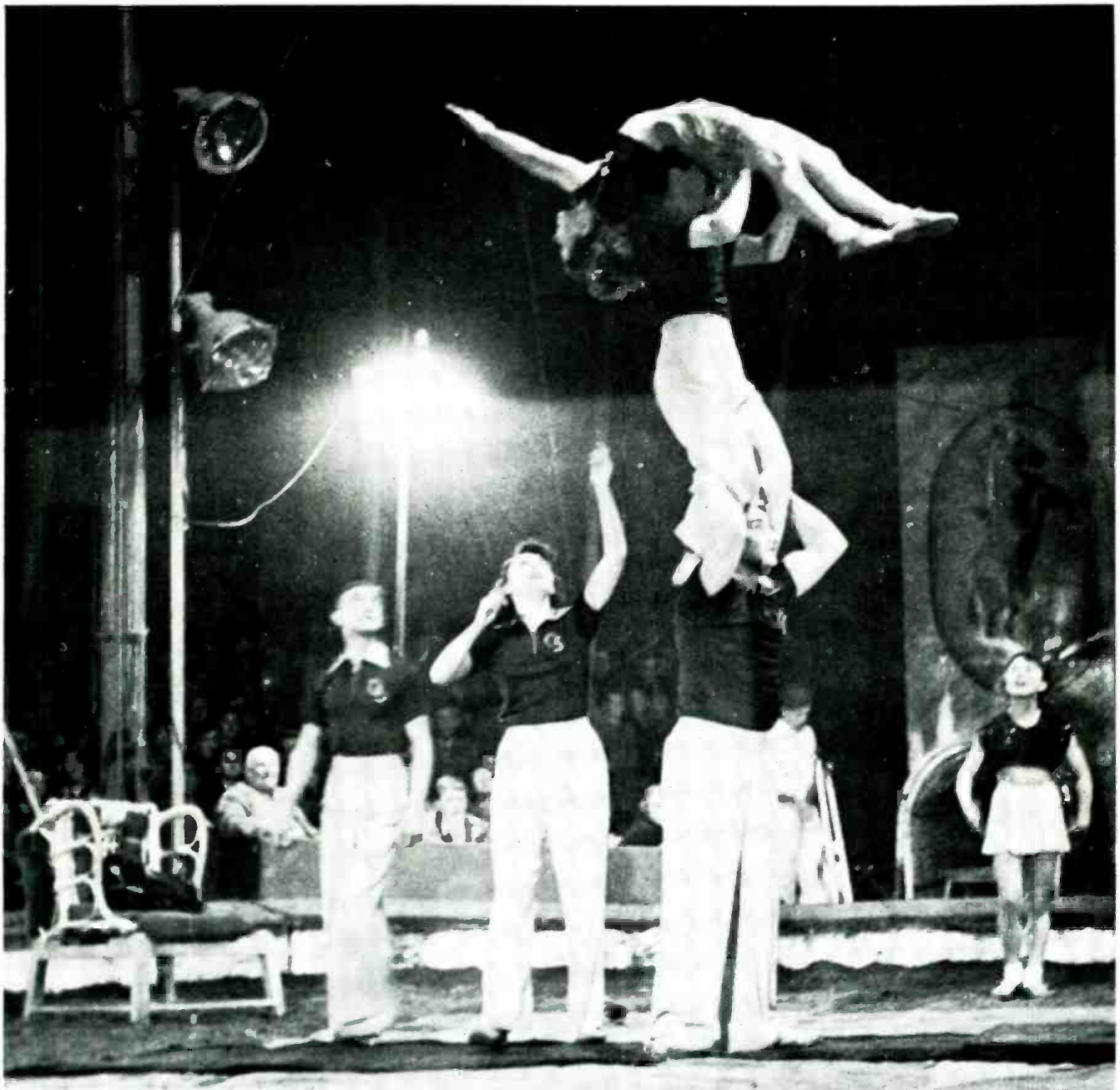
STORIES can be created by recordings just as easily as a series of color slides or a movie film can picture an event. Both these mediums have one thing in common: they need planning and thought before actually shooting or recording.

While photography is a visual medium, the man behind the camera selecting the scene and angle, recording usually requires a commentary to describe what the eye is unable to see. In this case the pictures conjured up in the mind of the listener depend on two things: the descriptive commentary coupled with sound effects and recorded interviews. But the creative angle remains the same. There is just as much skill and technique needed in the putting together of a documentary tape recording as in the making

of a movie, and it can be just as enjoyable.

Some time ago the circus came to town and the author felt that it would be exciting and interesting to make a recording of the performance. Permission was first obtained by seeking the owner's consent. Once he was assured that the author would not interfere with the show, it was readily granted.

As photographs may well be wanted to illustrate the recordings, or vice versa, it is as well to get the complete co-operation of the artists. The first two days were spent watching the show, noting the high spots and talking with the various acts behind the scenes. By this method a picture of circus life, both the angle seen by the public and the backstage life were absorbed. One began to get



The culmination of a dangerous stunt when the girl is caught as she flies through the air. Recordings should be made of the actual show with the band, the noise and confusion that means circus in any language.

the "feel" of the circus. It was remarkable how many pieces of information not generally known to the public, came to light as the author wandered around, chatting with performers, attendants and those who looked after the animals.

The balancing act of Arturo Dressler with its high spot when he sways perilously high above the ring on a flexible steel pole provided plenty of tension. Arturo always checked the wire himself, going outside the Big Top after each show to make certain that the wires were at the correct tension. He and his family came from Vienna, Austria, and the author spent a long time with him gleaning details of circus life throughout Europe.

Jo-Jo the clown had his own stories to add. Clowns can be as amusing behind the scenes as they are out in the

ring. Even when the show is over and the crowds have left the big top, work still goes on. Animals are brought into the ring to be trained for new acts.

Little things like an inquisitive llama who developed a taste for the author's buttons, or the elephant who wanted to be friendly and demonstrated this desire by wrapping his powerful trunk around me and gently but firmly pulled me towards him; all are in a day's work.

While the sound recordings are more or less simple, the commentary needs a great deal of practice. There is no time for hesitation or repetition of a particular word when describing something that is actually taking place before you. The old saying "Practice makes perfect" is very true. To gain experience and a fluency, the average person has a rather small vocabulary, try taking the recorder out-



Norman Harker, the singing cowboy of the show can provide some Western-style tunes . . . and a personal interview.

of-doors and describing the scene in front of you. The back porch with its view across the street, anything will do for a start.

On playback listen carefully to hear if the scene which you are familiar with is pictured to your satisfaction by the words you have used. Would a friend be able to recognize it from your description? Can you recognize it?

All of us, even the radio commentators, have a word which we are particularly fond of. This will keep coming up. And nothing is so irritating as the repetition of any particular word every few seconds.

Two very common words whose constant use can well be avoided are "well" and "now."

The big night has arrived. We have spent sufficient time getting the feel of the circus and now we are in our ring-side seat waiting for the show to commence. The first act is the Arabian horses. The music goes into the number and the audience are hushed as the magnificent horses come trotting into the ring. We start our commentary.

"Beneath the colored spots, seven perfectly groomed horses led by José enter the ring. Their trappings sparkle in the beams of the spotlights as with heads held high they canter round the ring in time with the band." Then for a change of scene: "Arturo Dressler the high wire expert from Vienna enters the ring to applause from the expectant audience. (Applause recorded in the background.) He quickly climbs the swaying rope ladder watched by hundreds of pairs of eyes and followed by the spotlight. High above the ring he stands waiting for the roll of drums which will signal the start of his death

defying act. There is nothing to save him should he fall from the slender wire stretched high across the tent."

Our commentary might go something like that. All the time the sounds around us are also being recorded. If we have successfully blended commentary and sounds we should, on playback, get the tenseness and atmosphere that was actually present in the Big Top.

These scenes can be interwoven with personal interviews, little sound pictures of the artists themselves and their lives outside the ring. Our skill with a splicer can greatly help in the finished product.

I still have many pleasant memories of the week that I spent with the circus when it came to town. Every morning I was there, talking with the hands and the artists. In the evenings I watched the show until I knew every little detail, every act and what they would do.

New friends were made and one got an insight into a side of life that isn't often seen by the public. Good pictures were obtained and these, with the location recordings, bring back the show as vividly as if I was actually there once again.

Why not try and make a tape documentary? It is good fun and one has a very definite sense of achievement when the final tape is played, bringing to life in sound many hours of hard but enjoyable work.



Arturo Dressler, after the performance, tries a new trick to add to his act. Note the safety rope to prevent him from falling should he lose his precarious balance. Personal recorded interviews with circus folk make very interesting tapes.



Eddie Fisher making a recording with Hugo Winterhalter. The mike is a ribbon mike which is live on front and back and dead to the sides. Other mikes were used to pick up the orchestra, being mixed with Fisher's mike for the final complete result.

Recording Your Voice

by Mark Mooney, Jr.

*... there's many a slip twixt the mike and the lip
—here's how to avoid some of them.*

THE first time you hear a recording of your voice you will probably be shocked, or at least rudely surprised. "I don't sound like that," or "Do I really sound like that?" is the almost universal reaction.

Actually there is a good reason for these comments for ever since you started to talk you have been hearing your voice from inside your head, not from outside vibrations in the air to your eardrums. Consequently, until you have recorded and listened to a playback of your voice on a tape recorder, you never knew how you sound to others.

In this respect tape recorders are rather merciless. Built to be high-fidelity machines, they will faithfully record and play back every sound that reaches the mike. Hence there is no use denying that you "sound like that" for the answer is that you do . . . most likely.

We say most likely because there is one small matter

that can change the way you sound, although not by much. This is the way in which you treat the microphone. If you are given to popping your "P's" or hissing the sibilant sounds, incorrect recording can accentuate those faults and make them sound worse than they really are.

The microphone which came with your recorder is a good, general purpose mike, quite adequate for voice use. It may be a crystal, ceramic, or in some cases a controlled reluctance or even a dynamic. It matters not so much what kind it is as how it is used.

For recording a single voice in normal conversational tones, a distance of eight inches to a foot from the mouth is about correct.

This distance may vary with particular microphones and recorders. As a general rule, the crystal mikes are more sensitive than other types since they put out a rather strong



Recording out of doors introduces the problem of wind noises interfering with the recording. Relief from this may be had by putting a handkerchief over the mike. The recording volume must then be turned up to compensate and the mike should be shielded from the wind as much as possible by interposing the body or doing the interview in a sheltered place, if possible.

signal to the recorder. A more expensive type of microphone may actually be less sensitive but it will have a flatter "curve" and thus reproduce all tones more faithfully than the cheaper mike. Many of the finest mikes have an output so low they cannot be used with a home recorder without amplification.

The sensitivity of the mike and the amount of amplification in the recorder will determine the best distance for the mike. A few recording trials will show what this distance should be.

It must be remembered that the mike will pick up all

sound it hears, without discrimination. The baby crying, traffic noise, the vacuum cleaner upstairs, are all sounds as far as the mike is concerned and it will pick those up along with the voice.

If the mike is at too great a distance from the mouth then the volume for recording must be turned up higher. This, in turn, will bring in the unwanted sounds more prominently.

Miking the voice too close will lead to some distortion and the recording of breath noises. There are times, however, when close miking is used for special effects but for general recording and an accurate reproduction of the voice, the standard distance should be used.

The movement of the mike only a few inches toward or away from the mouth can make a considerable difference in the volume of sound recorded on the tape. The best way to prove this to yourself is actually to make a recording and deliberately vary the distance. You can note the variation in the recording level indicator and also hear it quite plainly on playback.

Obviously the answer is to hold the distance constant. We are great believers of microphones on stands. For one thing it eliminates the possibility of noises coming about through handling the microphone. It also frees both hands and makes script reading easier and it keeps the mike on one fixed spot and lessens the chance for variation.

Some microphones supplied with recorders have the standard $\frac{3}{8}$ " threaded hole in the base and can be attached directly to a standard microphone stand available at most radio parts houses. Others have $\frac{1}{4}$ -20 threads in the base and these will accept the screw on a photo tripod. Still others have no holes whatever and are intended for hand holding only. Adapters are made for some of the latter mikes, kind of a clamp arrangement to hold them and a standard $\frac{5}{8}$ " hole for attachment to a regular mike stand.

In addition to the floor stand type of mike holding



Holding the mike in the hand is satisfactory if care is taken to maintain the distance between the mike and the mouth. Variations in this distance will lead to spotty recordings which vary in volume.



More than one microphone may be needed for group recording. If only one is available, it should be placed in the center of the group and the voices arranged around it on the basis of their loudness and strength. The heavier and louder voices should be placed farthest away. The group should be cautioned to speak up and to speak one at a time. Two voices recorded together results in a mish-mash.

device, there are desk holders and boom stands which are handy for putting the mike where you want it despite obstacles, such as over the middle of a grand piano to pick up both voice and piano.

Even putting the mike on table or shelf is better than hand holding it. Beware, however, of vibrations that may be transmitted to the mike. For instance, should you put the recorder and the mike on the same table, it is quite possible that the vibrations of the motor and deck will be transmitted through the table to the mike and add noise to your recording.

If you must have the mike and machine on the same object then put a pad of cloth or rubber under the mike to cushion it.

Some people seem to do better at recording their voices when they are seated comfortably at a table or desk. Others feel that the only way to get a good delivery is in a standing position, as would be used when addressing an audience. Either way is satisfactory and you should use the one which puts you at the greatest ease and is most convenient.

If you lack a microphone stand of either the desk or stand type, you can put the mike on a pad of cloth on the desk or table, as was mentioned earlier or for a standing position, put the mike on a fireplace mantle or on the top of a bookcase.

In recording two voices using the same mike, the tone and loudness of the voices must be taken into consideration. There is no substitute for a few trial recordings. The object is to achieve a balance between the two which will permit both to come through loud and clear. If one voice is heavy and the other weak the recording will suffer.

The answer to this particular problem is to put the stronger or heavier voice at a greater distance from the mike.

Also the microphone pickup pattern must be taken into consideration. There are three general patterns, omnidirectional, bidirectional and cardioid (heart shaped).

The omnidirectional mike is one which has a pickup

pattern which is equal in all directions. This is best typified by the "eight-ball" mike which is spherical and in which the pickup element faces upward so that sound from whatever direction will reach it with the same intensity.

The bidirectional mike is best characterized by the ribbon or velocity mike. This microphone has excellent pickup from the front and rear and is practically dead at the sides.

The cardioid mike picks up from a wide angle in front of the mike and falls off rapidly at the back. It is this type of microphone which is generally supplied with recorders.

There are other mike designs, such as those which pick up a narrow beam where the mike must be used at a considerable distance from the sound source.

For a two-voice recording any type may be used. The omnidirectional mike should be placed between the speakers and below the level of their mouths so that the sound will reach the mike diaphragm directly. As was mentioned, the lighter or weaker voice should be closer to the mike than the heavy voice.

With a bidirectional mike, the two speakers may be placed together in front of the mike or the mike may be placed between them, as with the omnidirectional mike. In this case, however, the mike should not be below the level of their mouths. This is the technique usually used in radio stations for recording interviews.

When using a cardioid mike, the two speakers must be placed together in front of it although the distance between them may be greater than with the relatively narrow-beamed bidirectional mike. Again, the weaker or lighter voice should be the closest to the mike.

As the number of voices increases beyond two the arrangement of them around the mike will vary with the number. Here convenience and physical limitations are the governing factors.

With an omnidirectional mike, the people may be arranged in a circular pattern so that all are more or less equidistant, allowing variations because of voice characteristics.

If you are using a bidirectional mike, the group may be split in half putting an equal number of people in the pickup beam on either side of the mike.

With the cardioid pattern mike, the group should be arranged in a semi-circle in front of the mike. Heavier and louder voices may be placed on the sides of the semi-circle where the pickup pattern of the mike begins to fall off. They will then register at about the same level as the others who are more nearly in the beam.

People may also be grouped in a circle around a cardioid type mike if it is placed face up between them and is low enough, in relation to their mouths, so that their voices may strike the diaphragm directly.

As the number of people around the mike increases the distance that they will be from the mike will likewise increase. This will necessitate turning the recording level volume higher to compensate and the need for a quiet background will become greater. Some compensation may be had by asking the people to speak up firmly and in good voice but do not depend upon this too much. Generally people will tend to lapse back into their normal voices when reading from a script or speaking ad-lib.

Perhaps the most important factor in group recording is that you impress upon those to be recorded that they speak one at a time. One or more voices recorded on top of each other results in the blurring of all since the mike cannot distinguish between them as we do, having two ears to recognize depth and perspective.

If the group is fairly large, more than one mike may be needed. These may be plugged into a mike mixer which will combine their inputs into one channel to be fed to the recorder. The mike mixers may be obtained from radio parts houses and the better tape recorder dealers. Since they are relatively inexpensive, they are good investments.

If you have a stereo recorder you can position the two mikes as may be necessary to get the balance you want and make a stereo recording. The two stereo tracks may be later combined into one by copying them into another

recorder, feeding both channels into the one, or the recordings may be played back in stereo using the external amplifier and speaker.

To achieve the best recording results a mike must be "worked." Basically this means treating it as though it were a human ear.

It will pay you to experiment a bit with various recording levels and voice levels. Speaking in a very soft and confidential tone into the mike, close-up, produces a very different effect than a normal voice recording. When doing this watch out for breathing sounds and control them.

At the opposite extreme is a loud shout which might be called for in a dramatic recording. This should not be made directly into the mike or you will simply get blast and distortion. Instead, the performer should turn his head away from the mike, to one side. This will keep the recording crisp and clean and, at the same time, provide the forcefulness of the shout.

In the same way, those who pop their "P's" should talk over the top of the mike rather than directly into it. Hissing on sibilant sounds which is objectionable may be reduced by speaking over or across the mike.

Room acoustics will also play a part in the sound of the finished recording and indeed, may often be used to create some special effect.

Voices recorded in a live room will have an "echoy" effect, those recorded in a dead room will lack this quality. In a live room, such as a bathroom with hard floor, walls and ceiling, the sound bounces and reflects, the reflections being added to the direct sounds coming from the mouth.

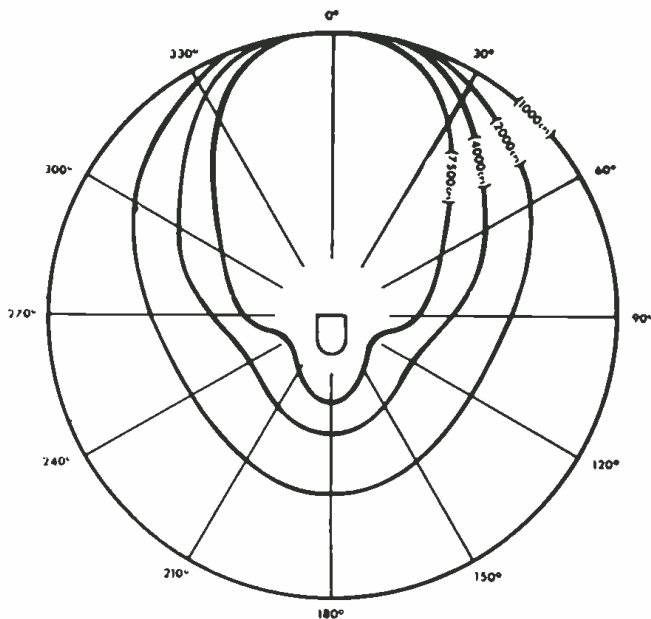
This may be put to good use if you wish to imitate speaking in a large hall. Set the microphone about 1/3 the way into the bathroom and make your recording by shouting in a loud voice toward the mike from the doorway. Try it with the mike pointed toward you and also with the mike pointed toward the wall of the bathroom away from the door so that mostly the reflected sound is caught. You will be amazed how much like a Fourth of July orator you can sound.

If you can't make this setup for one reason or another, the same effect may be approximated by placing a tin dishpan behind the mike to reflect sound back into it. The "tinnier" the dishpan, the better.

You can create your own dead room by draping any sound absorbing materials, such as blankets, etc. on the walls of a room, or even on a screen near your recording position. A rug should also be on the floor. The average living room, with its draperies and over-stuffed furniture will approach the effect of a dead room and is fine for recording.

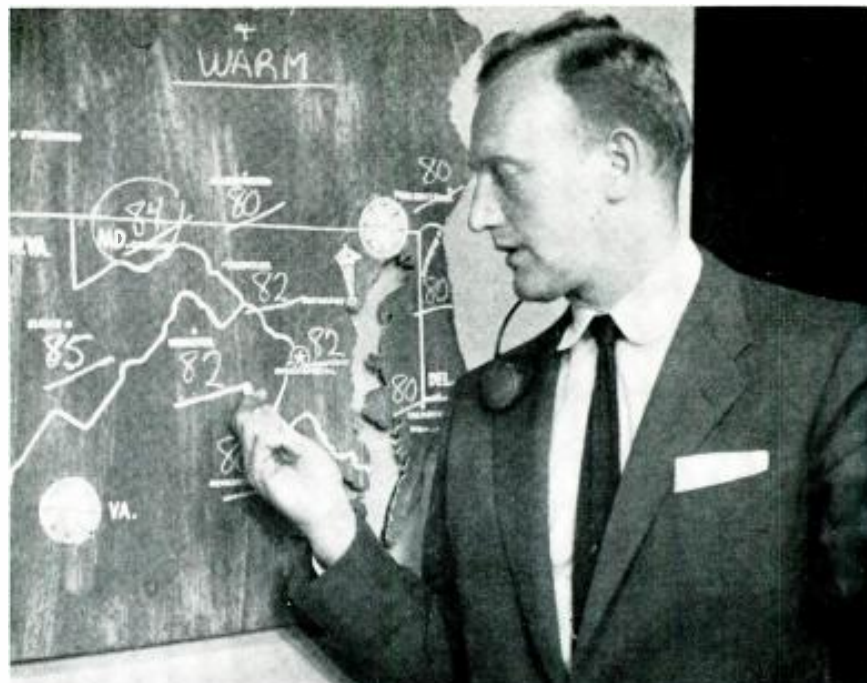
It is also possible to alter the sound of the voice through the use of filters, such as the Audio-Baton. This instrument permits an endless number of settings and by cutting some frequencies and boosting others, the voice character may be altered.

When making voice recordings outdoors you may have to cope with another factor—the wind. A fast moving current of air across the microphone will blur the speech and may even be strong enough to cause thumps and complete washouts of the sound. Some microphones have built in windscreens to cut down on this effect but you can achieve much the same thing with a regular mike by placing a handkerchief over it.



This is a pick up pattern of a microphone. Note that the greatest pickup occurs in front and somewhat toward the sides, falling off rapidly toward the back. Mikes with patterns such as this hold down unwanted background noise.

The lapel mike solves the problem when the person to be recorded must move around. This is an excellent type of mike to use with lecturers and public speakers who then are given freedom to move about rather than being forced to stand at the lectern.



For recording under such conditions, say a sidewalk interview, the mike should be shielded from the wind as much as possible. You can do this by recording in a sheltered place if possible, or by shielding the mike from the breezes with your body.

Traffic and other noises will intrude on the recording so the mike should be held close to the mouth of the person speaking. In an interview, the person doing the interviewing should control the mike tilting it first toward himself and then toward the person being interviewed. Distances should be kept the same in order to preserve good balance between the two voices.

The microphone should always be well protected while in transit. It should never be placed in the glove compartment of a car in the summer or on the rear deck where it will heat up in the sun. This is especially true for crystal mikes which may be permanently damaged by excess heat.

The recording of the singing voice, or voices, follows the same general principles as recording the speaking voice. Here again, the basic principle is that of achieving a good balance in groups by arranging the voices so that all will reach the mike directly and the heavier voices will be at a greater distance than the light ones.

Since the singing voice is usually considerably louder than the normal speaking voice, the mike should be placed at a greater distance. The recording volume control may have to be advanced some but generally the increased volume of the voice will take care of it.

As was mentioned with the speaking voice, the "working" of the microphone can make a difference in the singing voice likewise. A very soft and throaty effect can be had by lowering the singing voice and having the mike close up. The same precautions against breath noises apply.

The fact that the singing voice is usually accompanied by a musical instrument creates some problems not attached to the recording of the voice alone. The voice and instrument must both be recorded not only in balance,

but to bring out the best characteristics of both.

The achievement of good balance is best done by making trial recordings with the microphone at different distances in relation to the voice and instrument. Once this position has been found, it should be maintained throughout the recording.

The mike should not be set on the instrument itself, such as on a piano for the mechanical noises of the piano, the thumping of the pedals and the keys will be transmitted to the mike.

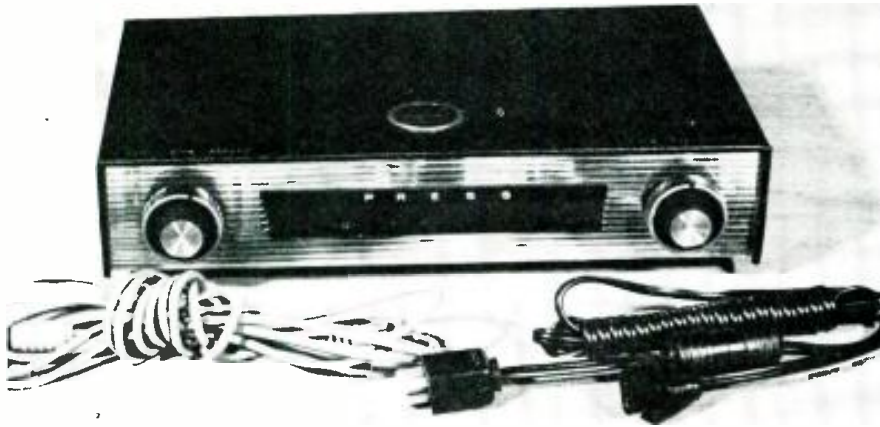
There are no hard and fast rules that can be laid down for a voice-instrument pickup. It is a matter of experimentation until the right spot is found.

Since the object of most voice recording is a natural and lifelike reproduction of the voice, it follows that the person must be relaxed. Any mike fright may either make them clam up or, on the other extreme, become "hammy." A warm-up period, with the mike present but the recorder not going sometimes helps.

Children may have to be recorded "sneaky" style with a concealed microphone. If this is attempted, the mike should be placed near where the child will be seated to cut down somewhat on background noises. For a straight recording session with the mike right out in plain sight, the best precaution against hamminess is to engage the child in some sort of game requiring his spoken response, or get him to tell of some adventure, motion picture he saw or other activity that will so engage his thoughts as to make him forget the recording is being made.

In almost all cases it is best to have the recorder threaded and ready to go. The less attention paid to the machine the better since most folks do best after they forget the mike is there.

Recording voices is basically very easy. The tips that have been outlined in this article will enable you to do a better and easier job, approaching the results achieved by the professionals. Just remember to treat the mike like a human ear—and that you *do* "sound like that" if you've made a good recording.



WEBCOR TAPE-SLIDE SYNCHRONIZER

... next device operates automatic slide projector from pulses on the tape.

THE Webcor slide synchronizer is a small and neatly made device which will operate any automatic projector from a tape recorder for automatic slide shows.

It is compact and simple to operate with only three controls: a sensitivity adjustment, a play record switch and the bar across the front which puts the signal on the tape.

The unit is furnished with a selection of cords to fit the most popular projectors now on the market and Webcor distributors will have a complete stock of cords so that any projector currently being made may be fitted.

The unit has three inputs and outputs. One is the projector trip output which accepts the cord from the projector. The second is the pulse input - output which is connected to the external amplifier output on the recorder and the third is the external amplifier jack. This is identical to the external amplifier jack on the recorder which, of course, is in use because the synchronizer is plugged into it. The external amplifier jack on the synchronizer is simply bridged across the leads coming from the one on the recorder so that other equipment may

still be powered by it even though the synchronizer is connected to the jack on the recorder.

The unit may be used with any make of recorder that has an external amplifier output and will work with any automatic projector.

The slide change is effected by putting a 60 cycle signal on the tape along with the narration or music, or if the recorder is equipped with synchro-track, or is a stereo job, the signals may be placed on one track and the narration on another. With a synchro-track or stereo machine it is often advantageous to put the background music and signals together on one

Product: Webcor Tape-Slide Synchronizer

*Manufacturer: Webcor,
5610 W. Bloomingdale,
Chicago 39, Ill.*

Price: \$49.95

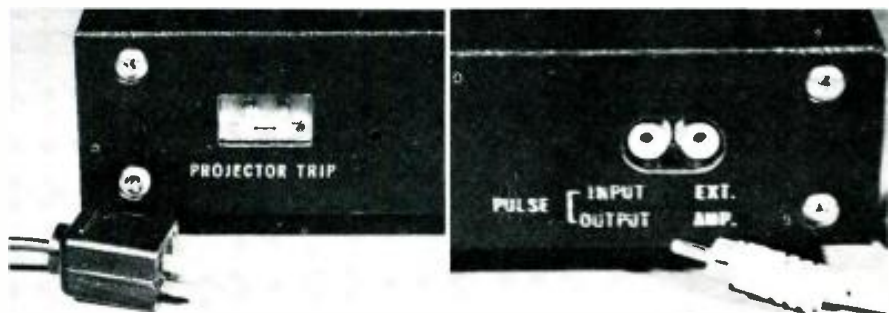
track and reserve the other for the narration. If this is done then the narration may be changed at will without disturbing the music and signals.

The 60 cycle signal is all but inaudible when the tape is played and will only be noticed faintly in a dead spot on the tape. If an audio signal is present, either music or voice, it will not be noticed since the program material will mask it.

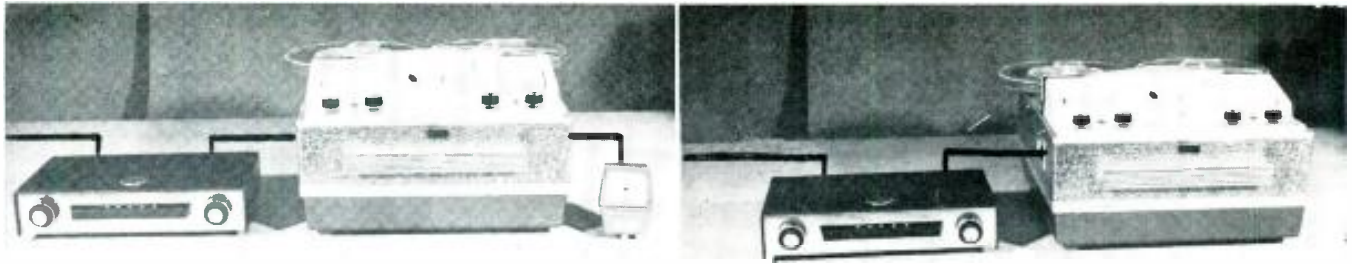
To make a tape using a monaural recorder, connect the microphone to the mike input in the regular way and then plug the synchronizer into the external amplifier output on the recorder. The synchronizer is put in the record position by turning the knob on the left to "record."

The projector is then set up and the slides loaded in the magazine. The remote control cord to fit the projector, furnished with the synchronizer, is then connected to the projector and its other end plugged into the projector trip socket on the synchronizer.

The sensitivity control should then be adjusted so that the projector trips when the bar on the face of it is depressed. Only sufficient sensitivity should be used to make the projector trip reliably every time the bar is pressed. If the control is turned up too high, the projector may trip when it shouldn't.



On the back of the unit will be found the projection trip output which connects to the projector and the input and output for the pulses. The external amplifier output is used to feed other equipment if desired.



Schematic hookup of the recorder and synchronizer. At left, for recording, the microphone is plugged in the regular jack. A cord is plugged into the external amplifier output on the recorder and connected to the impulse input/output on the synchronizer. The projector cord is then plugged into the synchronizer and is indicated by the line running out of the picture. For playback (right) the same connections are made except the mike is not used.

When this level has been established, the recording is made in the regular way, pressing the bar each time a slide change is desired.

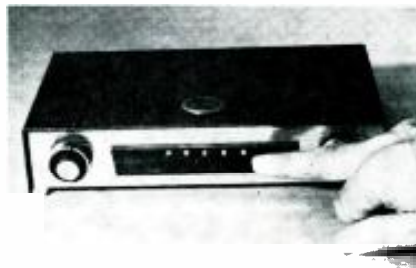
The projector should be placed as far as possible from the recording position since the noise of the slide changing mechanism may get back into the microphone and record along with the voice.

In depressing the bar to put the signal on the tape, it should be held just long enough to make the projector operate. Holding it too long may make the projector operate more than once. It is necessary to allow an interval of six seconds between slide changes.

When recording with a synchro-track machine, the narration may be placed on one track and the control

signals placed on the other later. Or the background music may be placed on one track and the signals combined with it, and the narration on the other.

With a stereo machine, the same combinations may be used except that both tracks must be recorded at the same time. The synchronizer should



To put the impulse on the tape, the bar at the front of the unit is depressed long enough to operate the projector.

be plugged into the external amplifier output jack of the track which is used for the signals.

For playback the record/play switch on the synchronizer is turned to the "play" position, the projector loaded and the recorder turned on and warmed up. The sensitivity control should be advanced a bit and the tape started. The projector should change the slides as each impulse comes from the tape.

If this is not the case, the sensitivity control should be advanced until it does. If the projector shifts slides when it shouldn't, then it is an indication that the sensitivity control has been turned up too far and that it should be backed off.

The unit worked well under test and is worthy of your consideration.

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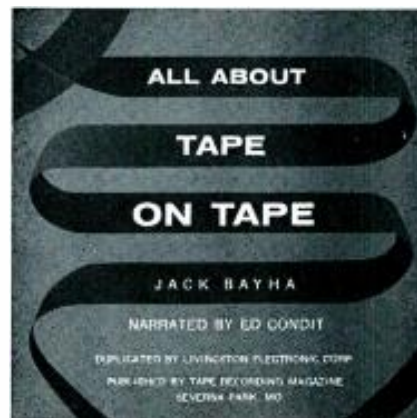
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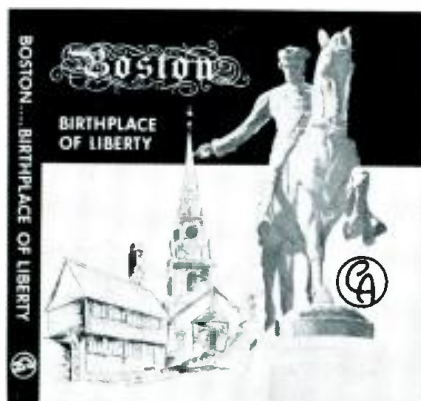
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