

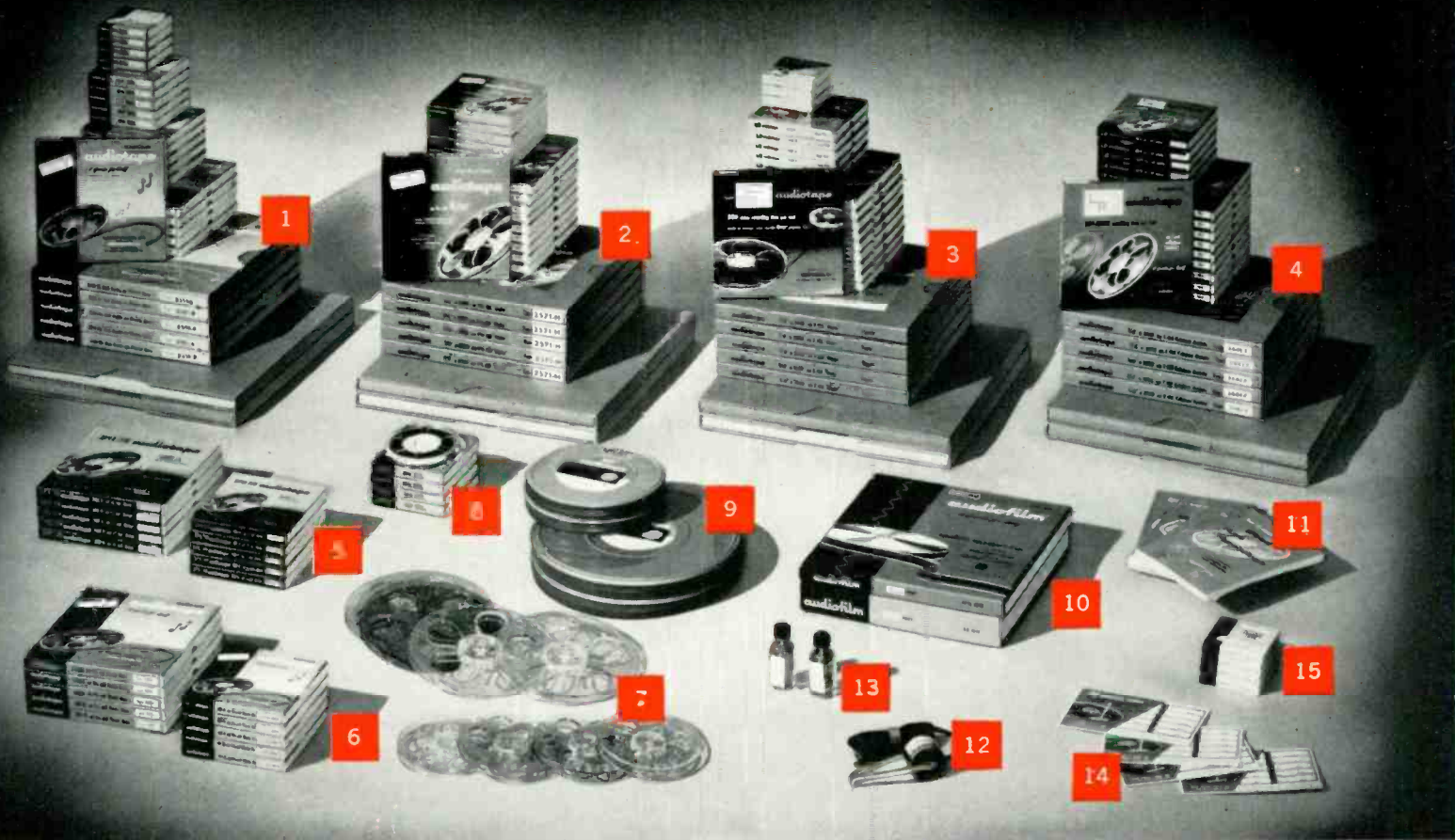
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HI-FI

TAPE RECORDING

VOL. 4 No. 2

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Cover by Jason Hailey



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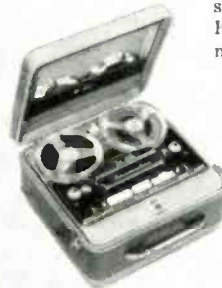


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NEW TAPES

By Georgia Sigsbee

CLASSICAL

MOZART:

Concerto No. 15 in B Flat Major, K. 450

Concerto No. 18 in B Flat Major, K. 456

Ingrid Haebler, piano

Pro Musica Symphony, Vienna

Heinrich Hollreiser, Conductor

PHONOTAPES-SONORE PM 129

7 1/2, Dual: ...\$8.95

3 3/4, Dual: ...\$6.95

Now that this Mozart Bicentennial Anniversary Year is drawing to a close, we can look back (and happily ahead) to a prolific output of releases of the works by this master of music. This veritable avalanche of recordings has brought forth much of his music which has long gone without due recognition and record publication. As a result, we are gaining more knowledge of his works, plus the complete delight derived from hearing them.

The Concerto No. 15 is scored for large orchestra and, as Mozart put it, is "bound to make the performer perspire." I do not feel Miss Haebler does this, but she renders a graceful, yet strong interpretation. The andante movement is intrinsic beauty in itself.

In the No. 18 the revelation of his creative genius is brought out in all its beauty. The interplay of the instruments, tonal colours, the poignancy and intimacy of his music are all here. Miss Haebler performs

it with great delicacy and ease and the sparkling finale is well done.

Hollreiser and the Pro Musica Symphony give a neat, well-balanced performance and the piano tones are clean. The only distraction on my copy is a slight sibilation noticeable at the beginning of No. 15 and during the andante movement of No. 18. However, this is a highly satisfactory recording of both concertos.

We have on hand two other Mozart piano concertos; No. 21 by Vicars with the London Mozart Ensemble (Omegatape 5007) which is excellent (reviewed June 1955) and No. 20 with Hans Jurgen-Walther and the Pro Musica Chamber Orchestra of Hamburg (Phonotapes-Sonore PM 5003) reviewed in February 1956.

ORGAN

THE CADET CHAPEL ORGAN

WEST POINT

MUSIC OF BACH

Tocatta and Fugue, D Minor

Prelude and Fugue, A Minor

Passacaglia and Fugue, C Minor

"Come, Savior of the Gentiles"

Claire Coci, Organ

PHONOTAPES-SONORE PM 140

7 1/2, Dual: ...\$8.95

3 3/4, Dual: ...\$6.95

Another interesting aural experience in organ reproduction comes with hearing this instrument, located at West Point Military Academy; "the largest church organ in the

Western Hemisphere and fourth largest of any type in the world." Annotations are included as to the technical makeup of the instrument.

Miss Coci, organist for the New York Philharmonic Symphony Orchestra, gives a resolute reading to the Toccata and Fugue, giving emphasis to phrasings. The Prelude and Fugue she presents with vivid feeling and skill, achieving a rich full sound. My personal feeling was that this number was, of the four, outstanding and I couldn't help but comment aloud, "Well done."

It is difficult, at best, to attempt comparisons as to an artist's particular touch. Schweitzer gives a close, spiritual feeling to the work of Bach, while Walcha produces the height of grandeur and emotion. Miss Coci gives a fine performance and, I reiterate, shows her virtuosity at the organ in the A Minor.

I fully expected hearing this instrument would be an overwhelming, impressive experience, being the fourth largest in the world. However, I can only honestly advise you not to anticipate a deep, room-filling sensation. This is probably a result of the engineering. At times you feel you are listening from the back of the Chapel, at times you are much closer. On my copy there is some residual noise which is not too distracting on the whole and on the second track two brief, but distinct, fluctuations.

If you listen to the Audiosphere (Organ Recital, 711-BN) with Kurt Rapf playing Vienna's old Piaristenkirche organ (includes the Toccata and Fugue) you will hear produced the desired effect in reproduction. (Reviewed April 1956).

I would label the PM 140 a good tape with the sincere wish it had been even better.

JAZZ

CARL PERKINS AT THE PIANO

Just Friends

It Could Happen to You

Lilacs in the Rain

Carl's Blues

Way Cross Town

You Don't Know What Love Is

The Lady Is a Tramp

Woodyn You

BEL CANTO #502

A lively jazz session featuring Carl Perkins at piano, Leroy Vinnegar on bass and Lawrence Marable presiding over the drums. Perkins has good technique; the notes state he employs his left hand in backward position and uses the left elbow to play additional bass notes, but no matter... the results are fine. "Carl's Blues" and "Lilacs in the Rain" are outstanding examples of the spirited sound this combo produces.

The fidelity is tops.

POPULAR

IT MIGHT AS WELL BE SWING

Sol Yaged, his clarinet and quintet

A-V 755 J

A lively swing tape with inspired playing and good arrangements. Sol Yaged studied clarinet under Bellison of the New York

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MOZART: Concerto No. 2, 3 for French Horn and Orch. (K.447,417), James Stagliano and Zimble Sinfonietta Boston 7-4 BN

CHORAL

STRAUSS, JOHANN: Voices from Vienna, Vol. 1, Incl. Blue Danube, Sweets from Vienna, Thunder and Lightning, featuring the 106 voice Vienna Choir with Orchestral Accompaniment. Audiosphere 706 BN

ORGAN

BACH, J. S.: Toccata and Fugue in d minor, Kurt Rapf playing Piaristenkirche Organ; also contains Mendelssohn's Sonata #2, Franck's Chorale in E major Audiosphere 711 BN

POP

LENNY HERMAN: Music in Motion, Vol. 1 - Standard dance favorites with striking stereo effects. Livingston T-1088 BN

JAZZ

RAMPART STREET RAMBLERS with Wilbur de Paris, a Sensational Hi Fi recording of Dixieland tunes. Atlantic 7-5 BN

LIVINGSTON tapes can be auditioned at your High Fidelity—Audio Dealer or Record Shop. Send for our complete catalogue and the name of your nearest dealer.

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Excellent pop tape, fidelity at its finest.

STEPPING OUT

Herb Jeffries sings, Richard Hazard conducts

STEREOTAPE ST 2

Jeffries sings "The Conqueror" and "The Heart of a Woman" in a smooth, easy style.

Two instrumentals, "Night Song" and "Passing Strange" from the Emmy Award-winning NBC-TV Matinee Theatre, go to make up this tape.

The fidelity is excellent. Jeffries has a nice voice and the background music is good.

MUSIC IN MOTION (Volume 1)

Lenny Herman and the Mightiest Little Band in the Land

LIVINGSTON TAPE LIBRARY T-1099-BN

Lenny Herman and his band have worked a completely new type of musical arrangement written and recorded specifically for stereophonic performances. This new style is called "Music in Motion" and this tape shows exciting results insofar as small band arranging for stereo sound. The tape contains familiar melodies; i.e., "Tea for Two" and "Lover Come Back to Me."

Fidelity is excellent.

SHIGENORI OHARA AND HIS BLUE COATS ORCHESTRA

Moonlight Sonata

Carmen

Villia

You Are My Heart's Delight

Boogie Woogie in Arabian Dance (Grieg) I Look at Heaven

SONY STERECORD D-3

I can't give any information about the Japanese-Irish named orchestra as we have yet to receive background on the Sony Stereocord releases. I can say this is a good orchestra playing classics in popular vein. There are many who, being complete and true classic lovers, cannot swallow the masters done in modern style; but for those who don't care or can put their tongue in cheek and enjoy it, this is a good tape.

Stereo definitely adds to the effect, from the beginning theme and throughout the drummer is outstanding; during "Carmen" he really shows his stuff. Several of the arrangements are a la Glenn Miller, particularly the "Moonlight Sonata" and "Little Brown Jug" (which isn't listed as one of the selections nor is "Clair de Lune" . . . this is #7 and "Brown Jug" is #8, so you get two thrown in extra!). "You Are My Heart's Delight" is actually Romberg's "Yours Is My Heart Alone" from the Student Prince.

After the "Boogie Woogie in Arabian Dance" they have also added Grieg's Piano Concerto. You will recognize "I Look at Heaven" as Chopin's Etude in E Flat.

Good fidelity, good dance or "just listening" music.

CHORAL

CULO COSTELLO MALE CHORUS

Loch Lomond

Blauer Montag (Blue Monday)

"O Isis" aus "Zauberflote"

Slavim Platove

Volga Boatman Song SONY STERECORD #R-5

A quiet rendition of "Loch Lomond" followed by a lively German song so don't let the title "Blue Monday" fool you. "Blue" in Germany is to take a day off from work and this song depicts the light, airy feeling one has when they have done just that.

"O Isis" from the Magic Flute by Mozart is a quiet, religious melody well sung by this chorus.

The last two numbers are a fast and spirited tune plus the familiar "Volga Boatman," both being good interpretations of Russia's folk songs.

CHORAL SELECTIONS

Serenade

Battle of Jericho

There's a Church in the Valley

Studio auf einer Reis

Krasnui Sarafan

Stenka Razin

SONY STERECORD #R-6

This is a pleasant and unusual tape. The "Serenade" is sung in a Slavish language (cannot make it out) and is a quiet number followed by "Jericho" sung in English, short and lively. The accordion is used as accompaniment in the next two numbers; the first sung in English I have always remembered as "The Church in the Wildwood." The "Studio auf. . ." is a gay German folk song. This group reminds me of a very small Don Cossack variety; note the falsetto solo in the Russian folk song, "Krasnui Sarafan." In the last song, also Russian, the gentleman who does the solo work has a good, strong voice with clear tonal quality.

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- #5. Masquerade Suite, Khachaturian (Conducted by Khachaturian)
- #6. Tchaikowsky Violin Concerto (David Oistrakh)
- #7. Kablevsky Violin Concerto (Conducted by Kablevsky)
- #8. Masterpieces of Russian Opera (Bolshoi Theatre Orch.)

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- #2. 18 Country and Western Hits (I Want You, Searching & 16 more)
- #3. 18 Top Hits (Love Me Tender, Blueberry Hill & 16 current hits)
- #4. 18 Morales Mambos (Mambo Lindo, Islaverto & 16 more)
- #5. 18 Honky Tonk Tunes (Oh By Jingo, Can Can, & 16 more)
- #6. I Believe & The Lord's Prayer (I Believe, Lord's Prayer & 16 more)

Christmas & Children's Selections

- #1. Day at the Circus
- #2. Happy Birthday to You (Happy Birthday & 17 more)
- #3. 32 Children's Christmas Songs & Carols (I Saw Mommy)
- #4. Home for Christmas (White Christmas, Winter Wonderland & 16 more)
- #5. Cathedral Chimes at Christmas (Silent Night & 17 more)
- #6. 18 Christmas Carols (Little Town of Bethlehem & 17 more)

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New Symphony Society of
Paris, Chorus & Orch.,
Leibowitz, Soloists
BH-1012 (complete on
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ORGAN MUSIC, VOL. 1 (Bach)
Viderø on the organ
at Sorø, Denmark
BH-1019 \$6.95

SYMPHONY #5 IN E MINOR,
"NEW WORLD" (Dvorak)
Oberammergau Festival
Orch., Schwertfeger
B-2118 \$6.95

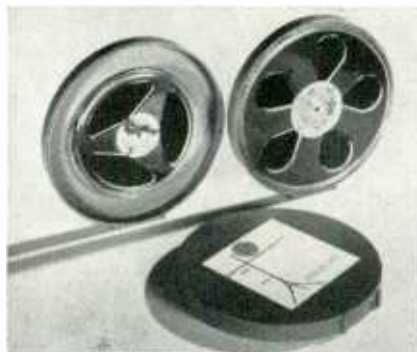
HIGHLIGHTS Volume 2 now available (as well as Volume 1). Through your dealer or direct for only \$1.50 each 7½ ips, 5" reel.

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RECORDING CORP.

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NEW PRODUCTS

TAPE CONTAINER



A new tape storage and shipping container, called the STOR-A-TAPE, has been announced by Concertapes, Inc., 522 Green Bay Rd., Winnetka, Ill. This trim container is made of tough, high-impact plastic material, and it has a center-pin design which suspends the tape reel solidly. It accommodates reel sizes up to and including 7", and it has a feature which enables it to stand evenly and neatly on a shelf. One large front-label and two edge-labels, with spaces for titling information are provided, and replacement labels are available at nominal cost. STOR-A-TAPE is excellent for shipping. Simply address the mailing-label supplied with the container, seal it across the face and edges of the package (self-adhesive), and it is ready for mailing. For additional information and price, contact Concertapes, Inc., above address.

NEW AMPLIFIER



Amplifier Corporation of America, 398 Broadway, New York, N. Y., has developed and put into production an automatic volume control amplifier. It maintains a constant output within plus or minus 1 db with input changes of 30 db. This amplifier basically consists of a two stage push-pull circuit. The operating conditions of the input stage have been carefully determined so as to provide optimum limiter action with minimum distortion. An On-Off switch, a Meter Transfer switch and an attenuator are its only controls. Frequency response is rated at plus or minus 1 db from 20 to 20,000 cps; it has an overall gain of 35 to 38 db with a signal-to-noise ratio of 60 db; maximum distortion is less than 5 per cent under conditions of full 30 db compression; and it is equipped with a self-contained power supply which is designed for 110/220 volts, 50/60 cycles with a power consumption of 30 watts. The net price is \$195. Complete information is available from the manufacturer.

AUDIOTAPE EXPANDS



Audio Devices, Inc., 444 Madison Avenue, New York, N. Y., has expanded their line of professional quality Audiocassette to include two new types: the super-thin Audiocassette, on ½-mil Mylar polyester film; and the super-thin, suitable for extended play applications where tape tension is not excessive. Also new is the longer recording Audiocassette, on 1-mil acetate, which provides 50 per cent more recording and playback time per reel. There are also the longer recording Audiocassette, on 1-mil Mylar plastic base and the high-strength, super-durable Audiocassette made on a base of 1½-mil Mylar. These tapes are now packaged in colorful new boxes, with a colored end tab for each type, which corresponds to the color of its box. For detailed information and price of these tapes, contact Audio Devices.

BIB SPLICER



A new British-made splicer, obtainable from Ercona Corporation, Electronic Division, 551 Fifth Avenue, New York 17, N. Y., has been announced. It is known as the Bib splicer. Mounted on a flock-sprayed base, this gadget is made of nickel-plated brass, and it can be mounted directly on any tape deck. The body of the splicer has two pivoted clamps which lock into position to hold the sections firmly in a channel. Vertical and diagonal mitres are provided for either editing or mending; horizontal mitres are also provided for use in trimming off surplus mending tape. A razor-type cutter, which conveniently fits under the splicer body, is included. This splicer is supplied complete

with simple operating instructions, which include hints for splicing dual-track tapes. It retails for \$3.95. Further information is available from Ercona.

4-SPEED MAGNEMITE



Amplifier Corporation of America, 398 Broadway, New York 13, N. Y., is now marketing two models of the new 4-speed Magnemite, battery-operated, spring-motor recorder. Tape speeds of 15, 7½, 3¾, and 1⅞ ips may be obtained from model 610 EM, meeting primary and secondary NARTB standards, whereas model 610 DM, meeting secondary NARTB standards, is adaptable for tape speeds of 7½, 3¾, 1⅞, and 15/16 ips. This recorder weighs only 15 lbs., complete with flashlight-type batteries which have an operating life of 100 hours, and it features a fly-ball governor controlled motor assuring constant speed, precision-made tape transport mechanism and removable dynamically balanced fly-wheel for realistic recording and playback of music. For full details and prices, write to Magnemite Division of Amplifier Corporation of America.

NO-SPILL REEL



ORRadio Industries, Inc., Shamrock Circle, Opelika, Alabama, has introduced the new Irish "No-Spill Reel." This convenient reel contains two notches on opposite sides of the reel. A rubber band is slipped over the notches, holding the tape securely in place. The "No-Spill Reel" offers easier access to the threading eye, and also features 28 square inches of indexing space on the four large flange areas, two on each side. All Irish brand tape on 7" reels is now being delivered on this unique reel at no extra cost. When previewed at recent Hi Fi shows, the public's reaction to this reel was "It's so simple, it's amazing!" It promises to eliminate any messy tangle of tape.

INTRODUCTORY OFFER LOCKLIN TAPE CLIP

SAMPLESENT UPON RECEIPT
OF 15¢ IN STAMPS

NATIONAL AND DISTRICT
REPRESENTATIVES WANTED

LOCKLIN TAPE CLIP CO.

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GIBSON GIRL TAPE SPLICERS

splices in a wink!

NO SCISSORS!
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Diagonal cuts tape ends
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WE BUY-SELL-TRADE

NEW AND USED

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HIGHEST TRADE-IN ALLOWANCES

SAMPSON ELECTRONICS

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YOUR INVITATION TO JOIN THE STEREOPHONIC MUSIC SOCIETY

Here's the most exciting news since
you first discovered the listening pleasures
of recorded tape!

AT LAST . . . you can stop wearisome shopping
tours hunting for the recorded tapes you want.
The Stereophonic Music Society has been
created to serve the needs of every music lover
who appreciates the true fidelity and
convenience of this ultimate music medium.
This unique plan offers you *one central source*
for every fine recorded tape on the market,
and—through its large volume purchases
—passes on tremendous savings to you!

MEMBERSHIP RATES

Your entire cost for participation in the Society Purchase
Plan and all the privileges described for a period of
6 Months \$6.00 1 Full Year \$9.00

*The Stereophonic Music Society opens the door to
you to the finest recorded tapes in the world—
offered to you as soon as they are made available
by all labels—at prices you can't beat anywhere.
Send in this application blank today, and enjoy
the benefits of membership immediately!*

HERE ARE A FEW MEMBERSHIP BENEFITS

SAVINGS ON STEREOPHONIC TAPE

BCA, HMV, Hi-Fi, Livingston,
AV, Concert Hall.

SAVINGS ON MONAURAL TAPE

(Complete listings in "Harrison
Catalogue of Recorded Tapes" or
"Tape Reel." You receive a copy
of one upon receipt of membership
application.)

SAVINGS ON RECORDING TAPE

All first grade, professional quality,
recording tape!

FREE HI-FI MUSIC AT HOME MAGAZINE SUBSCRIPTION

You get 1 year subscription (regular
value \$3.00) contains complete
coverage of tape, records and FM,
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FREE CATALOGUE OF RECORDED TAPES

Complete-up-to-date tally distributed
quarterly.

NO MINIMUM PURCHASE REQUIREMENT

Order as few or as many tapes you
wish.

MEMBERSHIP APPLICATION FORM

TO: STEREOPHONIC MUSIC SOCIETY, Inc.
305 Grand Avenue, Palisades Park, N. J.

GENTLEMEN: Please enroll me for a 6 month period as
a member in the Stereophonic Music Society. I understand
that I am under no obligation to purchase any specified minimum
of stereophonic, monaural or recording tapes under the
Society's member purchase plan. As part of my membership
I am entitled to a free one-year subscription to Hi-Fi Music
Magazine, as well as the quarterly listings of all recorded
stereophonic and monaural tapes available.

My Check \$6.00 is enclosed herewith (payable
to Stereophonic Music Society, Inc.)
 Money order \$9.00 to Stereophonic Music Society, Inc.)

NAME

Address Zone City State

MAKE OF TAPE RECORDER
 Stereophonic Stacked Staggered Monaural





TEEN TAPERS

BY JERRY HEISLER, National President

IT'S really swell to be coming your way a bit more regularly now that TAPE RE-CORDING has become a monthly magazine. With Christmas in the air, many of you may be in line for a new recorder, or some of you may be getting your first machine. The Christmas season provides a natural setting for using your machine. If you have little brothers and sisters, a hidden microphone near the tree on Christmas morning might provide some interesting results.

Christmas is the time for parties too, and there are many games that can be played with a tape machine. This is also a good chance for you to add to your equipment collection. You might sneak a hint in if anyone is wondering what to get you for a present. Microphone stands, a high quality microphone, spare reels of tape, a tape splicing kit, are just a few of the natural items for gifts. A gift item for the whole family to enjoy would be a reel or two of recorded tapes.

I hope my last column may have interested some of you enough so that you'll hear stereo tape soon. Great things are coming along this line. Christmastime should find

many dealers displaying this medium.

As a result of my stereo column, Mr. C. Arthur Foy of the Ampex Corporation has been gracious enough to loan me an Ampex Stereo Tape Player. This machine plays back the stereo tapes in true high fidelity. In cooperation with Ampex, I will do much research with stereo tapes and will endeavor to tell you more and more about it.

Had a chance to look over the new book being distributed by Audio Devices entitled, "How to Make Good Tape Recordings." The book, written by C. J. LeBel, Veep of Audio Devices, is a most interesting one. It is a handbook containing much information in a very un-technical manner. The chapter on splicing leaves a bit to be desired, but all in all it is an excellent manual and I highly recommend it to you.

We understand that Linda Babits, who made her debut as the first teenager to appear on pre-recorded tape via Tape of the Month Club, is reaping a very nice response. Best of luck to Linda.

I have word from the Irish Tape people that they have developed a new reel which

seems to be the answer to the problem of spilling tape. The reel has slits at opposite sides, enabling a rubber band to be placed around the reel, thus preventing tape spillage. A very simple innovation but one that serves a long needed purpose.

Audio Devices Incorporated is now in the midst of a very big contest involving high schools and universities. The contest involves entering a blank showing what choice of equipment and tape you would make if given \$2000, and what you would do with this equipment. The entries and prizes are on the basis of schools, not individuals, but this is a fine chance for a group to do something wonderful for their school. The judging is based on the most effective use of the equipment. The first prize winner will see his dream come true. Other prizes will be equipment of lesser value. Write to the company for entry blanks and details. Our hats off to Audio Devices for creating interest in the use of recording in schools.

I have just completed building a high fidelity amplifier which I have installed at home. I find that playing my tape recorder through the system improves the quality of my tapes considerably. Due to the small size of recorders (some may disagree that they are small) manufacturers are forced to keep the size of speakers small along with the size of the amplifiers. 6" x 9" is about the largest speaker size to be found in a portable home machine, and few machines exceed 8 watts of output. A home high fidelity set with an output of about 15 or 20 watts, plus a properly baffled 12" or 15" speaker, can do wonders for a tape machine. If you have a high fidelity set at home, by all means connect up your recorder to it. This isn't just restricted to the built-in installations. Most ready-made console radio-phonographs will accommodate your recorder. Take a peek behind the set and see if there aren't several jacks, one of which will take your tape output. It improves things tremendously, believe me.

The world really isn't as big as we think. This was well borne out recently when Paul Seaburn, Jr., from California dropped me a line. Among other things, Paul mentioned that he had a friend by the name of Dick Munson who was attending Northwestern University, where I go to school. Name sounded awfully familiar to me, but I couldn't place it. Turned out that Dick Munson was the engineer on a radio show I direct for WNUR, the campus station. It's interesting to note how this column comes back to me in round-about ways.

Talking about radio stations, we are making extensive use of recording equipment here at the campus station. It's really remarkable the number of things we can do. One of our shows involves recording a half-hour program at a different fraternity or sorority each week. We do this at our convenience and play it on the radio on Friday evening. Dating being what it is, we couldn't do the show live on Friday. My ever faithful splicing block has also proved to be of considerable service in narrowing down long shows to a half hour.

All evidence of the rapidly expanding use of tape recorders and accessories. It'll be just four weeks till we meet again this time, so until then, have a very merry Christmas and a "Tapey" Good New Year.

NEW

A much needed auditory means of learning how to use your tape recorder properly.

Available on one 12" LP High Fidelity record. Prepared by the engineering staff of Crest Records under the supervision of Mr. Hal Michael. Narrated by Dr. Miller McClintock of Sound Book Press.

The record consists of examples of both the correct and incorrect ways of making tape recordings done with full explanation.

A must for the tape recorder enthusiast.

Now available at your dealer or send \$4.98 direct to

Please no COD Records will be sent prepaid.

CREST RECORDS, INC.
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TAKE 1

by the Editors

A short while ago we sent out five hundred questionnaires to subscribers, whose names were picked at random from the file, perhaps you were one of those who received one. We received approximately three hundred replies and they were mighty interesting to us.

One of the things which was noted on a good percentage of the replies was the intended purchase of auxiliary hi-fi gear, tuners, amplifiers, speakers, etc., to extend the range of the tape recorder.

You can be assured that we'll be paying more attention to those facets of interest. For instance, one of the most logical additions to a recorder is a tuner. In the next issue you will find an article telling how to put one together from a Heathkit. The chap who will do it has *never* done this type of work. We're giving him the pieces, a few tools and a soldering iron. . . . and believe you us—if he can do it *anyone* can!

There will be another story by Oakes and Cunningham in the series on stereo. In another article we'll have authentic answers to a question that has some folks bothered and about which practically no information has ever been published—"Is Print-through Fact or Fable?" Don't miss it.

To those who have asked for kits to start tape recording clubs in schools we must apologize for the delay. Our supplies were exhausted and we had to get more materials printed. They will be in your hands very soon.

STATEMENT REQUIRED BY THE ACT OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946 (Title 39, United States Code, Section 233) SHOWING THE OWNERSHIP, MANAGEMENT, AND CIRCULATION OF *Magnetic Film and Tape Recording* published bi-monthly at Severna Park, Md.

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

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

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

Mooney-Rowan Publications, Inc., Severna Park, Md.; Col. Chas. E. Emery, 7 Wardour Drive, Annapolis, Md.; Robert W. Lapham, 925 N. Charles Street, Baltimore, Md.; Thomas Grosan, Jr., Baltimore Life Building, Baltimore 1, Md.; A. J. Morin, 274 Madison Ave., New York 16, N. Y.; Mark Mooney, Jr., Severna Park, Md.

3. The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

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

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

MARK MOONEY, JR., Publisher
Sworn to and subscribed before me this 11th day of October, 1958.

JEAN MARIE COVETT, Notary Public
(My commission expires May 6, 1957)

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MONAURAL
RECORDING
and
PLAYBACK



STEREO-
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● STEREO-MAGIC CONVERSION KIT ●

Adapts any Pentron tape recorder sold in the past 5 years for stereophonic tape playback.

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These regular in-stock models offer stereophonic playback plus monaural recording and playback.

T-90S: \$219.95, list
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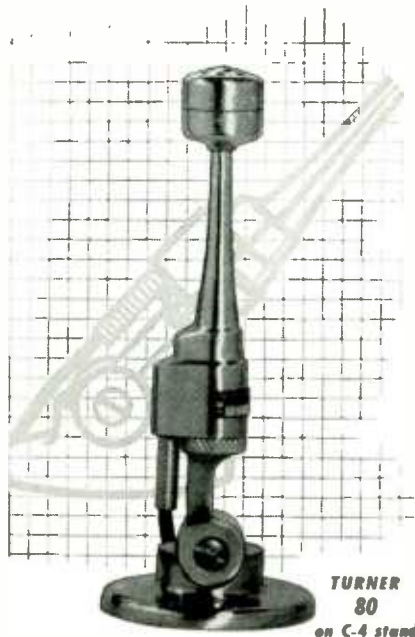
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 in buying a microphone
 ...when performance
 is guaranteed



You put performance first, naturally. No matter how convenient, compact, slim, trim or handsome a mike may be... its first job is to perform. The Turner Model 80 gives you a guarantee of superior performance.

In design, there is no comparable microphone that equals Turner Model 80 styling and compactness. Styling that pleases the eye and fits in with modern surroundings. Compactness that makes this microphone convenient and easy to use. You can cradle it in the palm of your hand.

Yes, the Turner 80 gives you performance *plus* modern, functional design. Only the price is old-fashioned. *Low*.

Sensitivity: Approx. 54 db below
 1 volt/dyne/sq. cm.
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 Weight: 5 oz. less cable.
 Cable: 7-foot attached single conductor shielded cable.

List Price: \$15.95
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 Toronto, Ont., and branches.

QUESTIONS & ANSWERS

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

Q—I would be very interested in the why and how record and playback heads become magnetized. What precautions can be taken to prevent heads from becoming magnetized? I have owned an Ampex 600 for a year and use it on the average for about five hours a week. I want to keep my recorder at peak performance. Do you think my recorder heads could be magnetized after such use?—J. S. Giffard, P. Q., Canada.

A—Over a period of time recorder heads do tend to become magnetized. This results in a loss of the high frequencies and increase of hiss level. The only preventative is regular demagnetization.

The partial magnetization of the heads is most often caused by surges of current when the recorder is on or off, especially if in the record position. These electrical surges will impart a steadily increasing amount of permanent magnetism to the heads. The amount picked up will vary from machine to machine.

The total elimination of the magnetism is very simply done. Audio Devices and International Pacific Recording Corp. both market head demagnetizers which are coils of wire wound around an iron core. When connected to the regular house current an alternating magnetic field is set up in the demagnetizer. The prongs are held against the head for a few seconds and then the unit is gradually withdrawn. When it is about three feet from the machine the demagnetizer is disconnected from the power source. The slow withdrawal of the unit from the head is of the utmost importance for the field created by the demagnetizer is gradually diminished, leaving the head without residual magnetism. Some recorder manufacturers recommend that the heads be demagnetized once every ten hours of use.

Q—My problem: When I record on one side of the tape (my recorder is dual track) leaving the other side blank it plays back all right but the blank side gets a distorted sound which has to be erased in order to record on that side. Then when I record on the second side I get a distorted sound on top of the first recording. Is there some simple adjustment I can make to correct this or do I need to take the recorder to an experienced service man?—P.C.H., Bedford, Va.

A—From your letter it would seem that your heads or tape guides have somehow gotten out of line. In a dual track recorder, there is a space about 1/32 inch wide left in the middle of the tape as a clear space with no recording on it. This prevents cross-talk between the two channels. If the tape shifts either upward or downward then one channel or the other will be heard. We would suggest that you take a pencil and press on the edges of the tape, with the recorder running in order to determine which way the shift must be made to clear the diffi-

culty. It is possible that either your record head or the playback head has shifted position.

Q—I have become a tape recording bug during the past year and I find your magazine both interesting and helpful. It seems that your magazine is not only the best of its kind but also the most instructive and up to date.

I have been wondering what information you can give me on taking tapes off the air. By this I mean, if I record something from the radio, is it legal for me to sell the tape? Also do I have to have any type of license to sell these tapes?—S.C., Boise, Idaho.

A—There are quite definite limits as to what you may do with recordings taken off the air. There is nothing to prevent you from making any recording for your own use and enjoyment, just as you may take pictures of the TV screen if you wish.

However, the courts have in a number of separate decisions firmly established the fact that a radio or TV broadcast is a definite property and the sole rights to its use for commercial purposes belong to the copyright owners or to the station or net transmitting it. It would therefore be illegal to make recordings off the air and sell them for gain.

Our June 1956 issue contained a complete run-down on this topic and copies are still available from our back issue department at the regular price.

TEST TAPE EXCLUSIVE

Encore Treasure Tape (Excerpts from Dubbings D-110 Test Tape) 4" reel, 98c ea. (plus postage)

BLANK RECORDING TAPE—3" REELS

Ideal for tape letters—Pop tunes etc. Encore Brand. 3 reels for \$1.06 (plus postage)

Q'tys. limited. Send for free catalog of interesting new products.

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BOBBIE KAY

Recording Exclusively on Tape Toons
 Organ—Novachord—Solovox—Piano
**PRE-RECORDED TAPE FOR
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TAPE TOONS

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Special Christmas Reel

½ Hour — 7½ IPS Dual Track
\$5.75 Postage Paid

TAPES TO THE EDITOR

When sending tapes to the editor please use the 3" reel and indicate the speed at which it was recorded and whether it is dual or single track. We will listen to your tape, make notes from it for use in this column and then reply on your tape. Please keep tapes reasonably brief.

If you do not own a recorder a letter will be acceptable. Address tapes or letters to: The Editor, Film and TAPE RECORDING, Severna Park, Md.

To the Editor:

Help! In response to my note in a recent issue of TAPE RECORDING I received a note from a fellow in Brooklyn, N. Y. I have since misplaced his letter. He was a DJ once at Mars Hill, Maine, I believe. Please help me find him.—Fred Goldrup, Lisbob Falls, Maine.

Best we can do is publish this plea. Our stencils are filed by city and state and without knowing his name we don't stand a chance of finding him among our thousands of subscribers.

To the Editor:

I am a young Canadian, twenty-two years old, and I am just starting in the tape recording field. I have a two-speed 3¾ and 7½ ips recorder. What I am interested in is tape correspondence with someone my age, male or female. May I ask you if you have any names and addresses you can give me or can you give my name and address to someone who wishes to taperecord also. I will be very delighted indeed and very enthusiastic to hear from my next door neighbors, so to speak, in the United States.—Gerry Spurell, 125 Mackenzie King Street, St. Johns, Quebec, Canada.

We advise Mr. Spurell, and any others who wish to taperecord around the world that they join a tape club (see page 30). For the cost of small yearly dues the clubs will furnish rosters of their members with ages and interests indicated. Taperecording is a fascinating hobby, a real thrill.

To the Editor:

Would it be possible, through the good offices of your magazine, to locate the Han-

dling agents for the Grundig Tape Recorders? I would like to compliment you on the fine magazine you are putting out and the quality of the articles therein. It might be of interest to you that Peter Hatty and myself, both members of the Voicerecording Club, are currently voicerecording from inside the Arctic Circle.—T. P. Hill, Canada.

Write to DeJur Amsco, 4501 Northern Pkwy., Long Island City 1, N. Y.

To the Editor:

I noticed in the October issue that A.W.H. of Ann Arbor, Michigan, would like to know how he can get a reverse play from any tape he records. I have a dual track recorder and on my machine it is very simple. Remove the two brass tape guides and capstan rubber roller. Insert a small washer of 1/8" thickness—no more—no less. Cut circles of cardboard or wood of the same thickness and place under reels. Record as usual—and this will record on the bottom track. Remove washers from tape guides and roller, also reels, and place in original position. Turn over recorded tape which brings sound track on top and the reproduction, of course, is backward and will be clean and undistorted.

Now someone please—help, aid, assistance. My machine is push-button type, solenoid controlled. When pressing on the recording key there comes from the playback a terrible snapping sound. I have tried turning down the volume control completely when pressing the record key, however, there is still a perceptible click. Somewhere among the thousands of Hi-Fi TAPE RECORDING readers there must be someone who knows how to eliminate this tape-worm nightmare.—Bert De Gooyer, Route 4, Box 274, Yakima, Washington.

You might try putting a spark suppressor across the make contacts of the switch which actuates the solenoid. This consists of a 1/2 mfd., 400 volt condenser and a 200 ohm resistor connected in series across the switch. Also check the switch for bad contact. Anyone else with suggestions?

To the Editor:

Would you please ask the readers of this column if any of them have a recording, tape, disc or wire of Orson Welles' "Invasion From Mars" radio show of the 30's. Ask them to contact me.

I appreciate very much your decision to go on a monthly basis. Enclosed is my check for two more years of pleasurable reading.—Richard C. Randt, 308 N. Main Street, Pearl River, N. Y.

CORRECTION: The prices of Omega-tape's stereo tapes were incorrectly listed in the last issue. All 7" reels are \$10.95, and all 5" reels are \$7.95.

the
Magnificent

Ferrograph

The world's finest
hi-fi tape recorder



Series
3A/N

audiophile net \$379.50

professional
quality at nominal cost

The world-famous FERROGRAPH magnetic tape recorder, designed and developed primarily for professional use, has been re-styled for YOU — the discriminating audiophile, the progressive educator, the efficient businessman, the music lover.

Standard equipment with the British Broadcasting Corporation, it is a byword with cultural, educational and scientific users throughout Europe. The FERROGRAPH is unconditionally guaranteed to meet the most critical performance requirements.

Two models of this versatile dual-speed, dual track recorder are now available in LIMITED QUANTITIES, with tape speeds of 3¾" and 7½" or 7½" and 15" per second. Both models feature the employment of a synchronous hysteresis capstan motor providing unparalleled long-term speed stability, thus avoiding pitch errors on playback.



ALL FERROGRAPH RECORDERS AND TAPE DECKS have three motors. Custom installation models with tape speeds of either 7½ and 15 ips or 3¾ and 7½ ips are available. (Custom model 66/H illus. at left).

Write for performance specifications and the name of the franchised dealer in your area.

ERCONA CORPORATION
(Electronic Division)
351 Fifth Ave., Dept. 38 New York, N. Y.

In Canada: Astral Electric Co. Ltd.,
44 Danforth Rd., Toronto 13

RECORDS FROM YOUR TAPES

Meetings, concerts, training aids, etc. economically re-recorded on permanent hi-fidelity discs. Professional quality —overnight service—all speeds—any quantity. Write for Free Folder and Prices

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FREE! 10-Reels of tape with famous-make
TAPE RECORDER

Special sale price. Push button controls. Excellent tone quality. Sturdy plastic leatherette case.

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★1800 ft. of recording tape on 7-inch reel **\$2.49**

Largest stock of pre-recorded STEREO and REGULAR TAPES

THE HI-FI SHOP

2 N. Howard St. Baltimore 1, Md.

Beat The Horses

by Al Stone and Don MacRae

(Photos by the authors)

... this tape game is perfect for parties or an enjoyable evening at home.



ALL BETS IN—

YES, you *can* beat the horses with your tape recorder—or at least some of your friends can. No, this is not a "system" guaranteed to make you a fortune over night. However, you'll reap a fortune in fun with this recorded parlor game, especially if friends drop by and the ice box is empty. You need no tails to pin on donkeys. You don't even need the donkey—he couldn't run in this class. This exciting game has all the thrills of the "Sport of Kings" and is as difficult to beat as the "hay-burners" themselves. Here's the way to make and play it.

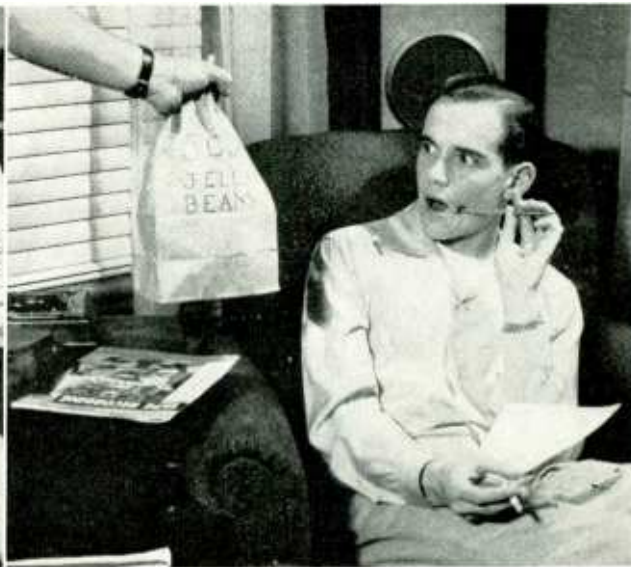
One person in the crowd is appointed the "bookie" (the normal hazards of his profession are eliminated in *this* game). He may also have an "operator" assistant, preferably a non-player, to run the tape recorder for him. The duties of the "bookie" are many and the "operator" will relieve him of the extra trouble of running the recorder and thereby speed up the game. "Bookies" may be changed after a certain number of races, after a definite elapsed time, or at any other predetermined interval during the game.

The medium of exchange used is optional. You may wager buttons, matchsticks or wampum. WE much prefer jelly beans. In games of this kind, the odds are always in favor of the "bookie"—though they have been known to be upset. This is the reason for the medium of exchange that WE choose—our "bookie" doesn't like jelly beans!

You can record any number of "races" on a tape but the more the better. The more races you have on the tape, the more difficult and interesting the game becomes. Starting odds of all horses are recorded first. Following this is the actual race and then the finishing odds. The number of horses used in a race is also optional but should be consistent throughout the tape. Use the same names for the horses and always state their odds in the same order. In this way the "operator" can listen for the horse he knows will be named last in the starting odds and turn off the recorder. There's a reason for turning off the recorder at this point. Time will be saved if sheets of paper are prepared in advance listing the horses in the order given on



THEY'RE OFF!



GUESS WHO WON . . .

the tape. When the "starting odds" are announced, each player can write the odds beside the proper name on his sheet. After the odds are given for the last horse, the recorder is stopped and the players are allowed time to study the odds of all the entries and write their betting slip. The players then make their bets with the "bookie." Right here is where you part company with some of your cherished jelly beans

Any confirmed horse player will consider this next paragraph entirely superfluous. Read on—or not—depending upon your qualifications. Bets are placed on individual slips of paper. At the top of the slip, the player writes the name of the horse he wishes to bet on. Directly under this, he writes his own name. Under his name he writes the amount of his bet and the positions he is betting the horse to finish. This is done in the usual familiar code. For example, if the player wishes to bet two jelly beans that the horse will "place" (come in first or second), he writes his bet thusly: 0-2-0. The first figure shows the amount bet to win; the second figure, the amount bet to "place"; the third figure, the amount bet to "show" (finish in the first three places). If a player wishes to bet a horse on all three places, he writes his bet thusly: 1-1-1. This is known as betting "across the board." If the horse wins, he pays on all three places. A "straight" (or "win") bet is paid only if the horse finishes first. A "place" bet is paid if the horse comes in either first or second. A "show" bet is paid if the horse finishes in any of the first three places. Naturally the odds are higher to win than to place and higher (as a rule) to "place" than to "show." Odds must be stated at the end of each race for the first three horses. The winner's odds are announced for "straight," "place" and "show." The second horse's odds are given to "place" and "show." The third horse has only "show" odds. The player's original bet is returned to him plus his winnings. At this stage of the game, the "bookie" collects the betting slips (and the jelly beans) and the race is on!

Right here you have a chance to show a little ingenuity. You, as the announcer, must record numerous "races" (using the same horses) without revealing the winner to persons who have heard the race before! After the running description of the race, the "finish" odds are announced. The odds quoted for 'straight' position at the finish *must*

THE PAY-OFF!

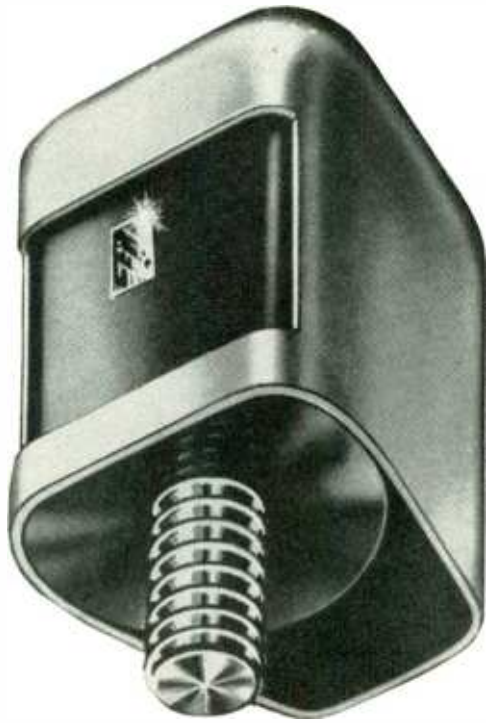
be the same as those quoted for the same horse as "starting" odds. His "place" and "show" odds should be in proportion. The same is true of the horses who finish second and third. These should be worked out mathematically before making the recording to give the "bookie" a slight percentage advantage. "ODDS" bodkins! Take heart. It's really not as complicated as it sounds.

The "bookie" takes down the names and positions of the three winners and the odds they pay for each place. He pays off the lucky players and the rest of you sit around and watch the winners eat *your* jelly beans! Another race is selected and the entire thing repeated. Some sort of signal should be placed on the tape between races. In this way, the operator can easily identify the beginning of the race and by using his fast-forward and reverse controls, or "flipping" the tape, the races can be scrambled to prevent memorizing. For the same reason, voicing of the starting odds should be monotonously similar from race to race.

If you don't care to record your own version, a pre-recorded tape of this game (plug) complete with starting signals, race descriptions, predetermined odds and playing instructions is available commercially at \$1.95 (less jelly beans) from your dealer or the House of Stone, a manufacturer of novelty tapes. There are eight races on the tape with eight horses in each race ("BEAT THE HORSES," Betatape #401). Whether you make this tape yourself or buy one, it is sure to provide plenty of thrills, fun and excitement at your next party or social gathering—and that's straight from the horse's mouth!



Left: Starting odds are written down for advance study. Right: Betting slips are prepared in the usual familiar code.



Record-reproduce head manufactured by Dynamu Magnetronics Corporation.

What You Can Do About Magnetic Head Wear

by Charles G. Westcott,

Author of *Tape Recorders—How They Work*

. . . proper head maintenance will assure peak performance from your recorder.

THE magnetic recording head of your tape machine is built to an almost fantastic tolerance. The utmost in skill and precision has gone into its construction. Today's magnetic recording head is built to a tolerance as close as ten-thousandths of an inch. The magnetic head is, in fact, the most critical and precision device in the tape recorder.

Magnetic heads not only determine the frequency response, both low and high, but also help establish signal-to-noise ratio. In magnetic head construction the pole pieces must be long enough to reproduce low frequencies and the gap sufficiently short to reproduce high frequencies.

In playback, the high frequencies on the tape are generally limited in reproduction by the length of the gap. As the recorded wave lengths on the tape approach the physical size of the head gap, the signal becomes greatly attenuated. Therefore, to properly reproduce a signal of 7,500 cps at $7\frac{1}{2}$ ips, the recording gap must not be any larger than 5 ten-thousandths of an inch or the signal will be greatly reduced.

It is not uncommon for home-type recorders, as well as professional units, to go up to 15,000 cycles at $7\frac{1}{2}$ ips. This means that the gap length must not be longer than 2.5 ten-thousandths of an inch long.

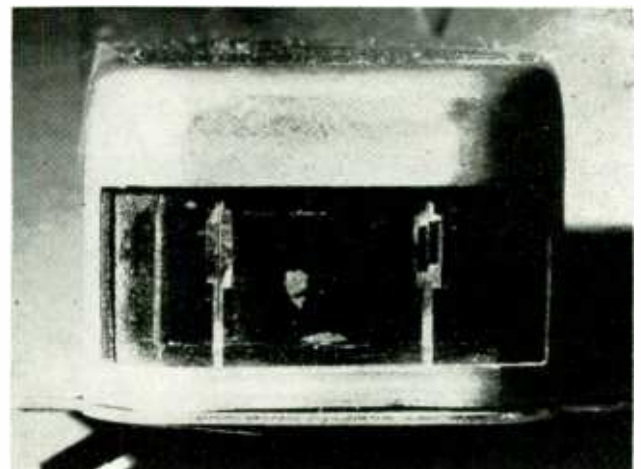
Yet, paradoxically, despite the marvel of precision engineering that the magnetic head is, little or no attention is paid to it by most recorder owners. Month after month recordings of the highest quality are obtained without the slightest regard being given to head maintenance. Of all the systems of recording and reproducing sound now in use, magnetic tape is unquestionably the least difficult to maintain.

Amazingly, this is a real disadvantage. Owners of home tape recorders and technicians in professional studios alike tend to become careless in head maintenance. All too often, not the slightest thought is given to proper head care. Yet,

when trouble starts, it is generally too late. The damage is irreparable and the worn head must be replaced.

Many misconceptions surround the problem of head wear. It is generally felt that head wear is due to the fact that the iron oxide particles coated on the tape backing are extremely hard and mu-metal, of which recorder heads are constructed, is, by contrast, relatively soft. The slipping friction of the tape coating against the soft mu-metal head may, at first glance, appear to be abrasive. The iron oxide coating of the tape is, in fact, more than two times as hard as mu-metal. However, the contact of the hard tape against the soft head is analogous to the action of a bearing.

In bearing construction, the shaft is hard and the bearing material itself is soft. The shaft rotating within the bearing



This is an enlargement of a badly worn and pitted head. Such abrasive wear is caused primarily by dirt and grime. Heads in this condition cause losses in high frequency response.

runs smooth and free. It is the dirt that works into the bearing that causes wear, necessitating replacement. A fundamental law of physics, this is just as true for recorder head wear. It is the dirt that collects on the tape which scours and abrades the head, not the iron oxide tape coating.

To prevent head wear, guides, capstans, pressure rollers and, of course, the heads of the recorder must be kept clean and free from contamination. As tape passes through the machine, minute quantities of dirt, grease, dust, as well as magnetic oxide and binder, are rubbed off the tape and deposited on the heads and guides of the recorder.

These extraneous deposits have immediate adverse effects, although the magnitude of the effect may not become large enough to be serious for some time. Although gradual, there is an inevitable loss whenever a recording is made or reproduced.

The accumulation of fine dust and binding materials gradually causes losses in high frequency response due to poor tape and head conformity. Intimate head contact is essential in attaining high frequency response. The thinnest deposit is sufficient to cause a measurable high frequency loss. Long-time accumulation of contaminating matter on the head can ultimately result in complete loss of high frequency signal. Changes in level independent of frequency can also occur when severe buildups have been allowed to accumulate.

All magnetic tapes transfer small amounts of coating and backing dust to the machine. Most of this accumulation comes from the slit edge of the tape and has a definite resinous nature. This gives the "dust" a tacky nature, assuring its adhesion to the exposed parts of the recorder. Moreover, the dust, like a fine rouge abrasive, gradually wears away the laminated metal of the head.

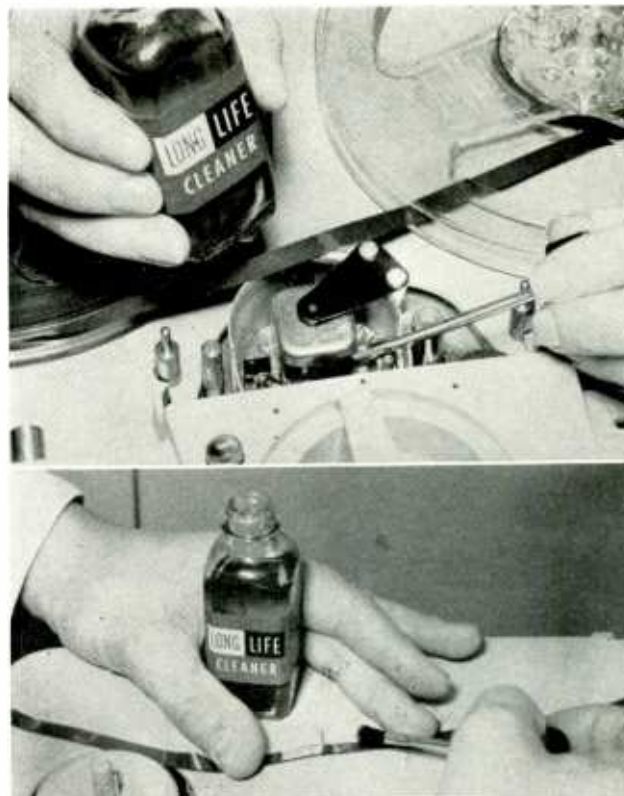
Carbon tetrachloride has been commonly used as a solvent in the past to remove these accumulations. While carbon tetrachloride is satisfactory in removing grease and oil deposited on the capstan and pressure roller (which introduce wow and flutter into the recording system) it is dangerous to use this fluid as a cleaning solvent on head assemblies.

In the construction of most magnetic heads, thin laminations are stamped to give the desired gap profile and core structure. The laminations are then stacked and cemented together to form a magnetic head. In other constructions, a single lamination is butted and cemented against the end of another lamination to form a gap. The resin used to cement these laminations and encapsulate many head assemblies is dissolved by carbon tetrachloride. Carbon tetrachloride also corrodes the mu-metal head surface.

The common alcohols (wood, isopropyl, etc.) are completely useless. They are poor solvents, having no action at all on any binder or resinous component that might be present.

Long recognizing this problem, recorder manufacturers in maintenance guides have warned against the excessive use of carbon tetrachloride: "use sparingly when cleaning heads, slightly moistening only a pipe cleaner or the tip of a soft cloth."

Until recent months there has been no alternative other than to expose precision heads to the hazards of using carbon tetrachloride. The problem of safely keeping heads and guides clean has been solved by a special solvent combination, recently marketed, ideally suited for this purpose. Called "Long Life Cleaner," this product is a blend of sev-



Top: Special head cleaners, such as Long Life, are a blend of several solvents, each chosen for its specific action on one or another of the contaminants commonly deposited on tape machines. Bottom: A silicone lubricant neutralizes any sticky adhesive not removed from a tape, and remains on the tape as a safeguard against tackiness.

eral solvents, each chosen for its specific action on one or another of the contaminants commonly deposited on tape machines.

This cleaner can be used with no fear of damage to any recording head now on the market, and is absolutely harmless to machine parts. Continued use, once or twice a week, will prevent harmful, long-term accumulations.

As we have seen in the case of a shaft and bearing, abrasive wear is caused primarily by dirt and grime. However, in any bearing, to prevent wear, a lubricant must also be present. With the introduction of lubricated magnetic tape, head wear has been definitely reduced.

In the construction of magnetic tape, a silicone lubricant is actually impregnated throughout the tape. Lying in the spaces between the oxide particles and the resin, the silicone continually re-lubricates the tape surface. The lubricant will generally last the life of the tape.

However, head wear is most effectively reduced if the head itself is also protected by a lubricant. Known as a synergistic action, a silicone lubricant coated on the head "works together" with the silicone lubricant in the tape to produce the lowest possible friction. This means that the combination of silicone in both places is more effective as a lubricant than would be expected from the action of the silicone on either head or tape alone.

Now, also available to the recordist is "Long Life Lubricant." When this lubricant is applied to the guides and heads of the machine, the solvent flashes off. Left behind is a deposit of an extremely thin layer of silicone, having no effect on the frequency response. The layer is so thin that its presence is virtually unmeasurable.



Left: Shown is a standard head alignment technique. Most head adjustments involve simply turning a screw which shifts the head from side to side. Only a very slight adjustment is generally required.



Above: When adjusting an alignment tape in a machine, care should be taken to reach the point of maximum output for the reproduce head, since a lesser peak will occur on each side of the maximum output position.

However, the elimination of excessive friction has other positive advantages to the recorder owner besides reduced head wear. The silicone lubricant, in addition, eliminates squeal caused by the intermittent sticking and seizing of magnetic tape to the head, a feature vitally important in high temperature and humidities. Even though the tape does not squeal audibly, tape modulation often introduces distortion products into the recording, particularly in the middle and higher frequencies.

Here is still another preventive maintenance tip: Never use any type of transparent cellophane tape for splicing magnetic tape. All major magnetic tape manufacturers offer specially designed splicing tapes containing thermosetting adhesive. This type adhesive resists oozing and will not gum up the recording head and tape guides.

However, splices made with even the best splicing tape in time become sticky, and small particles of the adhesive spread from the splice to the surrounding layers of tape. This causes unevenness during recording and dropouts in the sound at the point of contamination. Here again, a silicone lubricant can be used to clean away the sticky area and return the tape to its original condition. The silicone lubricant completely neutralizes any adhesive not removed by the solvent, remaining on the tape as a safeguard against tackiness.

As we have already seen, intimate head contact with magnetic tape is essential in attaining high frequency response. Professional recorders use a high tape back tension that figuratively stretches the tape across the head, holding it constant by tension.

In most home machines very little, if any, back tension is applied. Pressure pads are used to hold the tape against the head. The pressure pad is generally a good device to assure intimate tape contact with the head. However, incorrect and unevenly distributed pressure against the pads tends to wear the head somewhat unevenly, developing pits and craters.

This will eventually lead to poor tape conformity to the head and loss of high frequencies. Pitting is caused primarily by worn pressure pads. It is important to check pressure pads at frequent intervals for wearing or unevenness. Keep extra pressure pads on hand for occasional replacement.

When the heads are once worn, the frequency of any recorder will suffer drastically. There is no alternative but to replace the head. Generally, this necessitates the replacement of the entire head and coil assembly. (In a butted lamination head, however, the worn pole pieces can be removed and a new gap inserted without the purchase of an entire new head. This is, however, generally a factory replacement job.)

There is not a sound enthusiast that breathes who is not eager to "soup" up the performance of his recorder. "Why not," he might reason, "increase the frequency response of my recorder by a new and better head? After all, a new head represents a fairly modest investment. Didn't you say earlier that it was the head that helped establish frequency response and the signal-to-noise ratio?"

Regretably, however, there is no simple and easy answer. Whether or not a worn head can be replaced by an improved and more expensive head produced by another manufacturer or a different type of head produced by the same manufacturer depends in large measure upon the recorder itself.

Each type of recorder head demands a different amount of bias for maximum performance. In the recorder factory, during manufacture, the bias is either adjusted or permanently set to fall within a region of proper operation when used with a certain type of head.

If a recorder has an adjustable bias, when replacing a head, the bias should be always readjusted to give optimum performance. It is vital that the necessary time be taken to be sure the bias be properly adjusted. If the bias is too low, serious distortion will result. If it is too high, the high frequencies will be lost.

Heads also vary as to the amount of equalization neces-

sary, especially at high frequencies. Consequently, not only the bias but also the equalization will need readjustment if changing heads to another manufacturer. Sometimes an adjustment or compensation in the circuitry is also necessary.

In general, here is a fairly simple rule to follow when considering switching to a different type of head: Do not change heads to another manufacturer or change to a different type of head produced by the same manufacturer unless you are prepared to adjust both the bias and the equalization of your recorder. On most home-type recorders, the head can be replaced with the head of the same manufacturer without difficulty.

Caution should be exercised by the uninitiated before attempting to adjust bias and equalization or alter the circuitry of the recorder. If a service repair shop is used, convince yourself the technician in charge is thoroughly acquainted with the operation of your recorder.

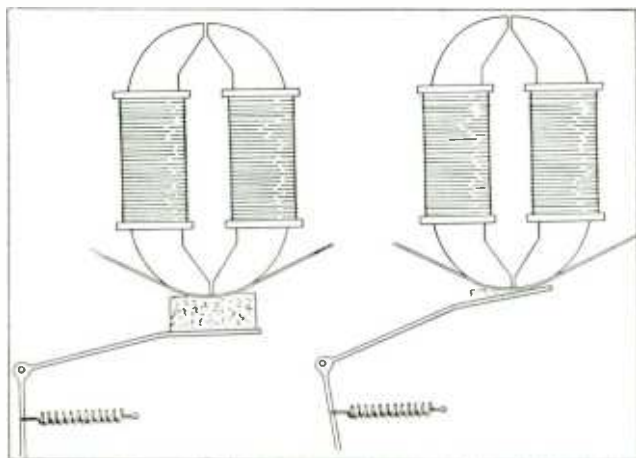
Dynamu Magnatronics Corporation, a division of the Maico Company, furnishes a complete head-replacement kit for most makes and types of recorders containing complete instructions for adjusting the bias. The instructions are clear and simple and, if followed, no difficulty should be encountered in making a bias change.

Most present day recorders are excellent mechanisms. It is possible that the results you seek can be achieved by an external speaker system or even a more expensive, professional-type machine as opposed to switching to a different type head.

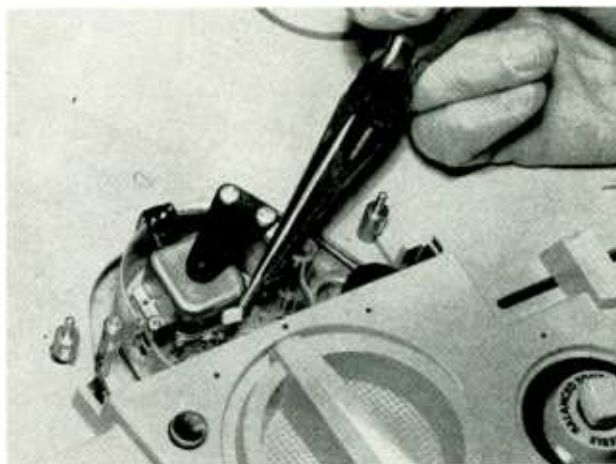
One additional precaution must also be observed in changing heads: Be certain that the head is properly aligned in respect to azimuth. If the head is in correct azimuth alignment, the gap in the head is exactly perpendicular to the tape. This means that tapes recorded on one machine will reproduce properly when played on another.

Of course, when the same head is used for both record and playback, the azimuth can be out of perpendicular alignment and the tape can still be reproduced satisfactorily since both heads will have the same angle. However, few recordists would be content only to play back on their machines tapes they recorded themselves. This is, in effect, closing the door to the increasing number of exciting recorded tapes now commercially available. For interchangeability of tapes, the azimuth must be correctly set.

Azimuth alignment tapes can be obtained from the L. S.



At left is typical record head. Note narrow gap. At right is same head when badly worn. Note that constant wear and abrasion has worn away the narrow gap, destroying high frequency response and increasing signal-to-noise ratio.



Check pressure pads at frequent intervals for wearing or unevenness. Changing them is a simple procedure. Simply pry off the worn pads, and replace, sealing with a strong-grip adhesive.

Toogood Company, Audio Devices, the Dubbing Company and others. These tapes have a high frequency signal at a short wave length recorded on the tape at a very precise 90-degree angle from the edge.

When adjusting an alignment tape on a machine, the normal procedure is to play the tape, then to adjust the reproduce head for maximum output. Care should be taken to reach the point of maximum output, since a lesser peak will occur on each side of the maximum output position. Simply connect an A-C voltmeter or volume indicator meter to the output or approximate by ear.

If a separate record head is used, it can be adjusted by recording a high frequency tone of approximately $\frac{3}{4}$ mil wave length. At $3\frac{3}{4}$ ips, 5 kc is required and at $7\frac{1}{2}$ ips, 10 kc will produce a $\frac{3}{4}$ mil wave length. A sine-wave oscillator should be used.

Since the playback head has been set to an accurate azimuth, the tape should be played back while recording, adjusting the record head until maximum output has been obtained.

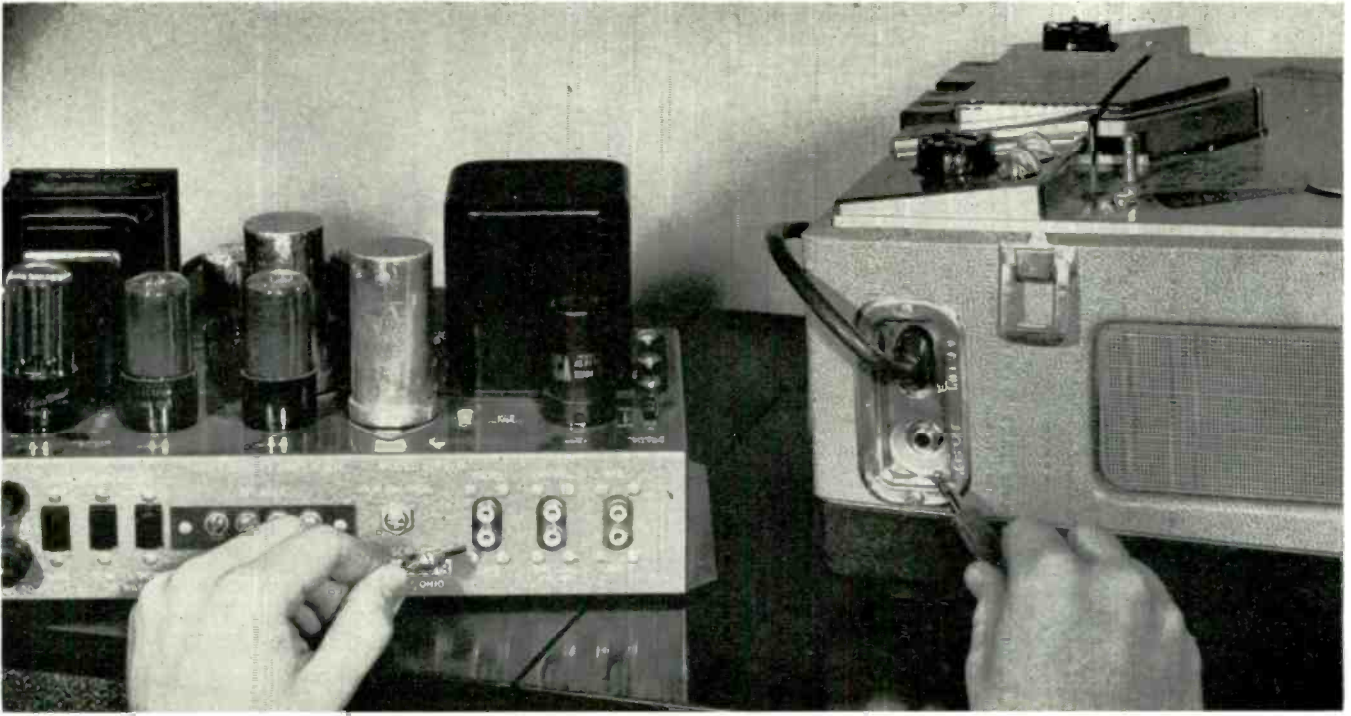
A simpler method—effective, although less accurate—is to record music with as many highs as possible. Feed the recorded tape, playing from one machine into the phono-plug, recording and playing back the music simultaneously. Both machines must, of course, be run at the same speed. By adjusting the record head, it is possible to set it at a fairly accurate azimuth by the judgment of one's ear.

It is also important that the erase head be in correct alignment. Many cases of alleged "print through" or signal transfer have, in reality, been traced to an erase head which was improperly aligned. The adjustment of the erase head is not critical. Simply be certain by visual inspection and testing that the erase head is in the right track position.

When adjusting the head alignment, also check the tape guides. The tape must be guided across the head in a perfectly straight manner. Close tolerances must be maintained so the tape will follow the same path on each playback. Poorly guided tapes tend to weave back and forth across the head. The head is likely to be thrown out of alignment, reducing high frequencies or causing severe amplitude variation.

If proper maintenance is followed, most heads will assure thousands of hours of trouble-free performance.

(Ed note: The head cleaner and lubricant mentioned can be obtained from recorder dealers or from EMC Recordings Co., 806 E. 7th Street, St. Paul 6, Minn.)

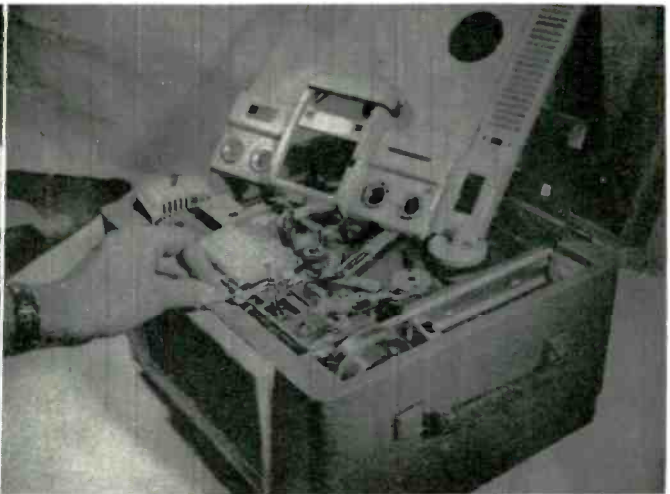


Your Resistance Is Low! When you plug into the extension speaker output of your home recorder, its speaker is disconnected, thereby removing the normal 3-4 ohm load and causing distortion if it is not replaced. This is usually a problem when copying tapes from one machine to another. Although a 4 ohm resistor wired into your patch cord will do the trick, an easier method—especially in an emergency—is to insert the plug into the extension speaker jack only part way so that it feeds the signal out, yet does not disconnect the speaker. A piece of cellophane or plastic tape will help hold the plug in position so that its tip just barely makes contact.

Six Tricks for the Tape Fan

by Ronald Anderson

HERE are six "tricks" for the tape fan—individual ideas which you can use or adapt to make tape recording more fun. What's more, you'll be able to make better recordings as well.

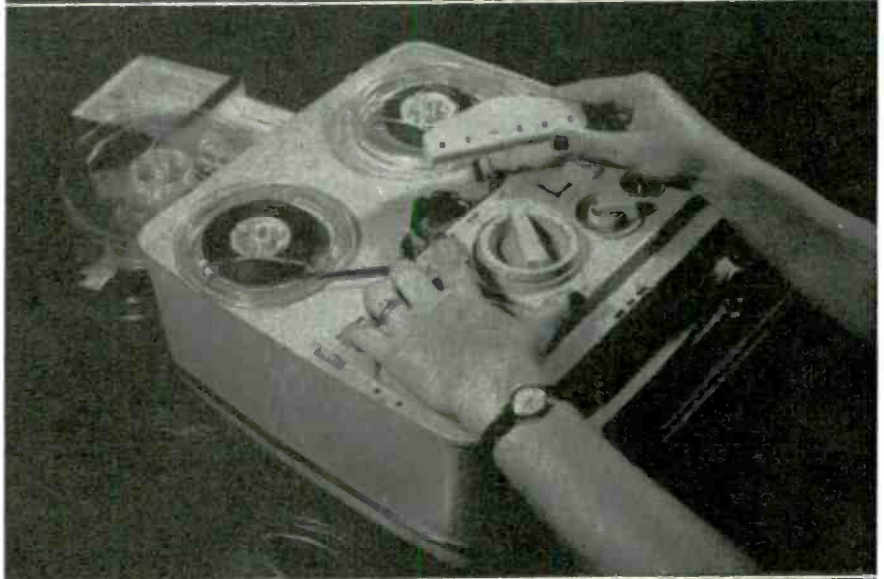


Left: Just Pull the Tab! If you are faced with the task of making a number of splices in a tape, you can save yourself time and frustration by tearing off several 2" to 3" tabs of splicing tape in advance and lining them up in a convenient row on your machine. But don't press them down too tight, and don't leave any on when you are through. Splicing tape sticks right! Right: Here's One That Will Stop You! If your tape recorder lacks a "quick stop" or "pause" control you may find it difficult for cueing, editing, or dictation. But on many machines, you can add such a device by bending a piece of stiff wire into the shape of a question mark and hooking it around the shaft of the rubber pressure roller. When you pull the wire, the roller is moved away from the capstan and the tape stops. Replace the top plate and you're in business.

Look, Ma, No Hands! If you're tired of trying to make like an octopus and are constantly running out of hands during many of your recording jobs, just take a wire coat hanger and bend it into a handy mike holder that you can slip over your head and down on your shoulders. Bend the hook of the hanger so that it clamps around the microphone. If necessary, secure the mike with a little cellophane tape.



You Can Edit Better Bare-headed! If you're doing any tight editing and must make some close cuts, you'll find your task many times easier if you remove the head cover first. Head cover plates on most recorders simply pull off, while it may be necessary to remove a screw or two on others. This enables you to locate precisely the gap of the playback head so you can stop and cut the tape in the exact spot desired. This technique is especially valuable in editing tapes recorded at slower speeds where the space between words may be practically nil.



Revere Reels Can Ride Piggy Back! If you own a Revere T-11 or any other machine where only the take-up reel can be left on when the lid is closed, you've been faced with the problem of carrying the other reel. But if you simply slip the feed reel on the same shaft as the take-up reel, the lid will close comfortably. And you don't even have to unthread the tape.





Photo by Glenview Studio

The authors stereo recording the Rockefeller Memorial Carillon in a basement room at the University of Chicago Memorial Chapel.

How You Hear Audio Perspective

by Robert Oakes Jordan and
James G. Cunningham

. . . nature equipped us with two ears for safety
and utility—here's why.

IT all began a long time ago and lies deep in the origin of man as an evolved animal. This may sound somewhat academic and scholarly in describing the "new" sound. Since this sound will be with us the rest of our days it might be wise to dispel some of the misconceptions about stereophonic sound. To begin with, let's think about the dictionary definition of stereophonic: ". . . pertaining to a three dimensional effect of auditory perspective . . ." The key words to remember are *three dimensional effect* and *auditory perspective*. Actually what you hear, that is the characteristics of stereophonic sound, is an *effect* with an auditory illusion of depth and perspective. You might if you wish call stereophonic sound an *auditory illusion*, with all the effects of the familiar *optical illusion*. In essence your hearing system is being fooled . . . no matter how pleasant the effect, stereophonic sound is an illusion. Now we can go back into man's early progress to see how this illusion can take place in our time.

There was a time when man walked small upon the earth primordial. He had no natural elements of protection like those of the pre-historic animals but he had the use of five senses and the ability to reason and take profit from his

experience. In the beginning ancient man more than likely relied largely upon his hearing than upon any of his other innate senses. His eyes either clouded by physical ailments or obscured by the heavy undergrowth of his natural environment, were only of short range help in warding off danger. However, his hearing system, protected by nature's "choice" of location and, chances are, overhanging long hair provided him with a fine "early warning" acoustical radar system. His *binaural*, i.e., two channel, hearing system functioning in cases of danger not unlike the acoustical aircraft spotting devices used by the army before World War II.

The way we hear sounds within their natural context allows us to place them in relationship to our own position. In the dawn of civilization man never heard sounds that were not within their context of naturalness. All sounds came from their source, and that source whether an animal in the forest, or a child's cry in the cave, had made these sounds as a part of its existence. It was thus that man was instinctively aware of his surroundings, its sounds and their instantaneous location. His life often depended upon his hearing ability.

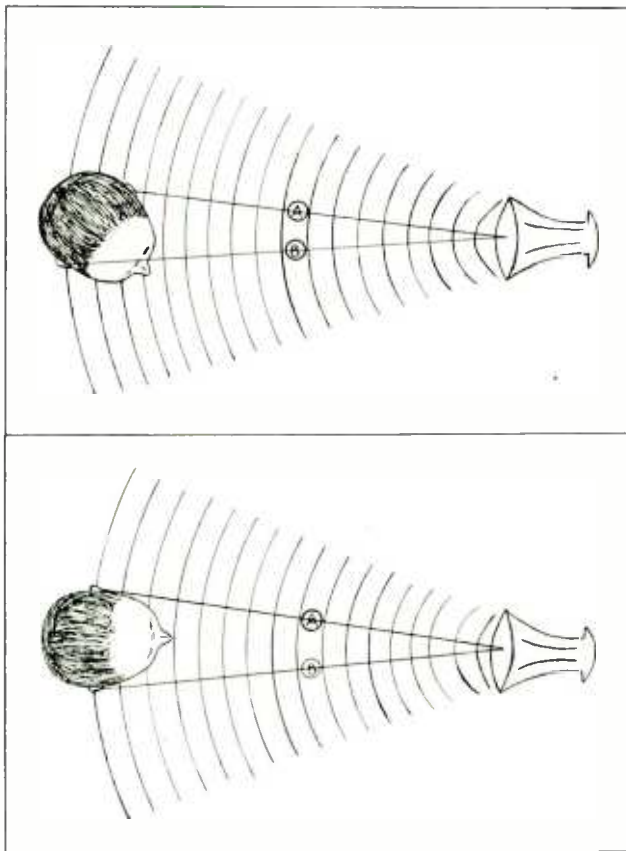
Even the first manmade instruments, like log drums or reed flutes, were natural sounds. Only these instruments could make their own sounds, of course, mechanical or electronic sound reproduction was unknown.

Whenever a sound was made our pre-historic man instinctively turned his head in the direction of that sound. There was an inner compulsion in the hearing system of man that made him seek to equalize the volume of sounds reaching either ear. In doing this his head turned toward the sound just as his eyes sought to focus on one object; his "ears" sought to do the same thing. In a manner of speaking, man makes an effort to hear in one plane or dimension just as he seeks to see in only one dimension. Our world of sight and sound becomes three dimensional only as we move to refocus our eyes and ears. When the musical instrument was developed within our knowledge of history, the concert hall with large groups of musicians became part of our lives. Here was a stage filled with a hundred or more sound sources, that is instruments . . . each a separate sound source in itself. As you and I sit in front of this complex group of sounds our instinct tries to control our head movements in listening. It is easy to see that no matter how quick our reaction time none of us could "center" our ears on each instrument as it made a sound. The side to side motion of our heads would be quite rapid, and impossible to do. If during the concert there is an outstanding solo sound like the cymbals, or the trumpet our head will turn toward it centering both our eyes and ears on it. During the performance of these many integrated sound sources our mind is at work trying to make our head track these sounds. At the same time our conditioning as evolved human beings "tells" us we need have no fear in the concert hall surroundings and our automatic and instinctive head movement, for the placement of sounds, is partially overcome. This "tension," as it were, of instinct versus evolvement in our hearing system has become a natural part of our hearing ability. It is this "tension" and its effects on our mental "ear" that makes it impossible to gain any spatial realism and definition out of monaural high fidelity sound. No matter how good the frequency response, how wide the dynamic range, or how many speakers you have hooked to your single high fidelity amplifier, the resulting sound can not satisfy all the natural requirements for hearing. To be sure the developments in the stereophonic art would never have been possible but for the past improvements in the audio field. It is well to remember that this "tension" we spoke of is not something you can notice as it happens but rather it is a natural part of hearing come about through mankind's time on earth.

It is plain to see that to be at ease while listening to any moderate sound, that sound must fill the natural requirements present in the human hearing system. Let's go back to the words we were to remember from the first part of this article: *three dimensional effect* and *auditory perspective* or better still an *auditory illusion*. For the most part these words may only be applied to sounds mechanically and electronically reproduced out of their natural aspect. In nature all sounds heard are weighed by our hearing intellect. For instance, we hear the sound of an elevated train approaching. It can hardly mean any thing to us by way of a warning unless we are on the tracks. The sound is heard, its location noted but before we turn toward it our intellect breaks the "circuit" and stops our head move-

ment by saying in effect: "*This train is an elevated train, it is on tracks twenty feet above me and cannot cause me harm . . . I am safe.*" However, if at the time you were crossing the street, this sound appeared, your intellect gave you this same message, and you took no warning; there might be a new type of street car which made a very similar sound and in the next few seconds you could have a fatal accident. This side note is simply to point out that we can make hearing mistakes, with natural sounds in their own locale. If you ask your hearing system to make a conscious "mistake;" that is to listen to monaurally reproduced music or sounds lacking the elements for *auditory illusion*, but to pretend to hear-between-the-lines those missing elements of spatiality, and dimensional definition . . . it cannot and will not do this. Thus far no amount of gimmicked and "doctored" monaural sound has provided these special requirements for natural hearing. While not perfect stereophonically reproduced sound provides an *auditory illusion* which the human hearing system accepts without the usual listening fatigue of monaural sound. We have not made an effort to cast aside present day monaural high fidelity equipment. It is our contention rather that the single system is a perfect starting place for the sound in your future . . .

In our next article we will explain further about the nature of stereophonic sound, and those aspects involved in both the recording and playback of the unique means of audio reproduction.



In order to locate the source of a sound it is necessary to have "binaural" or two-eared hearing, just as you must have two-eyed sight in order to perceive depth. In the upper drawing, sound path "A" is shorter than path "B." While the difference in the arrival of the sound at each ear is measured in microseconds, the brain detects it and orients the source. Lower: the simultaneous arrival of the sound in both ears indicates its source as dead ahead.



Viny, Twisty —



A recording session of the children's stories can be a regular reading session. Here the author's wife reads to their daughter as the mike picks up the session. Pictures should be described and when to turn the pages indicated as part of the reading. Above: listening to the tape through headphones is a pleasurable experience for the youngsters and saves hours for the parents.

As the father of a five-year-old, I have been forced to adapt myself to all kinds of noises, songs, and stories. Like me, you will no doubt agree that your own adaptation, if you are a father, has been stretched occasionally to an ungodly extent. Kids are kids and the things they like are not always what the parents like.

The other night as the good wife was reading out loud

to the young one, I was pushed as far as I could be pushed, loving-father role notwithstanding. I was trying to concentrate on something ticklish; the concentration went by the wayside as the following words floated gently (?) to my ears: "... V was once a little vine, viny, winy, twiny, viny, twisty-twiny, little vine! ..."

Mr. Edward Lear wrote those words; he's supposed to be

Twiny Oh Nuts!

by Sam Chamb'iss

good at children's stuff like the "Owl and the Pussy Cat" (which I happen to like), but the "Nonsense A B C" was not meant for me (my daughter thinks it's great). As a matter of fact, I put the old foot down evermore on reading the alphabet a la Lear.

Which made me a dictator. The daughter's lower lip was stuck out far enough to go skating on.

Then came the inspiration. Quick like a bunny, I set up the tape recorder and started my wife recording the "Nonsense A B C" while I went to the store for a pair of headphones. When I returned, the recording had been completed of the viny, winy, twiny, twisty-twiny plus some other selections.

We re-wound the tape, plugged in the earphone jack, adjusted the phones for the daughter's ears, and sat her down to that delightful book with the agonized alphabet.

Smiles were on her face. She turned the pages and traced the pictures out the same way as she did with her mother reading to her.

She was still enthralled when the tape ran off, an hour later. The experiment was a complete success.

There's one thing to watch for; the original narrator

must record "Now turn the page." or words to that effect, especially with new books.

In all fairness, I should say I do not approve of this sort of thing night after night. We are old-fashioned enough in our family to want to talk with each other, rather than sending the youngster, as many parents do, to the television set. However, there are times when people drop in around bedtime, just when the child wants the traditional bedtime story. Our daughter can be satisfied with the taped version, for one or two evenings. The narrators are *us*, not some strange announcer.

And my wife tells me that when I'm gone overnight, our youngster wants taped stories that I have narrated, in preference to being read a story "live." The reverse is true when the wife is gone, which is seldom.

Better yet, I don't have to listen anymore to "viny, winy, twiny . . ." when I'm up to my neck in engineering data.

If you're in a similar situation we'd strongly suggest you put the kiddies' stories and rhymes on tape. You'll save hours of your time, a shattered intellect and won't cut into the children's enjoyment in the least. It's one of those rare combinations where everyone wins and no one loses.



Today's tape recorders are so easy to operate that even a five year-old can be entrusted with the machine. Here daughter Marty adjusts the volume to suit herself.



Bill Putnam in control booth at his Universal Recording Corp. studios in Chicago, operates complex console while recording new stereo tape by Concertapes, Inc.

Stereo Recording Session

by Thomas S. Watts

. . . here's how "The Sound of Christmas" was recorded in the modern Universal Recording Studio in Chicago.

The John Halloran Chorus wears choir robes while recording. Two mikes shown were used with three others covering the orchestra on the other side of the studio, preserving stereo's spatial effect.



NEW ideas—musically and technically—were used by Concertapes, in producing "The Sound of Christmas," newest stereo recorded tape release, by this pioneer in binaural tape recording.

Arrangers, conductors, musicians and recording engineers worked as a team to create and execute techniques devised especially to exploit the spatial qualities of stereo. From its inception this summer, "The Sound of Christmas" was a stereo project, though its producers also are marketing a 15-minute monaural version.

"The Sound of Christmas" was recorded Sept. 30 in a special stereo studio at Chicago's Universal Recording Corp. It features the Concertapes Orchestra directed by Leonard Sorkin, noted classical violinist, and the John Halloran Chorus in a collection of traditional Christmas hymns and carols.

It all began when arrangers Bill McRae and Wayne Robinson met with Conductor Sorkin and his associates, Irving Illmer, George Sopkin and Abram Loft to devise arrangements calculated to take fullest advantage of the qualities of depth and "presence" which characterize stereophonic recorded tapes and make listening to stereo such a satisfying musical experience. Every passage was designed to take advantage of the special characteristics of stereo.

Next, this group met with young John Halloran, who worked out arrangements and effects for his 18-member John Halloran Chorus. It was decided to keep orchestra and chorus widely separated and to dramatize the "movement" effect of stereo by having the chorus sing while in motion during the recording of "Adeste Fidelis," often used as a church processional. There were other special placements and devices too—such as having the orchestra's percussionist make a semi-circle around the musicians while jingling sleighbells for a version of "Jingle Bells" which give a variety of new interpretations to this old favorite.

Then came sessions with Engineer Bill Putnam, operator of Universal Recording Corp., whose task was to devise recording techniques to carry out the ambitious plans of the arrangers. In the first place, there was a delicate problem of balance to be solved. Normally, balance is the concern of the recording engineer. But in this case, in order to preserve the clarity of the chorus without sacrificing

Leonard Sorkin conducts in two directions. John Halloran Chorus in foreground and Concertapes orchestra in background join to record stereo tape.



The Concertapes Orchestra plays for stereo recording of "The Sound of Christmas." Unusual miking was one of several innovations employed to exploit the special characteristics of this holiday release.

clarity and definition of the orchestral arrangements, the balances were effected by the musicians on the floor under Sorkin's baton.

Putnam rigged a special microphone system for "The Sound of Christmas," employing five microphones but coupling them in such a way that the five functioned as two.

As seen from the control booth, the orchestra was at right, facing the chorus at left, with Sorkin on the podium between the widely-separated musical groups. Three microphones were in front of the orchestra. Two were tied together to make a single mike, in effect. Two microphones were spaced in front of the chorus. In recording, Putnam coupled the right-hand orchestra mikes with the right-hand chorus microphone and the left-hand orchestra mike with the left-hand chorus mike. In this way, two separate sound tracks were made as in every stereo tape recording. The monaural tape was recorded at the same time.

Putnam's intricate 12-channel control console made all this possible. It was designed for stereo recording, in that two isolated program channels are available from any or all of the 12 positions on the board, at the same time feeding a channel for monaural recording. Completely isolated amounts of reverberation are available to right or left channels in controlled degrees. This can be accomplished, when desired, by feeding the right and left channels to separate echo chambers, used only to a degree to reinforce the direct sound.

Putnam's stereo studio is equally unique. It's huge—100,000 square feet. Only Hollywood sound stages are bigger, Putnam says. Large reversible splays line the walls. They're curved, smooth on one side, covered with pegboard on the other. These provide for varying the acoustics over a reverberation time from that of a room of 20,000 cubic feet to that of a room of 125,000 cubic feet. They also vary the absorption coefficient from approximately 10% to roughly 80% over a wide range of frequencies.

In spite of all the special techniques, "The Sound of Christmas" isn't a "gimmicky" record or a so-called stereo showcase. Each departure from usual practice contributed to the end effect—the creation of a stereo tape recording which captures the very spirit of Christmas in beautiful music with a rare quality of warmth and presence.

1956 Roundup

... the year 1956 was a swiftly moving one for magnetic recording. Here are some of the highlights:



Echomatic Tape Cartridge



Ampex Stereo



Benz Automatic projector



Bell Stereo

A SNOWBALL rolling downhill and the tape recording industry both showed the same characteristics over the past few years. The farther they went, the bigger they became and the faster they traveled.

From a standing start in 1950, the industry has grown until there are an estimated million and a half tape recorders now in use. Each successive year has seen more recorders and more tape sold. 1956 kept the accelerating pace—in improvements, new products and general expansion.

During the year the Magnetic Recording Industry Association under the presidency of Joseph F. Hards has made strides toward standardization. C. J. LeBel, Chairman of the Standards Committee, has guided the work of members from various firms toward the establishment of definite standards in such things as reel dimensions, playback and recording characteristics, head alignment, etc. More progress was made in 1956 than at any time previously toward these goals.

1956 also saw the inception of Mylar tapes which enabled the tape manufacturers to use thinner base stock and thus get more tape on a standard reel. Mylar, a DuPont product, is unaffected by extremes of temperature or humidity and provides the recordist with an imperishable tape.

The bombshell of the year was the introduction of the Ampex Videotape Recorder for recording TV pictures and sound on 2" wide tape at a speed of only 15 inches per second. Its release was unexpected and TV stations were quick to sign up for the new recorders at \$45,000 each.

In many cities the music loving public was treated to stereo Soundoramas which consisted of recording a symphony orchestra on the spot and playing it back stereophonically. The Philadelphia orchestra held the first one.

The year was also marked by the swift rise of stereo. Pioneered as early as 1952 by Livingston Electronics, 1956 saw Ampex introduce its home units followed by V-M with its adapter kits and stereo playbacks, Bell Sound with the same and a stereo amplifier, RCA with its playback and Pentron with both conversion kits and ready-to-play machines in its line. Berlant Concertone and Viking, Amplifier Corporation of America, Ferrograph, Magnecord, EMC, and others were also active on the stereo front.

The output of recorded tapes continued to grow with such firms as Bel Canto, Audio Arts, High Fidelity Recordings, Concert Hall Society, RCA, Sonotape and others entering the field. Almost all of the new output was

Fidelipac Tape Cartridge



Reeves Tape Timer



stereo tape and some firms issued stereo tapes only.

Further indications of the growth of the field was that Tape Recording magazine switched from bi-monthly to monthly publication to be able to keep up with the industry. Four books on recording appeared during the year.

In 1955, 360,000 tape recorders were sold. The 1956 figure is still higher. Tape sales were measured in millions of feet, in fact, enough to make more than four complete round trips to the moon.

One sad note marked the year, the death in an auto accident of Charles Sigsbee who was the first music reviewer to devote his entire attention to tape.

The uses of tape continued to broaden: the political convention was covered on tape. Westinghouse introduced "talking elevators." Mestons Travels combined a slide and tape to make "This is America." The Mid-West Broadcasting School made practical use of tape in their home study announcing course, the stock exchange switched to tape for its lectures to visitors and the music and sound effects of Disneyland were likewise played from tape. The Benz Aud-o-scope combined a recorder and projector for automatic operation. Tape cartridges, the Echomatic and Fidelipac, emerged from the lab. United Air Lines took tape music aloft using a Presto reproducer and General Sarnoff repeated his prophecy of home movies on tape.

Growth caused several shifts in the industry too. Shure Brothers moved to a larger plant. ORRadio Industries, Webcor, Electro-Voice and Telectro also suffered growing pains and had to acquire larger space.

Imports of foreign made equipment increased during the year. Intersearch began to market a Japanese microphone, stereo heads, and stereo tapes. The Ercona Corporation brought in new Ferrograph models and Tandberg imported the Norwegian Tandberg recorders.

Minnesota Mining and Manufacturing purchased the video tape division of Bing Crosby Enterprises and Bel Canto, Affton Industries, St. Cecelia Co., Concert-Hall Society, Intersearch, Nortronics and Wheeler Studios were among the new faces to appear in the industry.

The tape correspondence clubs grew too, with Tape Respondents International, founded by the late Fred Goetz, welcoming its 1000th member.

New equipment continued to pour out. Electro-Voice introduced its slim mikes, Stancil-Hoffman developed selectivity of taped music for juke boxes, Magnecord unveiled its new Citation and the P63A-X. The Dictaphone Company brought out the Dictet pocket recorder, Audio Devices, Reeves. Irish and Scotch brought out the new thin tapes, Federal introduced its model 47-A recorder, Fenton brought out the stereo Brennell tape deck, Ampro and Pentron marketed console type recorders.

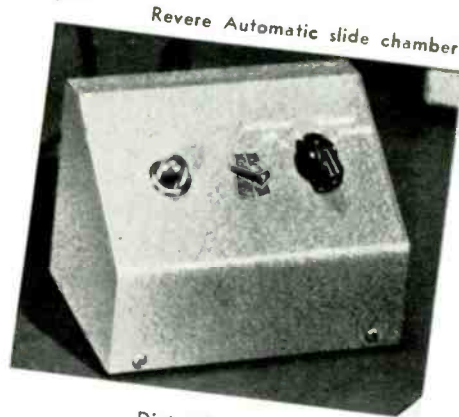
Industrial uses, electronic brains, movie sound tracks and similar uses also moved forward during the year. For magnetic recording as a hobby, industry and business, 1956 was the most active year so far.



Ampex video recorder



Madelyn K. Skarnes, T.R.-I's 1000th member.



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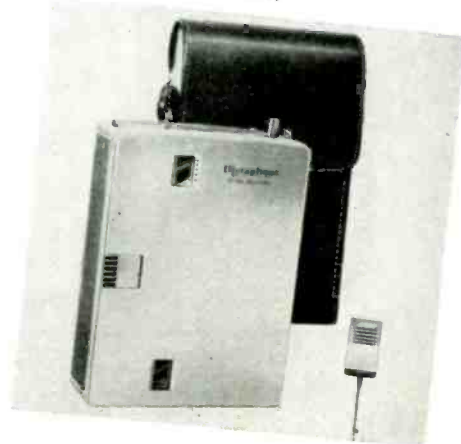
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TAPE CLUB NEWS

Arrangements for a Pacific District and western states get-together of Voicesspondence members, non-members, and their friends, are now underway. Directing this affair is Voicesspondent Roy W. Howard, 3113 So. Center Ave., Arcadia, Calif. The date set for the affair is Sunday, February 17, 1957, from 11:00 A.M. to 6:00 P.M., at Garvey Memorial Park Gymnasium, Garvey, Calif.

Roy asserts that there will be tables available indoors or out, according to the weather, so bring a picnic lunch if you desire; there will be playgrounds for the kiddies; free parking; tapes and tapes with colored slides and movies will be run; electronics experts will be present to answer technical questions about recording; and high on the list of special events is a performance by Larry Friel, who played piano for and toured with the late Eva Tangway, the "I Don't Care Girl." All in all, it promises to be a most pleasant and enjoyable gathering.

Those planning to attend should write to Roy and let him know how many will be in each party. Anyone wishing directions to the Gymnasium may request same in their letters. Also, Roy is footing all costs, and any donations to help this along will be appreciated. Any money not used will go into the Voicesspondence Special Services Committee Fund.

World Tape Pals has gained so many teachers desirous of exchanging classroom tapes that a special list of their names will be distributed to the group before January 1. The importance of tapes, direct from foreign countries, in education is becoming more and more apparent, and the teachers are finding it a great aid in many subjects such as social studies, geography, foreign languages, etc. World Tape Pals urges its teacher members to contact each other and plan their school exchanges. Also, The WTE Tape Bank will appreciate hearing any interesting tapes received by the individual teachers, for possible inclusion in its library.

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Marjorie Matthews, Secretary
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TAPE IN EDUCATION

BY JOHN J. GRADY, JR.



At various times, TAPE IN EDUCATION has referred in a complimentary way to the research and experimentation, which has been performed by educators, in the application of tape recording to approved instructional routines. Throughout the nation, numerous earnest teachers are improvising uses for tape instruction, and are definitely establishing magnetic recording as a most versatile aid in lessening the mental, manual and vocal work load of instructors in many curricular subjects. And these pioneers of better teaching methods are doing a more effective job of imparting knowledge to students, also.

In the Green Mountains of old Vermont, at Middlebury College, a marvelous task—from experimental stage to final installation—has been accomplished at the Language Laboratory there. Stereotyped old methods of instruction in the languages have been abandoned or revised. Thorough experimentation, over many months, caused the elimination of procedures that had been common practice for many generations. Innovations of later days were weighed and tested, too, in the search for the best method of language instruction. The result was the adoption of an efficient modern procedure in which magnetic tape recorders and playback units have a very important part.

Ambition for excellence spurred the development of the modern Language Laboratory at Middlebury College—minds reaching for superior techniques far beyond the old orthodox measures of earlier days. That's the spirit of PROGRESS. So, as a result of that spirit, Dr. Stephen A. Freeman, Director of the Language Schools and Vice President of the College, together with Professor Fernand Marty, Director of the Language Laboratory, produced for an old and revered institution a modern scientifically equipped department for the teaching of languages. And in the process, Professor Marty authored a number of textbooks and tape recordings to aid students in the mastery of the French language.

The most important basic unit of the Middlebury College Language Laboratory is the glass-paneled, soundproofed recording studio. And within this studio, there is a vital instrument in operation—a short-wave radio set—which provides students with a direct contact with actual communication technique in various foreign countries. As always, text and theory have their important place in language study, but communications direct from the country of origin—the voices, the accents, the national mannerisms in delivery—that's the ultimate in language instruction. And the recordings of these live broadcasts, translated, analyzed

and discussed in class, surely will help students to speak and to understand aurally a language being studied, as well as to read and to write it. For it is proficiency in speech and in aural understanding that modern language instructors aim to develop in their students. And it is recognized that a tape recording of any utterance, which can be repeated time after time, is far better for study purposes than any single utterance by a speaker.

Other equipment in the studio of the Language Laboratory at Middlebury College consists of a sound amplifier, a disc recorder, a turntable for transcribing disc material to magnetic tape, and the very necessary tape recorders. It is in this studio that instructors prepare master recordings of texts and laboratory exercises, and from these master recordings the copies for the students.

In addition to the two classrooms in the Language Laboratory, there are numerous individual listening rooms available for the students. Each one of these rooms is equipped with a tape recorder or a playback unit. Some of the listening rooms have both instruments. This double installation serves two purposes. It permits a student to listen to questions or other instructive material on the playback unit, then to record his answers or observations on the other unit. At Middlebury College it has been found that the installation of both the playback unit and the tape recorder in the individual listening rooms makes a sound contribution to the study of languages. The double installation assures responsive activity to instruction on the part of the student. It's not a one-way effort—just listening. For after listening, action is expected. The presence of the tape recorder will help a student to prove that he listens well—and learns. The taped answers will tell.

Extensive experimentation by Professor Marty proved the value of the individual listening rooms. Because of them the student has an environment facility available which will help him to concentrate on factors he needs to study most. In the listening room he may repeat and repeat particular passages as often and as long as he desires. Then without distractions, he can demonstrate in his own voice that he has absorbed the necessary instruction. Boy, what satisfaction.

TAPE IN EDUCATION is deeply grateful to Professor Marty for the information which permits this digest narrative of the years of experimentation and the final accomplishment of a modern Language Laboratory at Middlebury College. CONGRATULATIONS.

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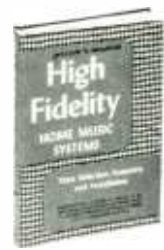
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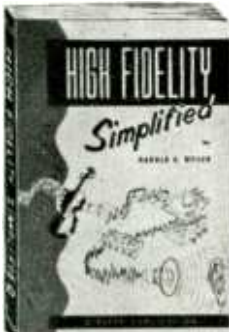
by William R. Wellman

The book describes the functions of each unit of a home music system, giving advice on the good and bad features of various kinds of units. Chapters include: An Introduction to High Fidelity, Loudspeakers, Loudspeaker Enclosures, Record Players, Radio Tuners, Tape Recorders, Amplifiers, etc. Also included are plans for installing a home music system



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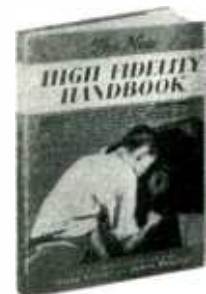
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NEW PRODUCT REPORT



BELL & HOWELL MIRACLE 2000

... features four speakers, including two electrostatics. Three motors, push-button operation.

THE unit shown above is the new portable version of the Bell & Howell Miracle 2000 tape recorder. Until this model was announced, the recorder was only available in a furniture type instrument, shown below and designed especially for home use.

The physical and electrical characteristics of the two machines are identical. Our tests were made on the model 300 M.

The ease of operation, with the drop-in-the-slot threading and the push button controls, will make the non-technical operator happy. The multiplicity of outputs and inputs found on some recorders are not present on these models.

One unusual feature is the presence of four speakers, two 8" woofers and two electrostatic tweeters which adequately handle the 8 watts of output.

The tape transport is easily threaded and the three motor arrangement eliminates the old belt hazards giving extremely low wow and flutter. Mechanically the machine is substantial and well laid out. Neon indicators are used for modulation control.

Electronically the response meets the

manufacturer's specifications of less than 3% distortion at four watts, frequency response better than AA program requirements (50 to 10,000 cps) and although no specifications are given, the bias-erase arrangement gives better than a 35 db signal to noise ratio. All measurements were made from record to playback.

The machine is dual track, two speed ($3\frac{3}{4}$ and $7\frac{1}{2}$ ips) and is equipped with a Shure Controlled Reluctance Microphone and an alligator clip cord and plug for pickups from radio and TV. The input arrangement requires the use of a ring and tip plug and the output may be connected to an external low impedance loudspeaker.

The pushbuttons adequately control the functions of the recorder and the reels are braked electrically. When pushing the stop button, it is wise to hold it down until the reels come to a complete stop, which occurs in a second or less.

On top of the recorder is a selector switch which permits use of various speaker combinations. When turned to the "all" position, all speakers are brought into play except when an ex-

S T A **F** K S T E D

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ternal speaker has been plugged in, in which case the electrostatic speakers and the external speaker will both play. At left or right position, either the left or right 8" woofer will be in use. When switched to the external speaker position, all the four internal speakers are shut off and only the external speaker will be operative.

Both versions of the recorder are very attractive. The home model (300 M) is a beautiful piece of furniture that would grace any living room. The portable is housed in a fawn and brown, scuff-proof case. The workmanship is excellent and worthy of the Bell & Howell tradition.



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Buying guide to everything in electronics, including all equipment for the tape recordist: complete recorders, basic mechanisms, amplifiers, mixers, microphones, head demagnetizers, telephone pickups, recording tape, splicers, leader and timing tape, identification labels and accessories. Write for your Free copy.

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SHOP OR SWAP

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

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

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

LEARN WHILE ASLEEP with your recorder. Amazing book gives full instructions, \$2.00. Guaranteed. Research Association, Box 610, Omaha.

COMPLETE HIGH FIDELITY custom recording service. Records from your tapes. Sample record \$1.00. Free information. Baron's Recording, Lynden, Wash.

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RE-RECORDINGS FOR SALE. Early Concert Bands and Soloists, Americana Singers, etc. On Tape and Disc. Write G. D. Bridges, 2199 Lakeview Ave., Detroit 15, Mich.

JAZZ COLLECTION for sale. 78 RPM records from 1936-1942 period. List 10 cents. R. Bintliff, 516 Salisbury Road, Haddonfield, N. J.

WANTED—Two or three speed tape recorder. Have varied items to trade—recorder, microphones, phono-radio-recorder, sporting goods, guns, lenses, etc. Send for list. Erwin, Box 149, Durant, Iowa.

SALE OR TRADE: Craftsman acetylene burning and welding outfit complete with hose gauges and assorted tips; also, tool post grinder to fit 8" lathe. Will trade for tape recorder or sell all for \$110. Mr. Andrew Murray, 60 G Street, Keyser, W. Va.

MATCHED PAIR RCA Jr. Ribbon microphones, 125, 250 ohm, plus matched input to grid transformers. Ideal for stereophonic recording or broadcast; also, Pentron tape transport and preamplifier in case. All for \$100, or trade for Viking transport and PR61 preamplifier or older Magnecord in good condition. Write Art Mitchell, Box 233, Thompson, Iowa.

SELF-IMPROVEMENT—Body Building Course on tape. Amazing results! Complete course now only \$10. Nothing else to buy. Send to Jacks Recording Service, Box 6273, Asheville, North Carolina.

CHALLENGER MIXER-PREAMPLIFIER, MX6. 4 microphone inputs, 2 phono/radio, 50 to 15 KC

plus or minus 2 db. Microphone gain 59 db, phono 30 db, cathode follower output. Cost was \$36, used once! In factory carton, will sell \$30. Donald Ely, 521 Murdock Road, Baltimore 12, Maryland, VA. 3-8962.

CONCERTONE RECORDER TWR-1 with MCM-2C mit mixer, complete in cases, 7½ and 15 i.p.s. Used for 6 months, full track heads, \$475. Magnecord M-30, used, \$95. Fisher amplifier, 50 watts, 50AZ 2nd Master Audio Control 80-C, new condition, \$135. D. S. Versaggi, 313 E. 15th Street, Wildwood, N. J.

NEEDED IMMEDIATELY! Readers for the blind on tape. Readers in England needed. If interested, write Vic Torrey, P.O. Box 136, Phoenix, Arizona.

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SWAP—Ikoeflex reflex camera, new condition, imported from Germany, for good FM tuner or what have you. Anthony Baratta, 2536 So. 15th Street, Philadelphia, Pa.

AN OLD NORWEGIAN tape fan wants to taperecord with someone from the state of Maryland in USA. If you like good music and song, or almost any other subject, you are invited to write to Rolf Srrrom, Oscarsgate 7, Oslo, Norway.

HIGH QUALITY RECORDING TAPE—1800' 7" reels, precision slit, abrasive free, excellent frequency response, \$1.89 each in lots of three or more. Sample \$2.49. Money back guarantee. Used 1200' reels of tape 99c each. New Pentron "Emperor" tape recorders plus 12 1800' reels of tape, \$199. \$302 value. Used tape recorders. Include sufficient postage. Recording Services, P.O. Box 231, Wallingford, Conn.

WANT TO BUY used Magnemite recorder Model 610-SD with P.M. erase. L. V. Towt, Blackstone Apts., Baltimore, Md.

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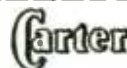
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The 7 Old-Fashioned Villains of Tape Recording

...and How

irish FERRO-SHEEN
BRAND


Foiled Them All

Once upon a time, 7 Old-Fashioned Villains like this  were wreaking endless woe on Decent People with Tape Recorders. The 1st Villain was Oxenscheid the Oxide Shedder.

He scraped away at the crumbly oxide coating of old-fashioned tape and gummed up tape recorders with the shedding particles. The 2nd Villain was Wearhead the Head Wearer.


He filed down the magnetic heads with the abrasive coating of old-fashioned tape. The 3rd Villain was Frickenshaw the Frequency Discriminator.

He dragged down the high-frequency response of old-fashioned tape through inadequate contact between the "grainy" coating and the head. The 4th Villain was Noysenhiss the Noise Generator.

He generated tape hiss and modulation noise  as a result of the random vibrations and irregular flux variations caused by the uneven magnetic coating of old-fashioned tape. The 5th and 6th Villains were Dropofsky the Drop-Out Artist and Pringlethorpe the Print-Through Bug.

They put nodules and agglomerates into the oxide emulsion of old-fashioned coated tape, causing "drop-outs" whenever these trouble spots lost contact with the record or playback head, and inducing "print-through" on the recorded tape when the extra flux at the trouble spots cut through adjacent layers on the reel. The 7th Villain was Brattleby the Embrittler.

He dried out the plasticizers in old-fashioned coated tape and embrittled irreplaceable recordings. Then : OCTOBER, 1954! That's when a very un-old-fashioned little man by the name of F. R. O'Sheen

 announced that he had developed the revolutionary new **irish FERRO-SHEEN** process of tape manufacture and presto!

 the 7 Old-Fashioned Villains were sent a-scurrying with cries of "Confound it - Foiled again!" Yes, F. R. O'Sheen had made the new magnetic oxide lamination of **irish FERRO-SHEEN** tape so smooth-surfaced and non-abrasive, so firmly anchored and homogeneously bonded to the base, so free from nodules and agglomerates, that the

7 Villains were evicted - for good! **Moral:** Don't let Old-Fashioned Villains do you out of your hi-fi rights!

Just say "No, thanks" to ordinary coated tape and ask for F. R. O'Sheen  **irish FERRO-SHEEN**, that is! ORRadio Industries, Inc., Opelika, Alabama.



Only "Scotch" Magnetic Tape was sensitive enough to capture

a madman's madrigals



Don Carlo Gesualdo

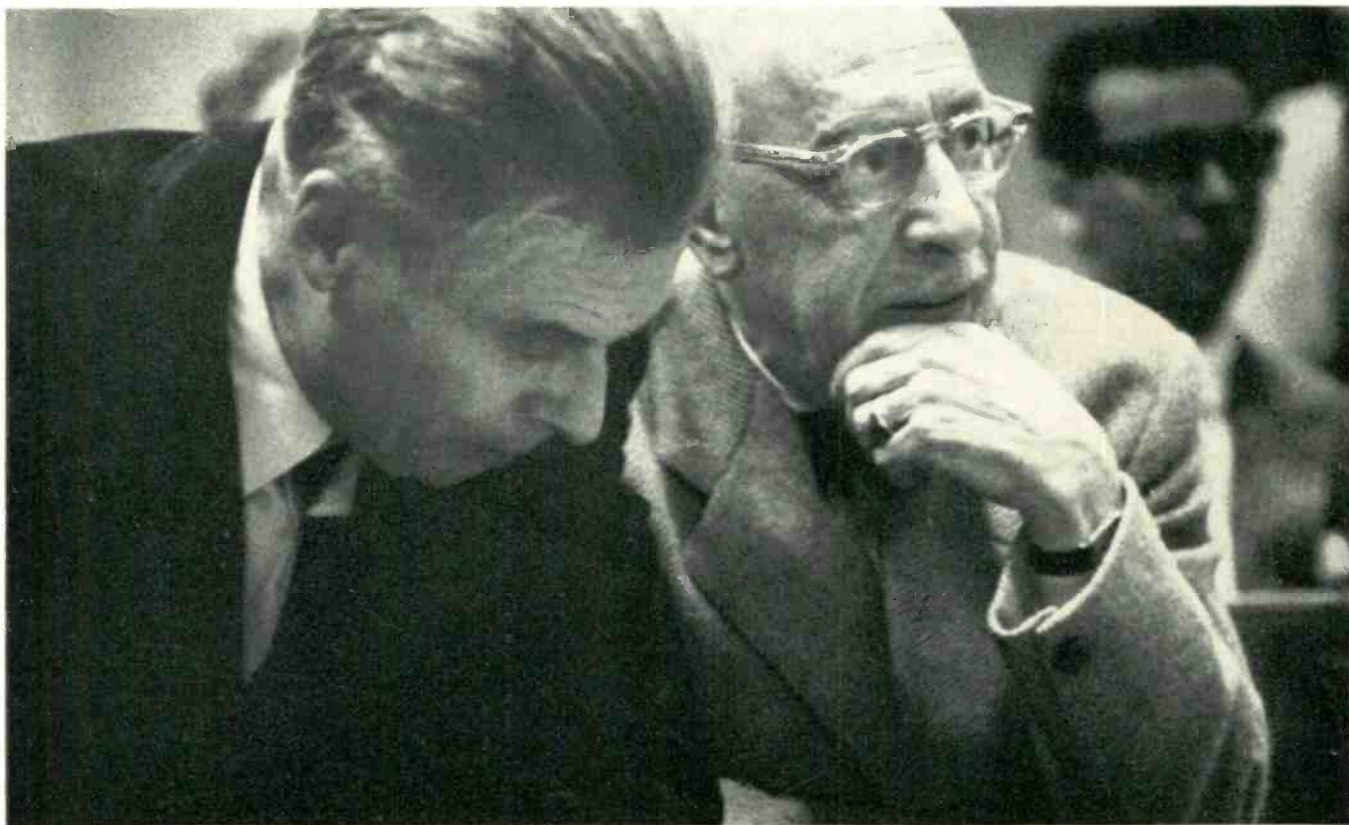
In 1613 the psychotic Italian nobleman and composer Don Carlo Gesualdo died.

To us he leaves a magnificent bequest—the brilliant Gesualdo madrigals. "A collection of marvels," Igor Stravinsky describes these musical masterpieces.

Many of these ingenious *a cappella* compositions are now superbly recorded in the highly acclaimed new Sunset Records album, "Aldous Huxley Presents the Madrigals of Gesualdo."

To reproduce the mad composer's subtle dynamic changes and harmonic progressions, Sunset Records made its original master recording on a magnetic tape with an international reputation for highest fidelity. Their choice—"Scotch" Magnetic Tape—because it "assured us perfect reproduction in recording our album."

"Scotch" Magnetic Tape is *always* first choice where superior sound reproduction is essential. Try it on your machine and you'll hear why.



ALDOUS HUXLEY AND IGOR STRAVINSKY at the Gesualdo madrigals recording session.



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TAPE RECORDING



Stereo recording missile launching. See page 29.

July 1958

35c



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NEW Super-Thin Audiotape on TEMPERED MYLAR* gives you DOUBLE THE RECORDING TIME yet won't stretch or break on any machine!

FROM the laboratories of DuPont has come a great boon to serious tape recordists — Tempered “Mylar”! This improved base material is actually *twice as strong* as ordinary 1/2-mil “Mylar,” giving you a double-length tape that can be used on any machine without danger of stretching or breaking under starting, stopping or rewind stresses. “Tempering” does away with the extra-careful handling required by ordinary double-length tapes.

With Super-Thin Audiotape on Tempered “Mylar,” you get 2400 feet on a 7-inch reel — a *full hour* of uninterrupted recording time on each track, at 7 1/2” per second, or *two hours* per track at 3 3/4” per second. In effect, it gives professional 10 1/2” reel capacity to any portable or home-type recorder that will take a 7” reel!

The doubled length and strength are achieved with no sacrifice in magnetic characteristics. This tape has the same superior performance and consistent uniform quality that have made Audiotape the first choice of professional recordists the world over. It is available *now* — in the following reel sizes: 5” (1200 ft.), 7” (2400 ft.) and 10 1/2” (4800 ft.). Stock up on this, or any of the other seven types of Audiotape, on the next trip to your Audiotape dealer.

*“Mylar” is a DuPont Trade Mark



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HI-FI

TAPE RECORDING

VOL. 5 NO. 8

JULY 1958

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CROSTALK

from the Editors

* * * * *

CHICAGO ELECTRONIC PARTS SHOW attended by radio parts jobbers, hi-fi shop owners and commercial sound distributors got a big dose of stereo both from tape and disc. Webcor will have a new tape deck with stereo playback and Norelco has added a stereo model to its line. Stereo discs were much in evidence, as were the stereo phono cartridge makers. Consensus is that stereo will completely take over home music field but it will take a few years to do it.

* * * * *

TAPE IMPROVEMENTS will keep tape in stereo vanguard. Ampex announced a conversion kit for all A series recorders to enable them to play four channel stereo tape. Kit will retail for \$75 and will enable machine to play either four track 3 $\frac{1}{2}$ ips stereo or regular 7 $\frac{1}{2}$ ips stereo. Talk is also prevalent about a four channel tape cartridge but it hasn't come out of the labs yet.

* * * * *

IT IS ESTIMATED that 80% of the recorders to be built next year will have the stereo playback feature incorporated in them. We think the industry's best bet is to bring out stereo recorders and thus keep one up in the one-upmanship game between discs and tape. After all, you can't copy a stereo record on a monaural recorder and with the increase in stereo broadcasting that is bound to come there are a lot of dyed-in-the-wool recording fans who would like to record it. Besides, recording in stereo is either twice as good or twice as bad as in monaural and it will add an extra fillup to the hobby. Straws in the wind are blowing in the direction of stereo recorders. Magnecord's new Magnecordette, at about \$400 is stereo and several of the firms who make tape decks and separate amplifiers can provide stereo recording with the proper selection of equipment. Wilcox-Gay has just announced a recording pre-amplifier that will enable the owner of one of their Sterecordio machines to convert to stereo recording. Other than the Magnecordette mentioned above all the other stereo recorders are from \$500 up. We think it is time that the engineers were turned loose on designing simple and relatively inexpensive stereo recorders. FLASH! Pentron will have a stereo recorder in late summer.

* * * * *

DESPITE RECESSION TALK forecasts for tape sales and equipment sales are rosy. Charles C. Harper, new national sales manager for Bel Canto forecasts an 8 million dollar stereo tape market for next year. Frank Rogers, of Reeves Soundcraft, in making a presentation to some of their outstanding distributors at the parts show predicted a 100 million dollar market for magnetic tape within the next five years. Recorder sales for last year topped 500,000 and the estimate for next year is 600,000 units.

* * * * *

RIGHT IN OUR OWN BACKYARD, almost, the 82nd running of the famous Preakness was videotaped by the Columbia Broadcasting System and immediately rebroadcast after the race was finished. Picture quality was as good as the original transmission and the sports commentator was able to point out the features of the race that were important—and without any delay for processing, as is the case with film. This feature alone can make a big difference in the quality of sport broadcasts in being able to visually recap the important points immediately after the event.

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TAPES TO THE EDITOR

When sending tapes to the editor please use the 3" reel and indicate the speed at which it was recorded and whether it is dual or single track. We will listen to your tape, make notes from it for use in this column and then reply on your tape. Please keep tapes reasonably brief.

If you do not own a recorder, a letter will be acceptable. Address tapes or letters to: The Editor, Hi-Fi TAPE RECORDING, Severna Park, Md.

To the Editor:

Might I compliment you on your Shop or Swap column. I like it and hope to have the privilege of taking advantage of it in the near future. I have only been in this "hi-fi bug" business less than a year and am not well acquainted with the technical goings on of it yet. Maybe through subscribing to your magazine and by exchanging tapes with others I might be able to comprehend this business in time.

To date my equipment consists of the Revere, 2 speed tape recorder, T-1100; Ampex stereo playback and monaural recorder; Garrard record changer; Rek-O-Kut turntable with Audax and Gray arms using Fairchild and G. E. cartridges; Bell 2200C, 20 watt amplifier; Economy, 30 watt amplifier; Electro-Voice SP-12 and T-35 speakers in Klipsch corner cabinet. I'm interested in liturgical music, Gregorian chants, Eastern Orthodox chants, etc., as well as classical music of the masters. If you know anyone with similar appreciation and interest I would appreciate knowing of them so I could correspond with them via letter and tape. — (Rev.) W. Francis Forbes, SSB, "Crabapple Lane," P. O. Box 233, Monticello, Florida.

To the Editor:

I wish to state my thanks for the fine magazine you people publish. Through it, my knowledge and enjoyment of my recorder have increased one-hundred fold. The only fault I can find with it is that it is so interesting I read it in one sitting.

I do wish you would have more reviews of tapes. I find the reviews you now feature excellent and they are a great help in the purchase of my tapes. Keep the magazine coming.—R. Montecalvo, North Providence, R. I.

To the Editor:

I have read with interest the article by Bart Pierson which appeared in your April issue.

The comments contained in this article are a clear statement of some of my own experiences as a recent tape fan.

I acquired, more or less by chance, a recorder which has good recording characteristics, an adequate output, but a poor speaker system. I reached the point where I wanted better tonal reproduction and volume than the integral speaker system was able to deliver, and yet I was not willing to spend the money necessary to equip my set-up with a good external speaker.

I had finally reached the point where I was ready to buy a decent speaker and I approached a friend who seemed to be in

the best position to give me the advice as to speaker specifications which would best serve my purpose. This friend has made a study of radio and television and he recommended that I find an old console radio of good manufacture and use this as the basis for a sound system. He finally found me a set in good condition, complete with a 14" PM speaker and a high-output push-pull circuit. The set, cleaned up and adjusted, cost me \$12.50; or considerably less than the cost of a speaker alone. I now keep this old radio in my den, and by using a Jack connected to the volume control I am able to get the improved tone of the 14" speaker together with enough volume to handle anything I care to do.

Since the external speaker jack of the recorder is a shorting one, this also enables me to put records on tape by means of a conventional record playing attachment, and at the same time monitor the recording at any volume level I care to. This is an advantage when recording while others are watching television or otherwise engaged in any activity where the speaker volume of the recorder itself at recording level would be objectionable.

It would take several pages to list here the uses to which I have put the combination listed above, and my 6-year-old girl has also had endless enjoyment from this same "obsolete" radio by using it as an amplifier for her three speed record playing attachment which we originally purchased for her to use with a table radio of questionable tone quality.

I thought others of the tape recordists who want to get maximum results from portable equipment with a minimum of cash outlay might be interested in the potential of this combination.—F. B. Hart, Columbus, Ohio.

To the Editor:

I have read many articles explaining stereo sound. In a few of these articles I read that it would be pointless for a person with one ear incapacitated to purchase stereo equipment, even a waste of money to do so. This set me to thinking; is that person with only one good listening ear really wasting his money? It would seem to me that the room would be filled with sound, and that any person with one or two ears could feel the effect of realism that stereo has. That person would feel the effect more so when he would walk around the room. This is entirely theory, but is it true or not? I cannot truly test this out, but it seems plausible to me that any person capable of hearing will benefit from the addition of stereo to his set. I would appreciate any comments.—R. J. Williamstown, Mass.

TAPE CLUB NEWS

The United Recording Club NewsLetter has now been replaced by the Microphone, which has become the official publication of the United Recording Club. Articles appearing in the Microphone will include news of the club, news from members, and representatives, articles of educational value, and news from individual industries. Good luck with this step forward, URC.

American Tape Exchange member, Chet Sherksnas, must fulfill his military obligation and is therefore unable to continue recording his favorite radio program "X Minus 1" on tape (over NBC). He will furnish all tape and cover expenses if someone will come forth and offer his or her services in continuing this activity. How about it, ATE members?

Sightless members of the British Amateur Tape Recording Society consider tape recording and the club's activities along this line to be a boon to them. Why—because braille publications only cover a limited field, and since the British Tape Recording magazine is not published in braille, each month it is read onto tape for blind members. Also, a tape can be played back repeatedly, and these members can listen to the magazine as often as they wish just as the sighted folks can read it as often as they like. Then too, while some can read braille quickly, others are very slow and in some cases cannot read it at all. Blind members are now able to have "pen friends" all over the world.

For its blind members, in some cases, the club tapes specific subjects, but a large number of tapes of a general interest are circulated as well. If any member or group can supply 5" reels, recorded at 3¾ ips, on any topic, which the club can then copy, they are urged to do so. These are then

loaned to blind members. Send any such tapes to Bill Rawle, Secretary B-S-, 12 Glenfield Road, Darlington, County Durham.

Since Jim Greene, executive secretary of Tape-Respondents, International, accepted service on the Tape Recording Exchange Committee of the People-to-People Program, every new member of TRI has received a personal message from Jim explaining PPP and urging them to make overseas contacts for the purpose of assisting people in other lands to better understand America. President Eisenhower's speech opening the PPP, furnished to Jim by Harry Matthews, chairman of the committee, is available to any member of TRI upon request to Jim. Also, the People-to-People Program has been explained in a new manual being distributed to TRI membership. Nice going Jim.

Voicespondent Leonard Decker has been re-elected for another two-year term as Deputy for the Pacific District of the club.

Also, the Canadian members have elected Jacques Cimon to serve as their representative on the Club's Board of Advisors for the next two years following the resignation of former DD John Berridge to get married.

Potomac District Deputy Bob Crouse has established a Welcoming Committee for helping introduce new VS-ers to the pleasures of the tape recording hobby. The committee is composed of members who would like to exchange a few tapes, on a temporary basis, with any new member who wants someone to talk to right away. Members of the committee will help such members to get rolling without their having to select a name and write first for permission. Other District Deputies are invited to refer their new members to the people on this Welcoming Committee. The names of those on this committee were published in a recent copy of The Voicespondent.

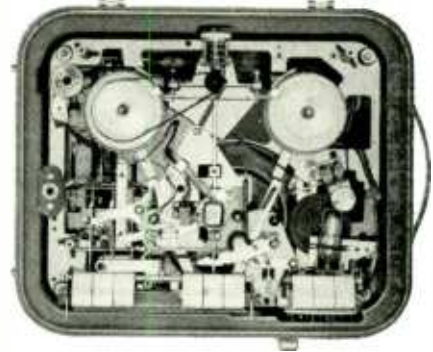
United Recording Club member Richard Drest has a collection of over 130 complete "Mer" Opera Radio Broadcasts on tape and disc. He is anxious to find someone with other such broadcasts.

Also, club member Joseph Savage is interested in meeting other recording enthusiasts who have been taping air shots from TV and radio in the last 10 or 15 years, particularly personalities from the legitimate stage.

An Australian tape bug is interested in contacting some tape club members. He would like to discuss and obtain literature on a suitable recorder for general work. He would later undertake recordings in Australia for fellow tape bugs and interested persons. Anyone interested in contacting him is invited to write to Edwin P. Brown, 149 Sampson Road, Elizabeth, South Australia.

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TEEN TAPERS

BY JERRY HEISLER



WELL we finally made it—we got our stereo tape recorder. Thanks to Mr. Bob Tidrick of the Dactron corporation, my TDC Stereotone was converted to a unit that will play or record either stacked or staggered tape. The whole deal is very simple too. The heads in my machine were removed and replaced with two stacked heads.

By plugging in the appropriate portion of each head I can choose whatever arrangement I want. The conversion shouldn't be a very difficult project for those of you who are handy with the soldering iron. If you would like information on how to do this let us know, and we'll see if we can't get the dope for you. We now have a chance to try stereo recording once we get hold of another recording amplifier.

Now that we have such a unit what can we do with it? Many ideas came to mind and I thought I'd share them with you in case you have a yen to do some informal recording.

One thing that came to mind was a gimmick we tried at the hi-fi show in Chicago several years ago. We put on a display involving stereo with the same person holding a two way conversation. The questions were recorded on the left track and the replies on the right, and both in the same voice. The effect was good and the job quite easy. You might like this for a party game.

Of course music is of interest to all teens and so we'd like to try our hand at making some tapes of some friends who "jam" once and awhile.

Sound effects are a fascinating challenge. "Sound in the Round" by Concertapes, is an example of what can be done with those.

So here then we have a few ideas to keep us busy in the months to come and we'll pass along the results to you. If any of you do anything, be sure to let us hear about it.

This column has always made it a practice to search out low priced items of interest to teen recordists. We have tried to find quality items at a low price because money is important to young people. Along this line we have word that the Nortronics Company, is coming out with a couple of new amplifiers that have really interested me. These amplifiers, coming out June 10th, will really fill a teen need. One is a single track record amplifier to serve as the other half of a stereo unit.

The amplifiers, featuring a VU meter, will sell for only \$49.50. And in addition, Nortronics has a 2 watt playback amplifier selling for \$39.50. With these two units a stereo conversion could be made for under \$100 and this is a set-up so you can MAKE as well as play stereo tapes. We're going to check into this and you can look for an article in the next few months.

For you kit builders we noticed that the Heath Company is coming out with a kit to

make a recording unit. The tape deck is complete, but the amplifiers need to be built. Heath also has a kit coming out soon which builds a tape rewinder. It is simply the motor mechanism without any heads, enabling quick rewinding of tapes. Always something new if you keep your ears open.

Pictures - pictures - pictures. We want pictures of teens doing things with tape recorders. Why not take some snaps next time you use your recorder, and send in one or two. Remember that this column serves two purposes. First we help you to enjoy your recorder, but second, we want to help others serve you. If you tell and show us what you are doing, we can pass the information on to people who want to know what your needs and desires are. And the one field where we can promise you results is recorded tape. The manufacturers have been convinced a long time ago that teens buy the most records. If you let us know your desires you can be sure that tapes will be appearing with the type of music you like. So let us know and send us pictures.

We had some inquiries regarding making recordings of telephone conversations so we thought we'd take a minute to mention a bit about it. First of all, the best way to record a phone conversation is to use an induction coil. These are available in forms that attach directly to your telephone and no microphone is required, since the coil plugs directly into the recorder. Phone recordings can be a lot of fun if used with discretion. It is best to advise the party that you are going to record the conversation and never attempt to use the recording to embarrass anyone. Phone recordings made without the use of a beep signal are unlawful, so if you are planning on using a phone recording for some special purpose other than for fun you had better contact the telephone company. Remember too, that it is illegal to connect any wires to your phone line so be sure and use the induction coil which merely attaches to the receiver or serves as a base for the receiver. These devices are available for about \$5.

By setting up the phone recording device you might arrange for people to leave messages. This could not be done automatically, but if you were to answer the phone for your mother and she wasn't home, you could plug in the recorder and have the person leave a personal message. The uses of this type of device are very wide. The phone company has a unit for rent that will record automatically.

So let's hear from you about the interesting uses for recorders that you'll pass along to others.

And just one last word of advice for those of you who are going to summer camp either as campers or counselors—Take your recorder with you. You'll have never to be forgotten memories as I did last summer.

TAPE IN EDUCATION

BY JOHN J. GRADY, JR.



WITH mixed feelings of admiration and sincere exultation these lines are intended to pay tribute to a teacher, an instructor of music, who undoubtedly qualifies for first place on that list of Praise-Be-To-You Inventive Educators, so often referred to by Tape In Education, because of constructive applications of magnetic tape to classroom routine. Every teacher could well tender a salute to a magnetic recording pioneer from their own ranks—Howard M. Van Sickle, of Mankato State College, Mankato, Minnesota.

Way back in 1946—and according to Mark Mooney's Chronology Of Magnetic Recording, 1946 really is way, WAY back—Howard Van Sickle, while making a vacation trip from Illinois to Nebraska, visited a number of radio stations seeking practical information about a communication process termed wire recording. At Station WOW, in Omaha, an old schoolmate, who had just returned from a Radio Trades Show, in Chicago, was enthusiastic about a recorder which was demonstrated at the show. On it, sound recording, and immediate playback, was accomplished by the use of a processed paper tape. The fact that Station WOW had ordered a couple of the tape recorders was a convincer in making Mr. Van Sickle a pioneer in educational tape recording. His first tape recorder was delivered to him early in January, 1947. But there was no tape with it. Just an apology. That's when the first known Inventive Educator among magnetic recordists got into momentum. Even without a reel of tape, he decided to stage a demonstration with the new recorder. That demonstration took place in Springfield, Illinois. Aided by the dealer, through whom the recorder was delivered, some of the first splicing of magnetic tapes was accomplished. Ribbon strips were cut from some oxide coated paper discs and spliced into a short tape. Mirabile dictu, it worked. Tape In Education definitely is prejudiced in favor of Howard Van Sickle as the original trail breaker in the rapidly expanding band of Inventive Educators in the magnetic recording field. Read on, then you'll understand why.

According to Chronology Of Magnetic Recording, in 1946 there was no established market production of magnetic tape. Such tapes as were developed rated as experimental products. In 1947, however, there were production runs of black oxide paper base tapes. And early in that year, Mr. Van Sickle obtained a single reel of this tape. For weeks, only this one reel was used during his music classes. This lonely orphan thousand foot reel was recorded and rerecorded dozens of times. This was the time during which the dedicated inventive educator pioneered in devising usages for magnetic tape so that music could

be taught more efficiently in the schools.

Fortunately, from a historical standpoint, there is a published record of the educational innovations with magnetic tape developed by Mr. Van Sickle for application to modern music instruction. Someday, in the Museum of Magnetic Recording, the November-December, 1947, issue of EDUCATIONAL MUSIC MAGAZINE should have an honored spot among the relics of the pioneer days of tape recording. The magazine should be opened at page 43. There's an article beginning on that page, titled, *We're Using A Third Ear*. Undoubtedly, it's the first article descriptive of the proven advantages of educational magnetic recording. The article carries the by-line, Howard M. Van Sickle, Pana Township High School, Pana, Illinois. Remember, the article was written in the early months of 1947, and conveys the information that the tape recorder was ordered in August, 1946, after the manager of radio station, WOW, in Omaha, had sustained the belief of the author, and recommended, that magnetic recording had extensive classroom possibilities.

The article, *We're Using A Third Ear*, contains a gracious paragraph that it's a privilege to repeat here. There's the hope it may secure the attention of some of the parents in Pana, Illinois, it originally was intended for. The intention is to add the thanks of appreciative magnetic recording fans, and to assure them that as members of the Music Patrons Club, way back in 1847, they were the first to sponsor, and the first to provide for their children the great advantages of educational magnetic recording. To them, in sincere appreciation, we repeat: "We are using the recorder to inform the parents, who are members of our Music Patrons Club, of the musical activity that takes place in the classroom. Parents are gaining a better appreciation of the school music work through hearing the "sound pictures" we take of their children's work. It is the fine group of parents in the Music Patrons Club who made it possible for our school to obtain the tape recorder."

To Dr. Van Sickle, of Mankato State College, ardent exponent of educational Audio, executive of American and Minnesota String Teachers Associations, consultant and producer of tape recordings for musical instrument manufacturers, and FIRST, again in the adaptation of Stereo to music instruction, Tape In Education, in behalf of all our readers thanks you, and assures you that your premier spot in educational magnetic recording is safe. We hope for your permission to relate your initiation of stereo into music instruction in an early issue of HI-FI TAPE RECORDING.

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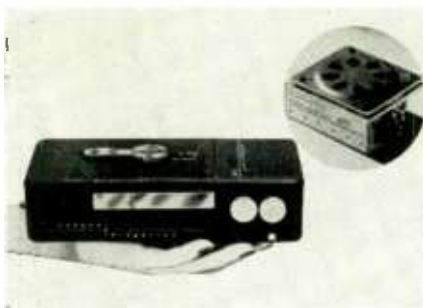
NEW PRODUCTS

REVERE STEREO



With the introduction of the T-1120, Revere Camera Company offers an inline stereo machine. The system enables recording and playing back monaurally on the upper channel; the lower channel is designed to plug directly into the phono input of phonograph, radio or television receivers. No auxiliary pre-amplifier is necessary as the pre-amp is already built-in. Other features include: "Balanced-Tone" (loudness control); real portability with molded glass and steel case; single knob control; precision index counter; public address system; input switches automatically for mike or phono; and tape speeds of $3\frac{3}{4}$ and $7\frac{1}{2}$ ips. Frequency response is 75 to 13,000 cps, signal to noise ratio is greater than 48 db; and wow and flutter is less than 0.3%. This machine is priced at \$199.50. Contact Revere Camera Company, 320 East 21st St., Chicago, Illinois, for details.

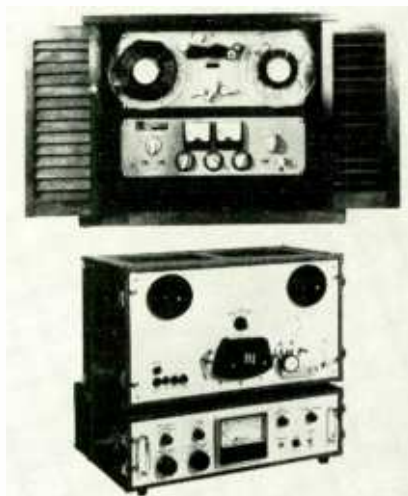
MIDGETAPE 300



Mohawk Business Machines Corporation has announced the development of a new transistorized recorder, the Midgetape #300. This is operated by four transistors instead of vacuum tubes. There is extra space for a tiny, self-contained loudspeaker, which is available as optional equipment. The tape can be played back through the microphone. Other features include: a visual battery life indicator which goes off

when the battery has one hour's life left as a warning to change the battery; cartridge loaded tape which eliminates difficult tape handling and multiple tape reels; instant warm-up—a governor-controlled motor which insures constant recording speed during decreasing battery life; and a visual elapsed recording time indicator. The 300 lists at \$249.50. Write to Dept. AR, Mohawk Business Machines Corp., 944 Halsey Street, Brooklyn 33, N.Y. for full details.

NEW MAGNECORDS



The Magnecord Division of Midwestern Instruments, Inc., Tulsa, Oklahoma, has announced two new recording instruments, the Stereo Magnecordette (top) and the P-75 Editor II (bottom).

Features of the Magnecordette include: stacked inline stereo or monaural half track; $3\frac{3}{4}$ and $7\frac{1}{2}$ ips speeds; frequency response 40—15,000 cps plus or minus 2 db at 15 ips; signal-to-noise ratio down more than 48 db from the 3% third harmonic distortion point; Record Amplifier Inputs: two high impedance microphone inputs; auxiliary (tuner, phono, tape, etc.); Playback Outputs: cathode followers, to be loaded with not less than 20,000 ohms, one volt output from normal recording level (OVU); meter reads record level, playback level channels A and B; custom cases and cabinets are optional at a nominal extra cost. This machine retails for approximately \$395.

Distinguishing characteristics of the P-75 Editor II include: outboard bearings on tape drive capstan; tape speeds of $7\frac{1}{2}$ and 15 ips; direct motor capstan tape drive; reel size $10\frac{1}{2}$ " NAB and 7"; push-button controls; 3 heads—erase, record, playback; fail-safe brakes; tape break automatic shut-off; frequency response 40 to 15,000 cps, plus or minus 2 db at 15 ips; signal-to-noise ratio 55 db based upon 3% total harmonic distortion point; and flutter and wow at 15 ips less than 0.2%. For complete details, and price of the P-75 Editor II, write to the manufacturer.

STEREO COMPONENTS

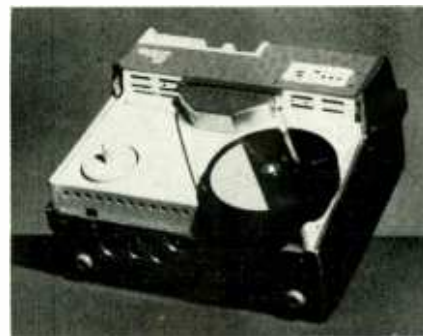


The Sargent-Rayment Co. has announced the addition of two new stereo units to its line. One is the SR-380, FM-AM tuner with stereo pre-amp tone control (top) and the other is the SR-534, 34 watt basic stereo amplifier (bottom). Some features of the SR-380 include: stereo (dual) inputs for tape heads with 3 positions of equalization for 15 (NARTV), $7\frac{1}{2}$ and $3\frac{3}{4}$ ips, phono cartridge (both magnetic and ceramic), tape recorder, and space for possible future application; a stable FM sensitivity of 3 uv for 20 db quieting; and push-button operated rumble and scratch filters.

Some features of the SR-534 include: 17 watts output each section, 34 watts output for combined dual channel for monaural use; less than 1% intermodulation distortion at rated output; less than 0.5% I.M. at 10 watts output; frequency response of plus or minus 0.5 db, 10 to 50,000 cps at 1 watt.

For complete information on these new stereo reproducers, a four-page brochure is available by writing to the Sargent-Rayment Co., 4926 E. 12th St., Oakland, Calif.

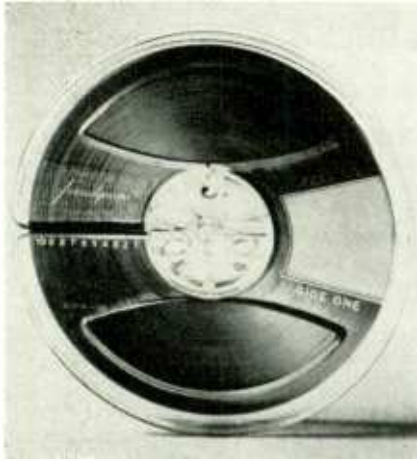
AUDIO VENDOR



Introduction of a new long playing Audio Vendor, a recorder accessory that allows automatic repetition of recorded messages and music, has been announced by Cousino, Inc., 2106 Ashland Avenue, To-

ledo, Ohio. Designated Model ULP-110, the new model can be used on nearly any tape recorder. Playing time of the new tape repeater is approximately one hour with the Moebius Loop. The company is offering this item for \$39.50. For additional information, contact Cousino.

NEW REEL



A unique 7" reel, the V-Slot Selection-Finder Reel, has been announced by Ferrodynamics Corporation, Lodi, New Jersey. This is designed to add to the convenience of recording and playing back tapes. It is constructed with a V-slot for quick threading. Permanent selection finder numbers are molded along the edges of this slot permitting rapid location of the desired selection when playing back the tape. The reel is made of opaque slote gray plastic and matches the permanent plastic container that protects all Sonoramic tapes. The reel has ample space for identification. Contact the manufacturer for additional information.

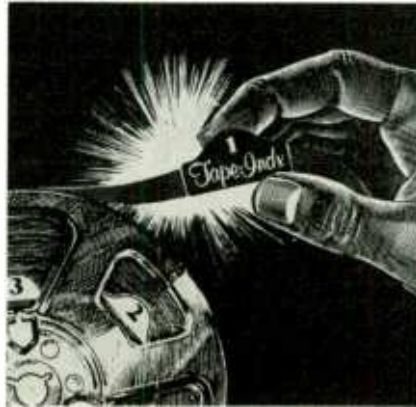
FEN-TONE MIKE



The Fen-tone Corporation, 106 5th Ave., N.Y.C. has announced a new miniature bi-directional ribbon velocity microphone

called the "Tix Sixty Special." The unit is comprised of a triple horse-shoe magnet supporting a relatively long corrugated limp aluminum ribbon which is encircled with 4 breath shields. The frequency response is flat plus or minus 2 db, 50 to 12 kc. and the output at 50 ohms referred to hi-Z is—58 db. This ruggedly shock-mounted microphone has a front to back sensitivity gradient above 1 kc. on the order of 2 db/octave. Net price is \$96.50 with 18 feet of balanced shield cable. For complete details, write the Fen-tone Corporation, above address.

TAPE INDX



The Datrel Company, 520 Fifth Avenue, New York 26, N. Y., has introduced a new product, known as Tape-Indx, for logging tapes. You simply press a Tape-Indx tab to the exact spot you want to identify for future use. These tabs are numbered and colored and can be removed.

IRISH 400 TAPE



ORRadio Industries, Inc., Shamrock Circle, Opelika, Alabama, has introduced a new "fortified" double-play tape. It has a catalog number of 400, and it is made on DuPont's Mylar polyester base, specially reinforced for sinewy strength. According to the manufacturer, this new tape is much more resistant to stretching, and it has the added advantage of the Irish Ferro-Sheen process which bonds the oxide coating on to the base so firmly it won't come off. The price of this new tape is \$11.95 for a 2400-ft. reel. Write to ORRadio for additional information.



Joseph Szigeti
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BRAND
ferro-sheen
recording
tape

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QUESTIONS & ANSWERS

Questions for this department may be sent on tape or by means of a postcard or letter. Please address your queries to, "Questions and Answers," HI-FI TAPE RECORDING, Severna Park, Maryland. The most interesting and widely applicable questions will be used in this department and all inquiries will receive a tape or letter reply.

Q—I wonder if you could help me. I'm new at this tape recording hobby. I bought a Pentron Hi-Fi Stereo NL35 Tape Recorder. What I want to know is how this stereophonic sound works. I subscribe to the Complete Catalogue of Stereo Music, and on page one it gave me some information. But what I really want to know is if you can get stereo music without the tape or is it only the tape that gives stereo music?

On my Pentron there is a 10 foot cord coming out the back. What must, or what do I do with that cord—what is it for? The instructions I received with the recorder don't give very much. Somebody said you must plug the cord into the TV or radio output. But I looked at the TV and radio and I have no outlet.

I don't think I'm making much sense to you. Maybe you could refer me to somebody else. It's very important to me.—A. T., Elyria, Ohio.

A—The cord to which you refer supplies the second channel sound and must be connected to an amplifier and speaker or to a radio or TV set amplifier for you to hear the stereo sound. If your radio or TV does not have a phono input jack then your serviceman can install one for a few dollars. To hear stereo you must have two sources of sound, one for each ear. In your case, the recorder itself will supply one channel, the radio, TV or another amplifier and speaker the other.

Q—I am an ardent fan of our magazine TAPE RECORDING, a subscriber, and I hardly miss reading a printed word in each issue.

I have a few questions, and wonder if you would be so good as to answer them in Questions and Answers.

#1—I have a Bell & Howell tape recorder. How come I never see any advertisements regarding this make?

#2—What is the real meaning of stacked or staggered heads?

#3—What is the meaning of "dual tracks"?

#4—What is the meaning of "full track," and "binaural recordings"?

#5—What is the meaning of "monaural"?

#6—What is the meaning of "stereophonic"?

I hope you see fit to answer these questions at your earliest convenience.—A. E. S., Bovill, Idaho.

A—#1. There you have us—they are still making them and selling them too. Monaural sound is that reproduced from one sound channel on a tape or a single groove on a disc. Stereo sound is played back from two channels and has been recorded with two

microphones, one to represent the hearing of each ear. Two channels are employed on the tape or separate signals are impressed on each side of a single groove in a disc. Dual track means that there are two sound tracks on a tape, one along the top edge and one along the bottom. In stereo sound, both are used at the same time. Full track means the tape is recorded the full width of the tape. A stacked head is a stereo head which is really two heads in one, one mounted above the other to play both tracks at once. Staggered heads are also for stereo but are mounted approximately 1/4 inches apart.

Q—I was wondering if you could possibly help me with my problem. Every so often there is a loud, shrill noise, such as a television test pattern sound, on my tapes. This occurs at anyplace on the reel. I could play the tape one time and it would be all right, then the next time I play it this noise would blot out the recording. I don't use cheap tape. The tape I use is from a leading manufacturer of recording tape. I store my tapes on a piano and was wondering if this had anything to do with it. Please help me before my tapes are ruined. Thank you.

P.S. I greatly enjoy your magazine and wish you could have twice as many pages.—F. S., Pontiac, Illinois.

A—You probably are getting tape squeal from glazed pressure pads on your recorder. As the pressure pad ages it becomes loaded with dirt and other substances picked up from the tape. This finally becomes a hard glaze and the squeal is just like that of a hard piece of chalk on a blackboard. To eliminate it, replace the pressure pads with new ones or clean and brush up the ones you have. Storing the tapes atop the piano would have no effect on them whatever.

Q—I recently installed a #8905 V-M stacked and staggered conversion on my model 711 V-M tape recorder. It seems to play both stacked and staggered tape very well.

The difficulty I am having is in the recording or when I am recording a radio program, in order to stop the advertising I use the pause button, and while this is on I give the right hand reel three or four turns to have a few seconds in between the musical selections. I find when I play the tape back I have picked up the voice of the announcer, and it sounds like a series of squeaks, etc. Like when you tape a program at 3 3/4 ips and then play it back at 7 1/2 ips.

Now there were two things that I didn't do and I don't know whether it would have any bearing on this or not. I didn't discon-

nect the hum bucking control from lug #8 of head socket, and install a short wire from lug #8 of head socket to lug #9 of the record switch. Also, I didn't install a jumper from pin #2 of speaker plug to the head of the rivet that mounts the terminal lugs on the speakers. I didn't bother the power transformer, I didn't seem to have much hum. I hope you can give me some advice that will clear this matter up. Thanks very much.—R. W. C., Columbus, Ohio.

A—The hookup in the recorder has nothing to do with this. The pause button merely lifts the capstan roller away from the tape so that the tape motion is stopped, however, the recording amplifier is still putting a signal into the head, even if the tape is not moving. Thus, when you wind the tape past the head by hand, you will put a garbled signal on it which will be audible on playback. We would suggest you depress the pause button, then the stop button, at which time you can move the tape, put the recorder back in record and when the time comes to pick up the program, release the pause button. This will eliminate the noise between selections.

Q—I have a Webcor Royal Coronet with 3 speakers, 8 watts power output, and a frequency range of 50 to 12,000 cps. I use it mainly to record music and need a microphone in those cases where an input-output cord cannot be used. With such a large number of microphones on the market I am lost as to which one would best serve my purposes. A top notch professional one is probably not needed, yet I do want one that will make full use of the range of my recorder. Would you recommend several microphones which can be purchased for no more than \$35 to \$40? Any information will be greatly appreciated.

P.S. I have Jack Bayha's "All About Tape On Tape." In it, he mentions improving your recording equipment by getting a good low impedance microphone and a cable transformer. Now, the microphones listed as examples range in price from \$60 to \$80. I've been informed that these are professional type mikes and would not really be needed for home use. Let's hope not, because I built my tuners from Heathkits and am still looking forward to the day when I can increase my speaker system.—L. R., Cleveland, Ohio.

A—The microphones supplied with tape recorders are of average quality and do a good job on voice and music. For finest results, however, a better mike is a good investment. The higher priced mikes have flatter responses and are less subject to heat and shock than the ordinary crystal mikes. A medium priced dynamic mike of any of the well-known makes should be satisfactory. These list in the \$30 to \$40 range.

Low impedance microphones were advised because of the fact that you can be almost independent of cable length with them. With a high impedance mike, cable lengths of 25 feet are about maximum without losing quality in the recording. With low impedance mikes you can run 250 feet and get a good signal. Of course, to match

the input on the recorder you would need the cable transformer mentioned.

Q—Many times I have heard the words "it can't be done" in regard to tape practices. But, recently you have shown that "it can be done." For example, copying on one machine (Jan. '58 issue).

Here is my thought and problem. I feel that there is, or can be devised, a method of adapting a monaural record, stereo playback unit to stereo record using only an additional preamp and maybe an additional head, plus some work.

After putting three hundred into my present system, I don't want to put out an additional five or six hundred to record stereo. My present system I want to keep because of its portability. I hope that you or some of your readers have some ideas about this. My dealer just says "it can't be done." I say, somehow, it can be done.

P.S. Hi-Fi Tape Recording is it—the best.—G. R., Garfield, N. J.

A—If you want to do a bit of rewiring, you can record stereo on your present machine. What you must do is disconnect the leads going to the second head from the playback preamp and feed recording current in instead, either from a recording amplifier (you must furnish bias current) or from another recorder. If you have a stacked head you may get some crosstalk, staggered heads work fine. You will have to use fresh tape or bulk erase the tape as you will not have an erase head on the lower track.

RCA Sound Tape



... on "Load-Easy" reels
for fast
tape threading!

Now available wherever superior-quality magnetic tape is sold. On 5" and 7" Load-Easy Reels for fast, simplified threading. Excellent for low-noise, extended-range recording and playback!



**RADIO CORPORATION
OF AMERICA**

Electron Tube Division Harrison, N. J.

Announcing—

Tapebook #2

HOW'S YOUR HEARING?

by James M. Laing

Are You Getting The Most Out of Your Hi-Fi or Stereo?

Can You Understand Speakers? Hear Lyrics Plainly?

Protected hearing is the key to your listening enjoyment.

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

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

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

Test your hearing . . . and be sure!

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

TAPE CONTAINS

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

33 tone pairs to test musical discrimination

75 word pairs to test speech discrimination

Full 7" 7/2 IPS
dual track reel
full direction booklet

Only \$9.95

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ASK YOUR DEALER OR ORDER FROM
TAPEBOOK DEPT.
Mooney-Rowan Publications
Severna Park, Md.



Photo By Donn Studio

Interviews with the bridal couple, both before and after the ceremony, are essential for an interesting, meaningful recording.



Photo by Donn Studio

Arriving on time to record a wedding means coming an hour to forty-five minutes prior to the ceremony.

Do You Tape

This Man

by Marx Cooper,

Exec. Director of Artistic Sound Recording

... record weddings for fun and profit.

RECORDING weddings can be a nice added source of income for the average recording enthusiast. The fact that so many services center around this important human affair indicates the vast potential this area has for the sound recording medium. A sound recording of this festive occasion including the voices of many of those in attendance makes a priceless irreplaceable gem when played back in successive years. Generally most people do not have tape recorders, so the final product will be in the form of LP discs or 45 rpms. You can have records made at reasonable rates ranging from \$5 to \$10 from any recording studio specializing in cutting discs.

The astute tape recording enthusiast can incorporate his skill to provide a most unique treasure for bridal couples, which is the ability to capture a piece of time and repeat the very words, sounds, actions, and moods of this particular event and can make it possible for the couple and friends, years afterwards, to relive that particular moment of their lives.

The main pieces of equipment that you need besides a tape recorder are a mike stand, a set of earphones, and some microphone extension wire which should not exceed 25 feet in length. Your tape recorder need not necessarily be in the high price range but it should always be in top condition.

Contacts for engagements can come from a variety of sources. One easily accessible source is the society column of the local newspaper. Most of your large important affairs will be listed there and it is a simple task to contact these people. Most of the time you will contact the bride. Sometimes friends may want to present such a recording as a gift. Another way is to team up with a photographer and present a "package" of wedding photos and recording. This combination has infinite possibilities such as making slides with the actual sounds of the wedding. Also with the advent of the "EUMIG" 8 mm projector, it is possible to make sound movies in perfect synchronization having the tape govern the speed of the projector.

A third and excellent source of contacts is provided by leads furnished by the places where the weddings occur. An equitable arrangement can be worked to mutual advantage by the source being entitled to a small percentage of the charge, usually between 10% and 20% depending upon the type of services desired in the recording by the marriage couples.

You should decide on a straight scale of charges which will vary according to the amount of time you have to spend on working and completing the wedding. A number of people from whom we receive tapes regularly have indicated to us that they pro-rate their charges at \$12 per hour. Work for various classes of weddings may vary from three to twelve hours depending upon how polished a product is desired by the wedding party. It is important to note here that while some people do enjoy a substantial income from taping weddings, it would be far better and successful for the novice to enter this field with the idea of expanding and bettering the fascinating hobby of tape recording and making it more creative than in viewing it from the financial aspect. After you have recorded a few weddings for practice, with this idea in mind, you will then have samples of your work plus the experience to command professional prices.

In fact start with the idea that for the first two or three weddings you won't make a cent. View this as merely an

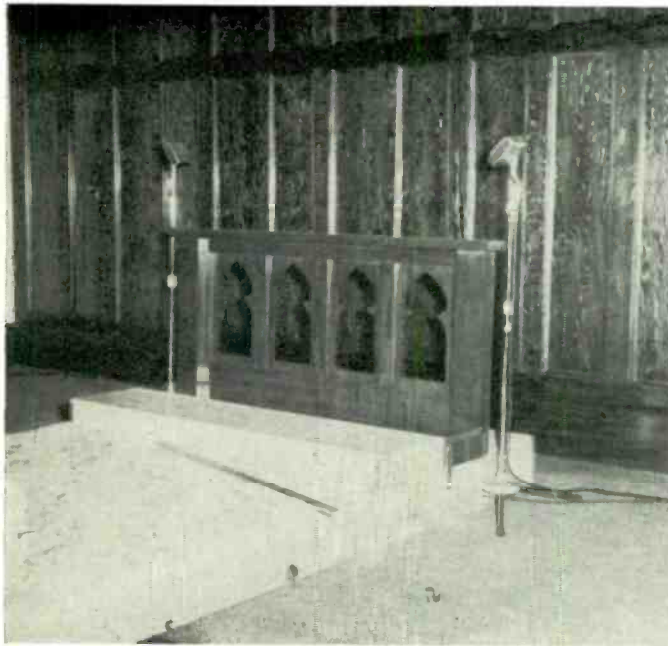


Photo By Donna Studio

Often regulations prevent you from getting closer than thirty feet from the altar. Consequently, your volume will be high and will have to be turned down whenever music or singing is heard. Even so, you should try to avoid changing the volume every few seconds.



Recording equipment can sometimes be set up behind the organ face. This means shorter cable runs and a spot where the proceedings may be watched. An ante-room off to the side is equally good as a spot in which to set up the recording equipment. Two recorders were used to make sure of a satisfactory recording.



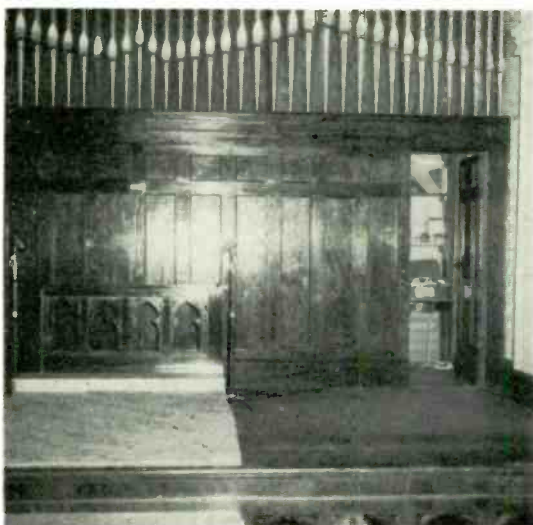
The closer you can locate the mikes to the point where the vows will be taken, the cleaner the recording will be as background noise is reduced in proportion. In this instance two mikes were set up and the florist covered the stands with fronds to hide them.

expanded training course; it will more than pay off in the long run. Even if you were able to convince a person to buy your service at the professional rate you would in all probability not be able to handle unforeseen difficulties which invariably occur at the first few affairs, as well as you would if you had some prior experience. Thus if you happened to spoil the recording or produce one of inferior quality on your first one or two jobs, you could lose valuable recommendations and your service and name would be damaged. More important, such frustrations could engender your discouragement and at this point you might be tempted to give up the whole idea. But if such difficulties did occur during the inservice training period, you would not be held accountable for errors, and yet be free to learn from your mistakes. Of course the wedding couple should be willing

to assume the actual cost in terms of materials such as the tape and your disc costs.

A good recording can be made in an almost infinite number of ways. Your final editing is the creative part of the job. Too often we receive tapes which consist entirely of lengthy ceremonies, with long pauses at various intervals. Such tapes when transferred to discs offer 30 to 45 minutes of boredom because of the lack of creative editing. The main central item you need to record, of course, is the service of the marital union.

Ideally your microphone should be along the side of the area where the bride, groom and officiating clergyman will be standing. Always check beforehand personally with the clergy of the church to see whether you have permission to record the ceremony. Some church regulations prohibit your



The mike cables were run through a hole in the partition and thence to the recorder inputs. Cords were taped to the stands and a rug was thrown over the cord where it passed across the walking space to prevent accidents.



After the wedding be sure to get all the voices of friends, family and acquaintances of the bride and groom. Usually their remarks are confined to good wishes for the future happiness of the couple.

microphone in certain areas on religious grounds. Sometimes you may not be permitted closer than 30 feet from the altar. In such cases you will have to monitor carefully with your earphones because you'll have your volume turned almost to full power. A sudden change in sound intensity such as the playing of the organ or the soloist singing, will have to be met quickly by turning down the volume and then re-adjusting it again when the service proceeds. Also be prepared to turn up the volume at the point of the actual exchange of vows. Usually at this point the couple become very humble and since this is the only place in the service where they get to say anything, you want to be sure you don't miss it.

Many people record at the $3\frac{3}{4}$ i.p.s. speed because of economy; this is usually quite suitable. However if your machine exhibits any tendency to "wow" and "flutter," your recording will be ruined due to the gross harmonic distortion of the instruments usually heard at weddings. The most popular in the following order are: the organ, the piano, and/or combination of both. These instruments are difficult enough to record when machines are running smoothly, but they become impossible when recorded by a poor running machine. Therefore if your machine has any "wow" at the $3\frac{3}{4}$ i.p.s. speed then record at $7\frac{1}{2}$ i.p.s.

The next item which no good wedding recording should be without are the interviews with the bride and groom, immediate family, close friends and relatives. At massive weddings where more than a hundred people are in attendance, the bride and groom will select the guests for you and will usually co-operate fully in having those individuals honored by placing their voices on the tape. It is at this point that experience will help establish the correct inter-

viewing approach to people. Your questions should be fairly standard to evoke a common genuine response of congratulations and to add a bit of human interest to the record. In fact the interviewing section and how well it is handled and edited is the key to making a quality recording. Questions should be designed so that the party being interviewed will relate a significant impression or humorous incident relative to either bride, groom or both. Such as the time when Jane fell in the water wearing a new dress, or a significant gift given to or from the interviewed party. Actually any talk that relates to experiences of the bridal party will help give the recording a warm human quality.

There is no set pattern of incorporating your interviews into the final recording. One chap in Wisconsin sends us tapes regularly where at the beginning of the recording, the bride and groom are interviewed separately at their respective homes as they prepare for the ceremony. He also talks with them again after the service. In large cities it may prove too difficult to move from the bride's home to the groom's when they live far apart. You will learn with practice to develop the interviewing technique that is best.

After you have a little experience you may want to experiment using two mikes. One to record the service and the other used by the operator to add a running commentary of the procession and service. This adds a documentary touch but should always be attempted with some form of a script to know who's who in the procession.

The editing of your tape can be accomplished in two ways. If you are fortunate to have two recorders, you can re-dub various portions onto another tape. (See "Using Two Recorders" in the May 1958 issue). The other is to splice the desired portions together using splicing tape and eliminating the "dead" material from the program. (See "How To Close Edit" in the March 1958 issue.) In either case a final hearing and total timing will be necessary if you're going to have records made since this will determine the size and quantity of your needs.

Once you decide that you're going to try that first wedding to develop some experience, you will soon see a whole new interesting field open up to you and how much more extra enjoyment you'll get out of your recorder. Your only limit in this field is your imagination.



Photo by Donn Studio

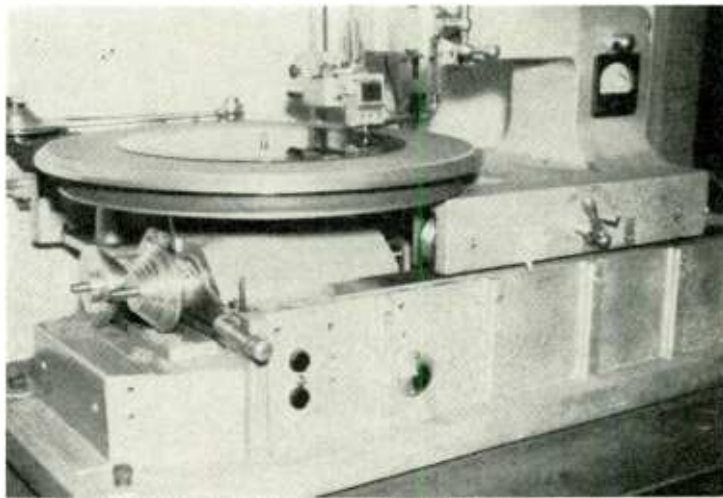


Photo Courtesy United Sound Systems

Left: Always make sure you know the exact time length of the final edited tape so you will know what type disc you will need. Above: A professional multi-speed disc recorder. LP discs should be cut on high precision equipment because of the fine nature of microgroove recordings.



John K. Pearce of Australia finds tape exchange a personal means of learning about your fellowman.



Bill Martin of Fresno, Calif., blind veteran, is an active member of the Tape Recording Exchange Subcommittee of the P-to-P Program.



"... our friendship is very deep, and each tape brings us closer together." Walt White, New York.



"I am sure I will enjoy this adventure in sound." (Tape exchange). Margaret Billington, Australia.



"... people all over the world will know each other better by exchanging tapes." Hans Weber, Germany.

PEOPLE - TO - PEOPLE PROGRAM

by Harry Matthews
Chairman Tape Recording
Exchange Subcommittee

... a giant step in the promotion of human understanding.

ON September 11, 1956, a group of leading American citizens met with President Eisenhower to discuss ways of establishing new paths towards international understanding. From this meeting the People-to-People Program developed, based on individual efforts outside and beyond official government channels.

Establishment of a subcommittee on Tape Recordings Exchange, under the general Hobbies Committee, was hailed by tape enthusiasts all over the free world as official recognition of a worthwhile movement towards understanding between nations.

When the tape recorder became available to the average man, his first thought was, "Why not mail this reel of tape to friends instead of writing letters?" The idea grew to include tape exchanges with people in other countries with a view to finding out how they live, and the Tape Recording Exchange movement was started. School classes and youth groups found tape exchange with similar groups in other countries a "natural" for their activities.



Above, left: An afternoon tea with an international flavor occurred at the home of Peter Goossen, Amsterdam, Holland, when he and his wife entertained four tape friends from other countries whom they met through World Tape Pals, Inc. Left to right: Mrs. Peter Goossen, Marjorie and Eric Channon (England), and Mr. and Mrs. Henk Mostert (Indonesia). Above, right: George Pappas and a group of his students in Melbourne, Australia, make a tape recording destined for exchange with a school in the United States.



Gerhard Nieckau, left, and Albrecht, a member of Munich's Young Soundcatchers, recording club sponsored by Gerhard, make on-the-spot recording of a Munich, Germany, festival for their tape program, "Life in Munich," available through World Tapes for Education.

Short of a personal visit, tape exchanges between individuals give one of the truest possible pictures of life at the common man's level. "Much good is bound to result from this international exchange of greetings and ideas on the citizen level," wrote a representative of the recording industry in 1954, two years before the inauguration of the People-to-People Program.

"My next-door neighbor talking to me over the garden fence," is the way Brian Muncaster, tape enthusiast of Portsmouth, England thinks of his tape pals in the United States. "How little it matters," he says, "That the fence is three thousand miles wide."

"But," questions the layman, "What influence can the discussions of two ordinary people several thousands of miles apart have on international understanding?" A great deal, say the founders of the People-to-People Program.

"If we are going to take advantage of the assumption that all people want peace, then the problem is for people to get together and to leap governments—if necessary to evade governments—to work out not one method but thousands of methods by which people can gradually learn a little bit more of each other." So spoke President Eisenhower as honorary chairman of the PPP.

The advantages of personal conversation over regular channels of news is expressed by many people. John K. Pearce, Australian radio personality, says, "However good the authorship in your press, however personalized the announcing on your radio or TV, you know that the message is for you collectively, not for YOU—personally." And the opinion of Ron Clough, of Wales: "Politics won't settle the international problem—only the people, of all colors, races, and creeds."

A survey of people who exchange recorded visits with overseas friends yielded the information that the average such person has three or four tape pals in other countries with whom he exchanges tapes regularly, and he is looking for one or two more interesting contacts. The greatest num-

ber of tape friends reported by any one individual was twenty-six! The same survey also revealed that a tape from another country is heard by at least five people; family, friends, or students.

Thus a person with four tape friends is talking not to four people, but to twenty! Multiply this by the thousands who use tapes for correspondence, and an impressive audience is the result.

The organized tape exchange associations assure the wide dispersal of this audience throughout the free world. Anyone with a tape recorder available may begin exchanging tapes by using the membership roster of such an exchange association. Although operated as non-profit associations, such groups pay great dividends in the form of good will.

Every user of tape may cooperate in the People-to-People Program by increasing the number of his tape friends outside his own country, and by making each of his tapes a personal message of friendship.

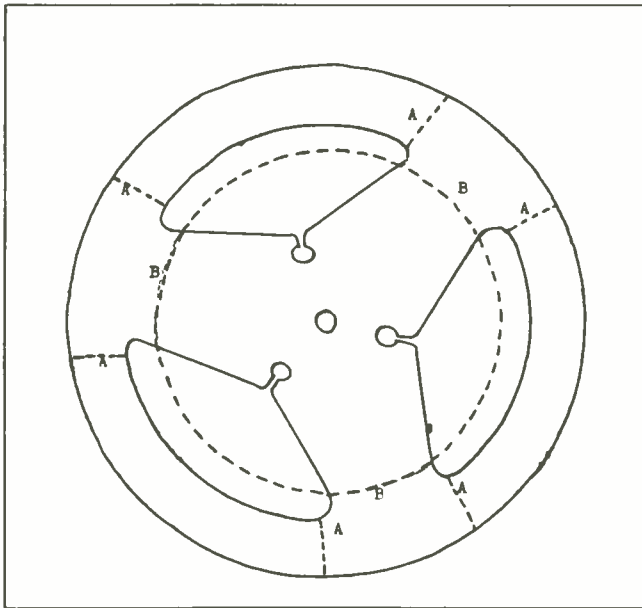
Rimless Reels

by David T. Thomson

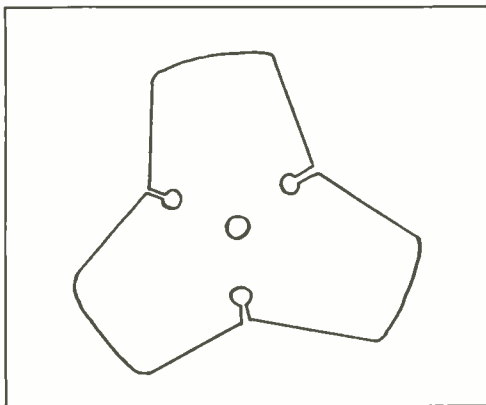
English Academy of Kyoto, Japan

... make your own easy-threading reels.

FROM the number of newly designed reels which are appearing on the tape recorder market it would seem that the "ultimate" in easy-threading reels has yet to be found. The problem may not be so great for many who do not need to thread a large number of reels daily. However, we believe threading has proven a nuisance at one time or another, for practically anyone who has used a tape recorder and it has been especially bothersome for us since we must thread forty or fifty 3" reels every morning when copying tapes for students to take home for practice on their own machines.



Above: Preparing a 3" reel from a 5" reel. Circular dotted lines indicate 3" reel used to mark proper size. Snap off with wire cutter at places marked "A". Use hot tip of soldering iron to cut along lines marked "B". Snip off melted plastic and file smooth. Below: A finished 3" reel made from a 5" reel with three spokes.



So far none of the regularly available reels seem to have solved all of the basic problems, among which are the following three:

1. Getting your fingers in the opening between the rim and the slot where the end of the tape is threaded (this is a special nuisance with small 3" reels);
2. After threading, turning the reel a couple of times to hold the tape firm without bending your wrist through many awkward positions and without having the tape end slip out before completing this operation (perhaps the new Audiotape C-slot reel has solved this problem, but not the next);
3. Passing the tape end between the rims with one hand, catching it with the other, and then threading it (Soundcraft has a reel which might seem to answer this problem since instead of passing the end between the rims, there is a long slit the length of the spoke, but this reel is troublesome because the tape catches on the edges of the narrow slit near the rim).

Even should all of these problems (and any more you can think of) be solved by a manufacturer and even should newly designed reels be available, many places, such as this Academy, could not afford to discard the hundreds of reels now in constant use and replace them by better designed ones.

In order to solve the problems outlined above the following solution was tried and has worked out successfully. Also, the solution is applicable to practically any reel you might now be using as we have tried it out with many different models of reels.

The answer we found is a simple one. By cutting out a segment of the rim, so as to leave one part of the reel entirely open down to the hub and therefore giving easy access to the slot where you thread the tape, troublesome threading has been completely eliminated. Without the slightest difficulty the end of the tape can be slipped into the slot provided and the hand is entirely unencumbered by a rim which previously always seemed to get in the way. Of course, it is no longer necessary to slip the end through the parallel rims first. Finally, if you do not have a C-slot reel, it is a simple matter after slipping the tape end into the ordinary slot at the hub to give the reel one or two turns to hold the end fast to the take-up reel.

At first it was thought that with part of the rim cut away some trouble might arise either in winding a full reel or in keeping the tape on the reel. But this did not prove to be the case. The absence of a segment of the rim has not affected the winding nor the security of the tape on the reel. Even when several or all of the segments of the rim have been cut out, leaving only the spokes intact, there has been no adverse affect. In fact, for some purposes it is useful to cut out the entire rim.

Cutting away the complete rim makes it very convenient

for anyone who uses a tape recorder for studying a foreign language. Since this is the main purpose of the recorders at this Academy, the absence of any rim has been very beneficial. The reason is as follows: when a student is playing a tape on a machine often he wishes to backtrack the tape one or two sentences to re-hear something he didn't quite catch. With the rimmed reels it is a little difficult to do this and also it sometimes results in breaking the tape. With the rim cut out, so that only the spokes remain, the student can easily backtrack the tape while the switch is still on "play" position (it is very inconvenient to have to keep switching during this kind of work). All he needs do is press the automatic stop button and with his other hand back up the feed reel by pressing against one of the spokes. The reel backtracks easily and as it does he hears the recorded material (in reverse, of course) and with very little experience he soon learns just how much to back the tape to re-hear the portion he wants to. Actually, we use a footstop, thus leaving one hand constantly free for this operation and the other free to turn the pages of a text.

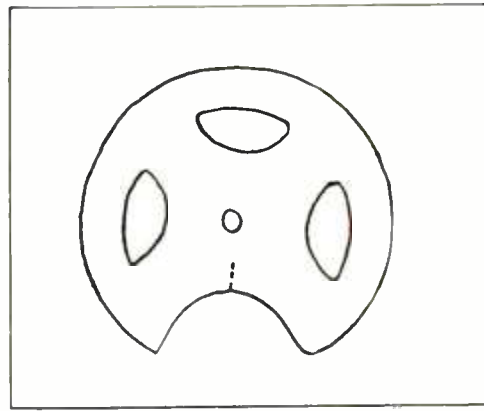
Just how are these easy-to-thread reels made? This is the best part of it, for they can be made from almost any standard reel. You need only take a pair of electrician's wire clippers and snip off a segment (or segments, if you prefer) of the rim, and then file off the place where you cut. If you have any trouble snipping (that is, if the reel breaks where you don't want it to) then try passing the tip of a hot soldering iron across the place where you want the break to be (be sure the iron is good and hot). The plastic won't burn and none of the reels tried this way gives off any bad odors.

In case you have a batch of 5" or 7" reels on hand which you do not need (we use only 3" reels), and want to make 3" reels, this method of adapting reels is very useful. To make a 5" reel out of a 7" reel or a 3" reel out of either a 5" or 7" reel you need only do the following:

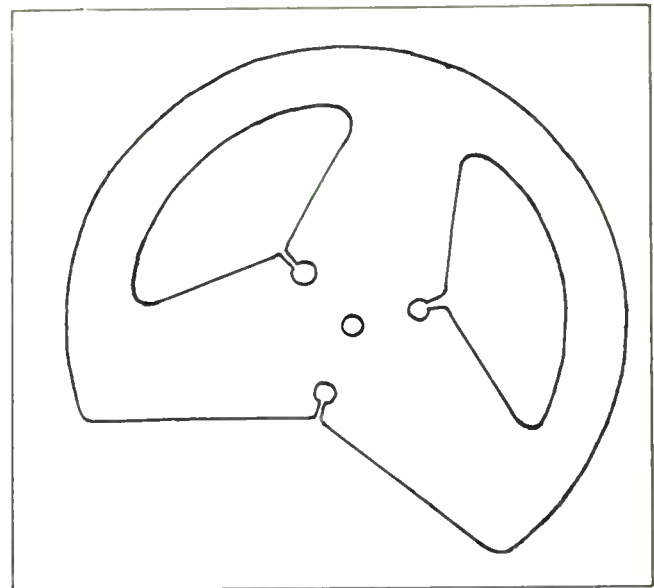
1. Lay on top of the reel being prepared a conventional rimmed reel of the size you want the new reel to be (be this a 5" or 3" reel) and mark with a red pencil just outside the rim of the conventional reel onto the larger reel. Be sure to mark both sides of the reel you are preparing;
2. Snip off all the rim;
3. Pass the tip of a hot soldering iron along the red lines marked on the spokes of the reel you are preparing. It is best to pass the iron a fraction of an inch outside the red line;
4. Finally, file down the outer edges of the spokes and you have a new reel which for many purposes is superior to the old one.

The reason for using the soldering iron to cut the spokes is that if you try this with wire cutters you are as apt as not to break the spoke off clear up to the hub where you thread the tape. But if you ever should break off a spoke close to the hub, don't throw it away. You can still use a reel even if it has only two spokes left. After using the soldering iron (and you will probably have to pass it over the red line a couple of times) there will be some plastic left sticking to the outer edge of the spokes which melted there when you used the iron. This plastic can easily be cut off with a pair of short nose wire clippers.

One final benefit of the rimless reel is that it makes it very easy to anchor the end of your tape when the reel is not in use. You need only slip the end of the tape under



Above: A 3" reel with one segment cut out for easy threading.
Below: A 5" reel with one segment of the rim cut out for easier threading.



one of these spokes and it is held nice and firm. Then you can put the tape in its box or lay it on a table and there won't be a lot of loose ends dangling from your reels which have to be rewound by hand before putting the reels on the machine or in their boxes.

The method indicated for preparing easy-to-thread reels is also especially suitable for small reels used for sending tape letters. Always be sure when you cut out a segment of the rim that you do so on both sides of the reel or, otherwise, after playing the reel through and turning it over to play the second track you will face the same problem as you always have when using conventional reels—namely, the rim will still be awaiting you on the other side to get in the way of your fingers.

It would be a mistake to pretend that the rimless reel as explained above is the ultimate or perfect easy threading reel. But it does serve certain purposes, such as indicated above, and if the idea should be developed it might lead to something even more perfect. We have found it particularly useful for the small 3" reels, whereas we haven't given it a fair try with larger sized reels. Therefore, we suggest that anyone interested in trying out the adaption given in this article first do so with only one or two reels. Then if he finds it suits him he can try it with other reels.



How to Make Aluminum Mailing Boxes

by Earl R. Savage

. . . inexpensive, convenient, and simple to construct.

Do you know the actual drudgery of wrapping, sealing and addressing reels for mailing? Do you know the anger and disgust of receiving a damaged or broken reel from the postman? If you answered yes to these questions, this

article is written for you. You will find information here to enable you to eliminate the drudgery and anger leaving only the pleasure of receiving the tapes. The mailing boxes, contrasted above with the conventional wrapping, are convenient, light, sturdy, inexpensive—and they are easily made!

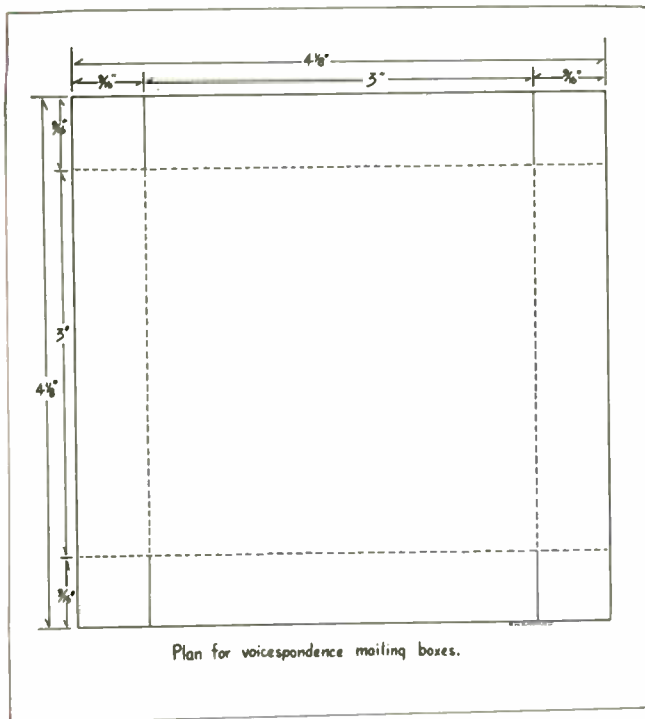
They are convenient since it is only necessary to reverse the top and affix a new stamp in order to remail your tape. Being made of aluminum, they are light and sturdy. Occasionally one will arrive with a slightly bent side, but this can be made like new by the judicious application of a pair of pliers. In a year of using these boxes, the writer has never had a reel of tape damaged—even after trips across the Pacific they are unscathed.

These boxes can be made in a few minutes and no special skill is required. The cost per box is approximately six cents and the materials are readily available. They include the following:

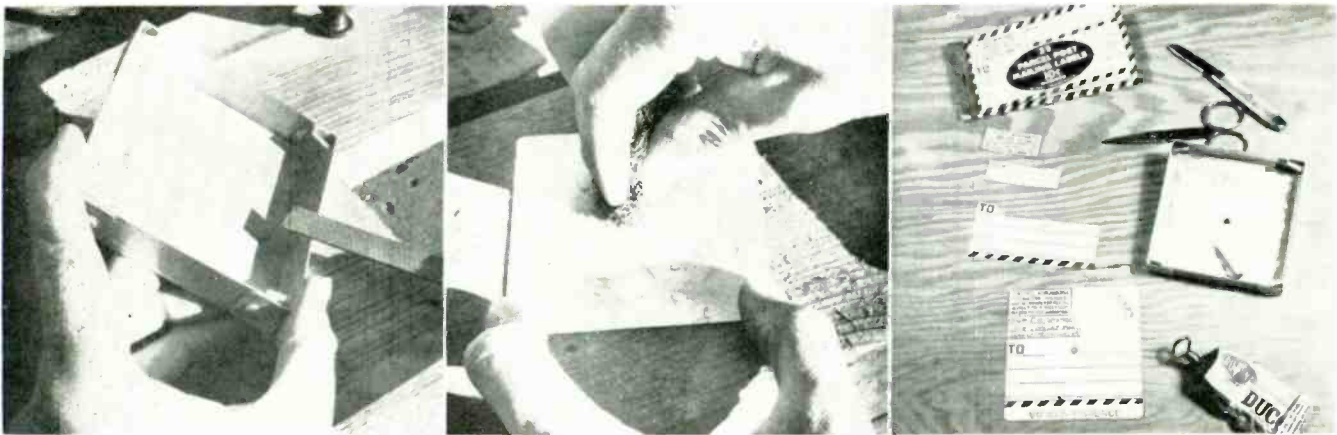
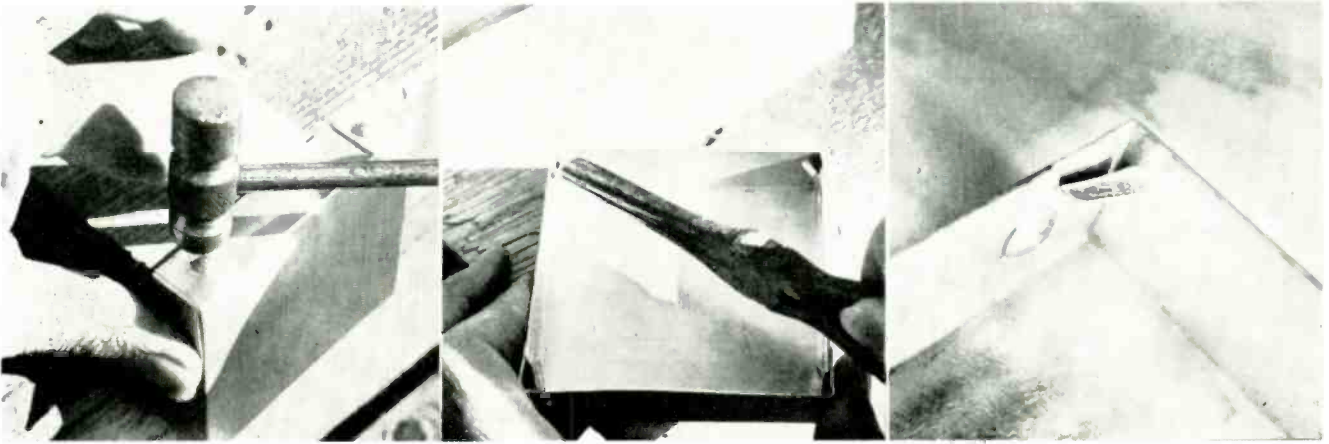
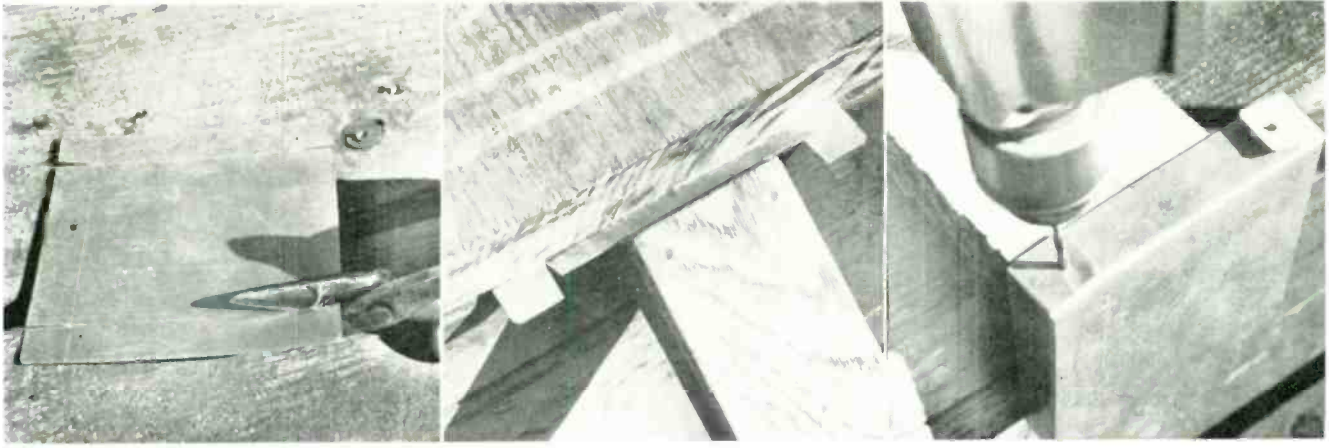
1. Sheet aluminum— $4\frac{1}{8}$ " X $7\frac{1}{8}$ " per box. Reynolds Do-It-Yourself or similar.
2. Aluminum rivets—four per box.
3. Brass paper fasteners—one per box.
4. Glue and heavy paper—to make the top a suitable addressing surface.

The simple tools can be found in most homes. They include: hammer, pliers, small tin snips or kitchen scissors, drill (hand or electric variety, but you "can" use a nail to punch holes in the aluminum), and a small file.

Just gather the materials and tools and you are ready to begin. Follow the illustrated directions and you will find out how much more pleasant taping can be.



This plan should be transferred to the aluminum before cutting is begun. The dashed lines indicate bends—NOT cuts.



Top, left: After the square is cut out, the four short cuts are made for the corners. Do NOT cut out the top yet. Top, center: All bends should be made as shown here—the aluminum is sandwiched between two pieces of wood. If this is not done, the bend will not be smooth and even. Top, right: The flaps are bent around the corners and rivet holes are drilled or punched. Middle, left: The rivet head (inside the box) is backed by a piece of wood. When the bottom has been formed, the top is cut out to fit "inside" the box. Middle, center: The corner stops are made by bending down about $\frac{1}{8}$ " of the sides where they are covered by the flaps. Middle, right: These four corner stops may be omitted but they do have some value in securing the top and protecting the reel. Bottom, left: Now holes are drilled or punched in the center of top and bottom to accommodate the brass fastener. Every edge and corner should now be filed smooth for safety. Bottom, center: Steel wool may be used to give the box a more pleasing appearance. Of course, aluminum with an embossed design may be used in place of plain sheets. Bottom, right: Both sides of the top are roughened by scratching with a nail and heavy paper is glued to each side and trimmed to the proper size. Parcel Post labels may be used as shown or the information may be inked on each side. Final safety measures for your tapes are first, to scratch or engrave your name and address in the bottom of the box and, second, to put Scotch or masking tape over the ends of the fastener after passing it through the top, reel and bottom. From now on all you and your tapespondents have to do is reverse the top, affix a new stamp, and drop it in the mail. What could be simpler?

STEREO SECTION

NEW TAPES

By Georgie Sigsbee

CLASSICAL SYMPHONY

BERLIOZ

Symphonie Fantastique
Cento Soli Orchestra of Paris
Louis Fourestier, Conductor
OMEGATAPE ST-3013
43.5 mins. . . . \$14.95

Unfortunately, no program notes accompanied this pre-release tape to identify the "Cento Soli Orchestra of Paris," so we can only say that they play well and turn in a satisfactory performance. However, program notes will be provided with this release per word received from Omega's head man, Dave Hubert. Louis Fourestier is, of course, already renowned and is no stranger to collectors of recorded music. However, the reading here, in spite of its big, brilliant, open sound, leaves quite a bit to be desired. Fourestier sets a pleasing pace, quite a bit faster than Munch in his version; however, while the Munch reading brings out each instrumental voice clearly, the inner-voices and subtleties are lost in the Fourestier recordings. Whether they are not played or simply not caught by the engineers I cannot tell, but at any rate they are not heard. The melody and bass are played loudly, but little else.

In the review copy there also appeared three measures from the early part of the second movement (on the right-hand channel only) to break the pause between the first and second movements. It is difficult to understand how the engineers could let so obvious a defect as this creep into the duplicating process.—J. L.

TCHAIKOVSKY

Symphony No. 6 in B Minor ("Pathétique")
New York Philharmonic

Dimitri Mitropoulos, Conductor
COLUMBIA LMB 19
40 mins. . . . \$15.95

My reaction to this reading is that Mitropoulos takes this symphony, particularly the first movement, at a very fast clip without transmitting any deep feeling of aching sorrow. The second movement is done very well, full and rich, though I would have liked the middle section a bit slower. The marchlike third gets a gold star . . . excitingly performed with all the brilliant orchestral colors effectively brought to the listener. During the fourth movement, more than in the first, Mitropoulos tends to build up some emotional feeling, ending on a sombre, dark note.

As to the fidelity it is well done . . . the third movement is a beautiful example of the clarity of the instrumental work. At times the keen reality of this recording is almost too intimate. During the first and final movements (at least eight places in each) you can hear things being moved or perhaps a bow striking a music stand, etc. And before the development section in the first movement, the squeaking of a chair (?). Usually these moments come, of course, in the more quiet parts. In other words, you are right there IN the orchestra . . . but seemingly only at these moments. However, all in all, this is a good recording and there will be those who find the Mitropoulos interpretation much to their liking.

TCHAIKOVSKY

Symphony No. 6 in B Minor (Pathétique)
Sinfonia of London
Muir Mathieson, Conductor
LIVINGSTON 4002K
44½ mins. . . . \$11.95

Briefly, I am not satisfied with this recording. The lyrical passages lack depth of

expression, while the dramatic ones, though vibrantly emphasized, do not carry the impact I have derived from several single-channel recordings. There are rough spots in the first movement where conductor and orchestra do not seem to work together smoothly. Mathieson handles the climaxes as though breathing fire and brimstone and at moments whips the orchestra into an almost frantic frenzy.

There are too many top recordings of this lovely symphony . . . and for me this is not one of them.

There is audible hiss on my copy.

TCHAIKOVSKY

Symphony No. 5, in E Minor
Mannheim National Symphony
Herbert Albert, Conductor
LIVINGSTON 4001 K
49 mins. . . . \$11.95

By some historical coincidence, "Symphony No. 5" has become the most played opus, whether composed by Beethoven, Shostakovich, or the arch-Romanticist, Tchaikovsky. The latter is richly served by this stereo sound from one of Europe's most significant but least known musical centers—Mannheim, on the Rhine near Frankfurt. Dating from a small court ensemble in 1593, the modern symphony orchestra grew under discerning royal patrons, to the point where even Haydn, Mozart and Beethoven took lessons in composition from the Mannheimers. The permanent conductor, Herbert Albert (not to be confused with Rudolf Albert who performs under Omega label) has capable forces today to display the sonorities and driving episodes of Tchaikovsky.

The superiority of tape over discs is illustrated by several unique features of this performance: 1. note the uninterrupted length of 49 minutes, which no one-sided

disc offers with equal fidelity, 2. the dynamic range from such deceptively soft passages to thundering climaxes which would bound a phonograph stylus right out of the groove, 3. the fidelity which is equal to the best stereo equipment that may play it for you. Unfortunately on our copy there was audible hiss. I played this many times—no breakage. There is considerable hiss on this copy though. (No Livingston tape has ever broken!)

CONCERTO

TCHAIKOVSKY

Concerto No. 1 in B-Flat Minor, Op. 23

For Piano and Orchestra

Leonard Pennario, Piano

Erich Leinsdorf Conducting

Los Angeles Philharmonic Orchestra

CAPITOL ZF-40

31:5 mins. . . . \$14.95

A fine traditional rendition showing Pennario and Leinsdorf in thorough command of the many technical difficulties of this concerto. It is very comparable to the Gilels-Reiner version (RCA ECS-8 reviewed Oct. 1956) particularly in the first movement. After this, Mr. Leinsdorf leads a considerably more brisk pace which accounts for this tape being 2.5 mins. shorter than RCA's.

Here the most remarkable feature is the more distant miking given the solo piano which affords a more pleasing balance with the orchestra; Gilels' piano sounds massive . . . possibly the way it does sound from the podium, but not the way it sounds to us in our favorite seat in the concert hall. Pennario's technique is crisp and clean; every note of his runs can be clearly heard. The recorded sound is just a bit more brilliant than RCA's. I have a slight preference for this recording, but certainly no one would be unhappy with either one. The album notes are excellent.—J. L.

ORCHESTRAL

BRITTEN

Young Person's Guide to the Orchestra

DOHNANYI

Variations On A Nursery Tune

Concert Arts Symphony Orchestra

Felix Slatkin, Conductor

Victor Aller, Piano

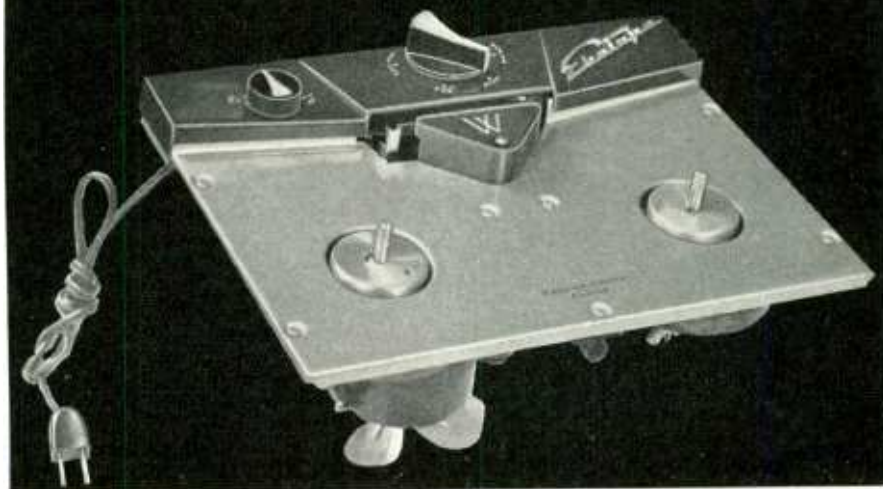
CAPITOL ZF-23

41 mins. . . \$14.95

Benjamin Britten composed this score in 1945 to illustrate the various instruments and groups that make up the modern symphony orchestra. But more than simple demonstrating, Britten introduces the various members by way of a musical composition particularly well-suited for this purpose. . . "Variations and Fugue On A Theme of Purcell." The result constitutes not only a rewarding educational experience, but very pleasant listening as well. In this tape the fine stereophonic recording brings out each instrument clearly and in perfect balance. Although sometimes performed with a spoken commentary, Capitol has wisely omitted it here and has thoughtfully supplied album notes, furnishing all the necessary information, and avoiding the distraction of a narrator.

STEREO

... now a practical reality



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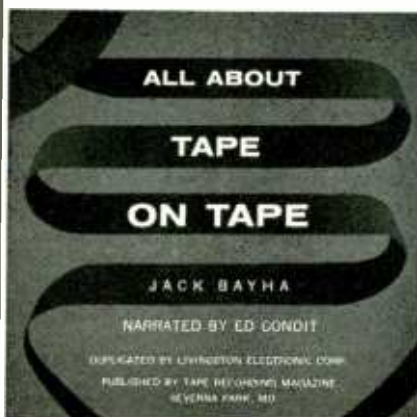
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The Dohnanyi Variations On A Nursery Tune are a charming set of variations on the familiar "Twinkle, Twinkle, Little Star" written for Orchestra and Piano Concertante. This is worthwhile music, not profound, but entertaining and illustrative of what grandiose treatment can be accorded a simple melody. In this treatment Dohnanyi's subtle mimicry of the style of several famous composers can be recognized.

Victor Aller and the Concert Arts Orchestra acquit themselves well. Their playing is straightforward and concise and the recording is up to Capitol's usual high standard.—J. L.

STRAUSS, Johann, Jr.

Die Fledermaus (Selections)
 Overture
 Gulcklich ist, wer vergisst Polka Mazurka
 Fledermaus Polka
 Tik-Tak Schnell-Polka
 An der Moldau Polka Francaise
 Du and Du Waltzes
 Boston Pops Orchestra
 Arthur Fiedler, Conductor
 RCA CCS-91
 24:35 mins . . . \$10.95

Delightful and charming. Both relaxing and invigorating for either listening or dancing, these assorted pieces from "Die Fledermaus" make a most pleasant musical repast.

Executed with good spirit and recorded with high standards of quality.

PROKOFIEF

Lieutenant Kije, Op. 60
 Chicago Symphony Orchestra
 Fritz Reiner, Conductor
 RCA BCS-96
 20 mins . . . \$8.95

This suite was contrived from music which Prokofief composed for a Russian motion picture titled "Lieutenant Kije" back in 1933. The five sections of this composition tell the brief story of this fictitious Russian officer; his birth, romance, wedding, troika, and his burial.

Reiner conducts the satirical, humorous music with neat dispatch, his touch being more precise than light. The orchestra gambols about occasionally and whips spiritedly through the troika. It is the colorful stereo instrumentation . . . the percussion, brass, etc., which will delight the ear. There is a slight pre-echo before several of the numbers, but otherwise the recording is clean and bright.

CHORAL

ORATORIO

G. F. Handel

Excerpts from the Messiah, Volume II
 Why Do the Nations
 Pastoral Symphony
 There Were Shepherds Abiding
 Glory to God in the Highest
 Rejoice Greatly, O Daughter
 Behold, I Tell You a Mystery
 The Trumpet Shall Sound
 Worthy Is the Lamb
 Amen
 Adele Addison, soprano

Donald Gramm, bass
 Lorna Sydney, contralto
 David Lloyd, tenor
 Chorus of the Handel and Haydn Society of
 Boston and the Zimble Sinfonietta
 BOSTON BO 10 F
 29:30 mins . . . \$11.95

In July 1957 we reviewed Volume I of these excerpts taken from the 1955 recording session made under the auspices of Unicorn Records. Volume II makes a fine companion piece to the first release . . . and is heartily recommended both for exceptional quality of content, performance and reproduction.

STARLIGHT CHORALE

(Famous Choruses From the Opera)
 BIZET: March and Chorus from CARMEN
 WAGNER: Pilgrims' Chorus from TANNHAUSER
 VERDI: Anvil Chorus from IL TROVATORE
 WAGNER: Wedding Chorus from LOHENGRIN
 GOUNOD: Waltz and Chorus from FAUST
 PUCCINI: Humming Chorus from MADAME BUTTERFLY
 GOUNOD: Soldiers' Chorus from FAUST
 VERDI: Triumphal Chorus from AIDA
 Hollywood Bowl Symphony Orchestra
 Roger Wagner Chorale
 Roger Wagner, Conductor
 CAPITOL ZF-39
 35 mins . . . \$14.95

I can imagine no happier union than this of one of our most celebrated singing groups and one of our richest-sounding symphonic orchestras. The picture is completed by the tasteful selection of famous choruses from opera. I am one opera lover who can see no sin in taking some of the delightful music and enjoying it for its own sheer "per-se" musical value.

On the contrary, I think it would be shameful to leave glorious melodies like these always buried under the weight of operatic presentation!

I can find not a single flaw in this performance. Capitol engineers have captured it with masterful recorded sound. The album notes have thoughtfully located each selection in its proper perspective to the plot of its particular opera. You should hear it!—J. L.

A MIGHTY FORTRESS

A Mighty Fortress
 Fairest Lord Jesus
 Prayer of Thanksgiving
 All People That On Earth Do Dwell
 All Creatures of Our God and King
 The Robert Shaw Chorale
 Robert Shaw, Conductor
 Thomas Dunn, Organist
 RCA ACS-107
 14:55 mins . . . \$6.95

If it is beauty and peace you seek, this grand recording of wonderful hymns should give it to you.

Faultless in all respects.

ALL THROUGH THE NIGHT

Autumn Leaves
 If I Had My Way

The Inch Worm
 Dear Hearts and Gentle People
 Anywhere I Wander
 Tennessee Waltz
 Greensleeves
 Funiculi Funicula
 Drink To Me Only With Thine Eyes
 Comin' Thro' the Rye
 All Through the Night
 Fred Waring and the Pennsylvanians
 CAPITOL ZC-44
 34:20 mins... \$11.95

This highly skilled choral group raises its voices in familiar songs and the net result is bound to please. A pianist, a rhythm section, and in one number a full orchestra lend some color, but fortunately do not gild the lily. Waring has given fresh arrangements to many of these selections and the last part of "Comin' Thro' the Rye" almost sounds like a show tune.

There is some slight sibilation on my copy, particularly noticeable during "Anywhere I Wander" but otherwise this is an above average stereo recording... well produced and performed.

LIGHT CONCERT

MUSIC OF LEROY ANDERSON

Sleigh Ride
 Forgotten Dreams
 Serenata
 Penny-Whistle Song
 Sandpaper Ballet
 Bugler's Holiday

Frederick Fennell, Conductor
 Eastman-Rochester "Pops" Orchestra
 MERCURY MV55-30
 16:30 mins... \$7.95

For both young and old alike. These charming pieces with their humor, subtle sound effects, and charming melodies are what I term a sure-fire family hit.

If this were a disc it would soon be worn out! We derive as much enjoyment and fun listening to these Anderson compositions as I am sure the men had in performing them. The fidelity is excellent.

POPULAR

WILD ABOUT HARRY

Kinda Like the Blues
 Blues For Lovers Only
 Countin'
 Cotton Pickin'
 Barn 12
 What Am I Here For
 Blues For Harry's Sake
 Bee Gee
 Blues On A Count

Harry James and His Orchestra
 CAPITOL ZC-29
 33 mins... \$11.95

A most refreshing collection of new and thoroughly danceable tunes done in the traditional big-band style but with modern orchestration. There is a distinct feel of Count Basie in several of the tunes which can be traced to Ernie Wilkins, one of the arrangers who has also been associated for some time with "The Count." The album notes are nicely detailed and done by Harry James himself, which is a big help in getting the most out of each number. The very excellent drumming of Buddy Poor and the tight

rhythm work of the group are particularly impressive. The recording is just wonderful! —J. L.

BE MINE TONIGHT

Pan, Amore, y Cha Cha Cha
 Take It Easy
 Too Marvelous For Words
 Nightingale
 Whatever Lola Wants
 Babalu

ABBE LANE
 With Tito Puente and His Orchestra
 RCA APS-93
 18 mins... \$6.95

Abbe Lane (who in private life is Mrs. Xavier Cugat) offers renditions of these selections which are about as exciting as one could wish. Tito Puente and his Orchestra supply the Latin beat, and RCA's intimate miking bring Miss Lane dangerously close. —J. L.

"PREZ"

Lullaby of Birdland
 Machaca
 Leo's Special
 Cu-Cu-Rru-Cu-Cu Paloma
 Fireworks

Perez Prado and His Orchestra
 RCA APS-105
 17 mins... \$6.95

The "King of the Mambo" reveals here that he is equally at home as an interpreter of Latin rhythms or as a jazz impresario of the first order. Exceptional clarity of recording and ideal stereophonic balance make the numbers even more exciting.—J. L.

BARBER'S HOLIDAY

Keep America Singing
 On the Boardwalk in Atlantic City
 Mood Indigo
 Susie Brown
 Beautiful Isle of Make Believe
 Mister Moon
 De Animals A-Comin'
 Coney Island Baby

The For-Tune Hunters
 LIVINGSTONETTE 2010 C
 15 mins... \$6.95

This barbershop quartet composed of Alfred Flitz, Charles Giess, Charles McKinney, and Stanley Fleagle sing forth in rather a solid, straightforward manner. They seem to loosen up from "Susie Brown" on, and by the time they hit the last two numbers they seem more relaxed. I don't know how "Mood Indigo" slipped into barbershop repertoire.

I am happy to see that *Livingston* is now packaging its Livingstonette series in boxes in lieu of the plastic containers. This album cover by Dan Piel is a clever one.

Recorded sound is OK.

A BREATH OF FRENCH AIR

La Mer
 Rien qu'une chanson
 Coin de rue
 Vous qui passez sans me voir
 Ame des poetes
 Boum
 Quand vous entendrez
 Mamselle



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 ANNOUNCEMENT

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 eye-bones focused

It's the greatest
 man—way out
 —reel cool.

Menilmontant
Vous etes jolie
Bonsoir
Jolie madame

Roger Lecussant and His Orchestra

OMEGATAPE ST-7030
28 mins....\$11.95

Lecussant plays the compositions of Charles Trenet and does so with smooth finesse. The selections are played with imagination and Parisienne flair.

The thirty-year-old Lecussant plays the piano with skill. You will hear vibes, flute, accordion, and guitar adding spots of color to the orchestral arrangements. The numbers vary from the smooth "Coin de rue" to the jazz beat of "Boum" and the mambo beat of "Quand vous entendrez."

The fidelity is tops.

THE ROARING 20's

Mary Lou
Clap Hands! Here Comes Charlie
A Cup of Coffee, A Sandwich, and You
That Old Gang of Mine
Sunny Side Up
Last Night On the Back Porch
Sonny Boy
Diga Diga Doo
Everybody Loves My Baby
Somebody Loves Me

Enoch Light and the Charleston City All Stars
GRAND AWARD Volume I

24:30 mins....\$9.95

A relatively new label in the stereo tape field, *Grand Award* comes to you on full length 7" reels (1200') for stacked heads, list price \$9.95 per reel. They offer pop albums ranging from polka, honky tonk and society dance to the memory bits such as this. Their artists include Enoch Light, Charles Magnante, Paul Whiteman, Rod Gregory, etc.

This particular tape brings you tunes of the rip-roaring 20's arranged with a feel for authenticity and instrumental showmanship. All numbers, except for "Diga Doo," are enlivened with vocal work. The male division gets the spotlight more often, both in groups and solo shots with the gals giving out on two numbers.

A most enjoyable recording with clear, widespread sound.

SOCIETY DANCE PARTY

Rosalie, Easy to Love
Lady Is a Tramp, You're the Cream in My Coffee
I Won't Dance
Bewitched, Love Walked In
So In Love, I've Got You Under My Skin
Orchids in the Moonlight
Carioca, If This Isn't Love
June Is Bustin' Out All Over, Flying Down to Rio
Smoke Gets in Your Eyes, There's a Small Hotel
All the Things You Are

Rod Gregory and His Society Dance Orchestra

GRAND AWARD
29 mins....\$9.95

Playing 17 tunes in the same quick-rhythmed tempo throughout, Rod Gregory's

smooth, polished band shows the touch of an experienced hand. His music is the kind you hear in smart supper clubs and hotel dance spots. There seems little flexibility or contrast except those provided by the piano, accordion, guitar and alto sax. Particularly well done are "Orchids in the Moonlight" and "Carioca."

There is a slight pre-echo before some of the numbers. The overall sound is spread and somewhat reverberant, yet the individual instrumentation is warm and close. Good bass reproduction . . . a good high fidelity recording.

WE COULD HAVE DANCED ALL NIGHT

Let's Fly Away

Medley: Cornsilk: I Get a Kick Out of You,
The One I Love Belongs to Somebody Else, Yours Sincerely, Alexander's Ragtime Band

The Petite Waltz

I Know That You Know

When Day Is Done

The Girl Friend

Griff Williams and His Society Orchestra

MERCURY MVS2-24

18 mins....\$7.95

More of the Griff Williams society dance orchestra (MDS2-7, March '58). A foot-tapping fox-trot beat is applied to these standard tunes. The orchestra manages to keep a sedate exterior while instrumentally doing some interior decorating. Listen to "Alexander's Ragtime Band" as an example. With a string section reminiscent of Wayne King and with brass and keyboard styled a la Lombardo, this orchestra has maintained its popularity for many years.

Recorded at Universal Recording Studios in Chicago, the sound is very good.

SOUTH PACIFIC

Nothing Like a Dame

Some Enchanted Evening

Bali Ha'i

A Wonderful Guy

Younger Than Springtime

This Nearly Was Mine

New World Theatre Orch., and Hollywood

Sound Stage Chorus

BEL CANTO STB-36

22 mins....\$9.95

Bel Canto presents a mixed chorus which does a good job of singing these six. The orchestra's soft, sweeping strings provide an almost Mantovani-like background. In fact, the string section is 'way in the background while the steady beat of guitar and bass seems too much up front, noticeably so in "A Wonderful Guy" and "This Nearly Was Mine." In "Bali Ha'i" and "Wonderful Guy" the engineers use a full echo effect on the girl singer, while this does not seem to be the case when the male soloist steps up to sing. Nonetheless this recording is easy to listen to and will supply an agreeable interlude.

MUSIC MAN

76 Trombones

Goodnight My Someone

Lida Rose

Till There Was You

Marian, the Librarian

New World Theatre Orch., and Hollywood

Sound Stage Chorus with vocal and solos

BEL CANTO STC-37

18 mins....\$7.95

We have on hand a pre-release copy of Bel Canto's offering of tunes from Meredith Willson's current Broadway show. A happy surprise it is, too, to find that this tape is not just lush instrumental background music. Here is a rather spunky recording with chorus, soloists and full orchestra; all accorded broad, reverberant sound.

The spirited "76 Trombones" is followed by the lovely lullaby melody, "Goodnight, My Someone," (same theme as "76 Trombones") with female solo assisted by chorus. "Till There Was You" is presented in the same smooth style. The fellows take over in "Marian." The voices are refreshingly young and the recording very pleasant.

RALPH FLANAGAN IN HI-FI

Hot Toddy

Street of Dreams

Joshua

Giannina Mia

Where or When

Penthouse Serenade

I'll Be With You in Apple Blossom Time

Rag Mop

RCA BPS-83

20 mins....\$8.95

Colorful reeds and bright brass start this recording off with Flanagan's original "Hot Toddy." The men go uptempo on "Joshua" and "Rag Mop" and seem to have fun adding their voices to the musical arrangements. All of the other selections are done in a style similar to Glenn Miller . . . so if you liked the latter (and who didn't) you'll like this recording. Good for dancing or listening.

Beautifully engineered.

MISCELLANEOUS

DUELIN' DEMON DRUMS

Featuring Richard Campbell and Harry H.

Coon on drums

CONCERTAPES 5124

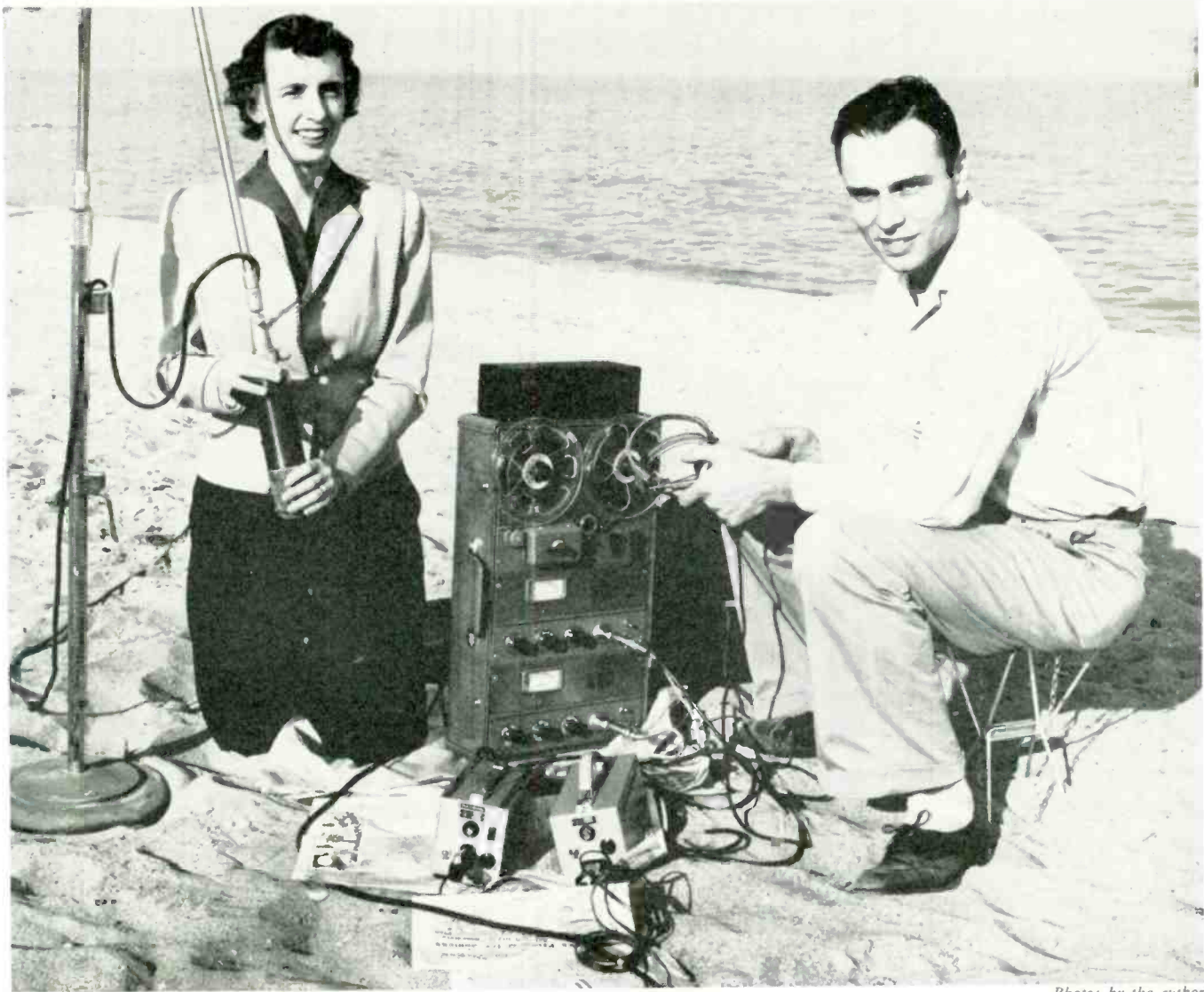
14:30 mins....\$7.95

These two drummers really give quite a percussive display in this recording. Campbell toured South America and Africa where he studied the authentic native rhythms heard on this tape. Working closely with Jim Cunningham, recording engineer, these two artists have produced an unusual tape, not without its satire and expanded percussive effects.

In the first portion titled "Tangangika" you'll hear such "works" as "Masai Rumble," "Tumbatu Tintintambula," and "Sumbawanga Rattatto." What titles! In the latter the snare-drums, rattles, cymbal-crashes and other percussion sounds should "send" the hi-fi "fiend." The second portion is devoted to some drumming based on an authentic Indian chant.

This is a fascinating, different, sort of recording. Naturally it is a showpiece for the stereo outfit but let us not overlook that these drummers are talented and prove their artistry in a humorous, keen way.

Engineering-wise, it's hats off to Cunningham. A job well done!



Photos by the author

James and Darleen Bornemann lugged some 380 pounds of recording equipment almost a mile to reach the best spot for a stereo recording of an ICBM blast-off. They set up shop on a stretch of beach in a nonrestricted area about four and one-half miles from the launching site.

Missile Roars on Stereo Tape

by James and Darleen Bornemann

... making the recording was troublesome, but to these two enthusiasts it was worth it.

IN three years of stereophonic tape recording, we have discovered the most awesome sound conceivable. It was picked up some four miles from an Atlas launching pad at Cape Canaveral, Florida. What follows is a narrative of the first stereo recording of an ICBM blast-off.

It was over a year ago while watching TV about the Gasparilla Day Festival in Tampa, Florida, that Darleen and I decided to try taking a Florida adventure in stereo sound. We also wanted sounds from the Everglade, Bok Singing Tower, the Parrott Jungle, and possibly a rocket from Cape Canaveral.

A list of all the necessary recording equipment and supplies needed for eating and sleeping for two weeks in our station wagon told us we would have to use all of our available space. A tubular and sheet metal rack over our bed held necessary luggage and mike stands. For our AC power, we

had to mount another 12 volt battery under the hood of the car to obtain 24 volts for the dynamotor which supplied us 110 volts, 400 watts at 60 cycles. The two batteries hooked in series for the dynamotor would only last two hours or so. We would keep the batteries hooked in parallel while driving so our car generator would recharge them. The dynamotor has a frequency meter for accurate 60 cycle power necessary for hysteresis motor drive tape recorders. Not having enough room to take our Stereo Ampex 350, we had to buy a portable 601-2 Ampex. With several hundred feet of cables for our two U-47 Telefunken mikes crammed into all available niches, added to our cooking and sleeping equipment and 100 pounds of canned goods, our car really groaned.

We arrived in Tampa on February 10, 1958, Gasparilla Day, the noisiest celebration one could possibly record with

bands playing, cannons shooting and thousands screaming. We also recorded a zoo and bird farm while in Tampa.

Our next stop was the Bok Singing Tower near Lake Wales. Luckily it was Lincoln's birthday with a special concert. It was a pleasure to record out in this isolated spot.

Our interest in the Florida Symphony Orchestra took us to Orlando. We enjoyed a Gala Concert too beautiful to describe. The next day we met the orchestra's manager whose sincere hospitality showed us one of the reasons why this orchestra has such zealous supporters. They seem to do miracles for financially backing their orchestra. Telling him of our desire to record a missile, he called a friend at the Cape who would try to get us in. After meeting several of the officers at the air base, they explained that a government bus is the only transportation allowed for outside individuals such as the press, TV, etc. It takes everyone to a building which is 8700 feet from the launching pad. We would have had to load all of our equipment on this bus. The reporters and camera men set up their cameras on the building's roof to get the firing of the missile. The officers and reporters who we talked to all agreed that at this building the sound is earth shaking. We wisely decided that our microphones could not reproduce this tremendous sound. The closest nonrestricted area is about four and one half miles from the launching site and about one and one half miles from the nearest road. Darleen and I found that this road runs perpendicular to the ocean and stops on a bluff above the beach. After seeing several cars stuck in the sand and finding out that the towing fee is \$25, we realized that we would have to carry all of our equipment on foot. From the beach we could view through our field glasses the missile towering in its gantry being readied to be fired the next day, Saturday, February 15th. Viewing the missile for the first time was an awesome experience. When we saw that huge Atlas towering 70 feet into the sky, we realized that this was not like anything we had ever imagined. We were so excited that we could scarcely eat our supper. Camping at Cocoa Beach that night, trying to get to sleep was even more troublesome for we both tossed and turned with fantastic dreams of this huge missile streaking along the beach chasing after us. This seemed an endless night. Wearily we saw the dawn of an exciting day. But

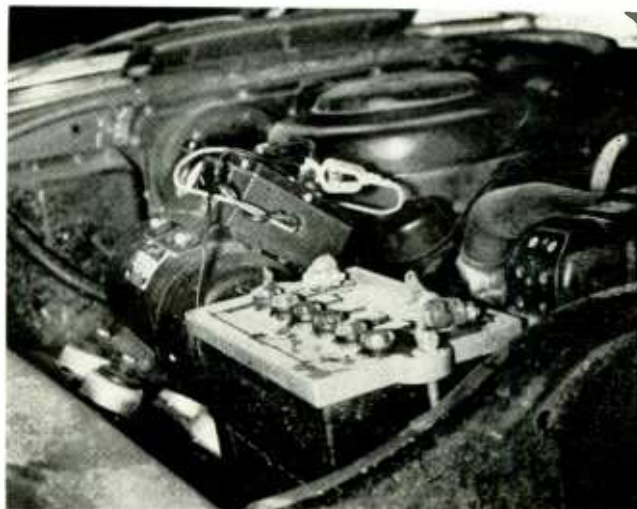
it started to rain and all we could do was sit and hope. Now we wondered if they would still launch the missile. For many hours we just sat and waited until the weather cleared. Gradually the missile came into view now standing unsupported against the gray sky. Our excitement really zoomed for we could see the white vapors streaming from the nose cone which meant the missile could be fired within two hours. Hurriedly we began unloading our equipment. Four helpful spectators volunteered to carry some of it. The poor souls didn't realize how far along the beach we intended to go. The 65 pound generator in one hand and a 50 pound battery in the other made me sink into the sand above my shoes, but I was determined to make it.

We set up our equipment about a mile from the car and started recording on the tape. The missile was located on a large triangular shaped land area jutting out into the ocean. From where we stood, the missile was about 30 degrees over to our right when facing the firing area. We figured it was about to blast off any minute now for vapors had been visible for over two hours. "The Beast," as it is called, was now shiny white with frost from the liquid oxygen. All of a sudden, the moment arrived which we had been waiting for, when the vapors stopped trailing from the top. It was only seconds before the blast-off. A ball of steam mushroomed from the base of the missile where water was cooling the firing pad from the heat of the rocket engines. But the steam disappeared and it took our dreams along with it, for there stood our two million dollar monster cold and dead and silent. We learned many hours later that due to technical difficulties, the engines had to be turned off at the last second. Sadly we started to pack up. We took down our microphones which were on stands 12 feet high. Our cooperative spectators had mysteriously disappeared and left us alone with the task of carrying all of our equipment back to our car. We had a total of 380 some pounds to move for almost a mile. This took about two and one half hours and when we finally collapsed on our sandy mattress in the back of our station wagon, it was another two hours before we painfully moved.

Figuring that they would not try again on Sunday, we drove to St. Augustine, an interesting historical city, but found nothing to record there. Monday, on our way back



Every available niche in the authors' station wagon was crammed full. Together with their Ampex recorder, they took along several hundred feet of cables, two Telefunken mikes and stands, cooking and sleeping equipment and 100 pounds of canned goods.



For AC power, another 12-volt battery was mounted under the hood of the car to obtain 24 volts for the dynamotor which supplied 110 volts, 400 watts at 60 cycles. The two batteries were hooked in parallel while driving so the car generator would recharge them.



Left: James Bornemann adjusts one of the Telefunken mikes. Right: Handkerchiefs were tied over the microphones to cut down wind noise. The Telefunken's were spaced about 18 feet apart, parallel with the ocean, and back about 50 feet from the water.

to Cape Canaveral, we recorded the Nascar Time Trials at Daytona Beach. Checking back in Canaveral, we found they were still working on the Atlas so we drove down to Miami and then on down to the Everglade National Park. Because of the unseasonably cold weather, finding wildlife to record was difficult. We figured our missile should be ready for firing Thursday or Friday, so Wednesday night we returned to our "Cape Canaveral Restless Sleeping Grounds." We knew that Thursday would be our last chance to get our recording before we would have to start for home.

How could we get farther up the beach with our car so that we wouldn't have to carry everything on foot without getting stuck in the sand? My stomach seemed to be bothered more with these problems than my brain. We considered buying long wide wooden planks to shuffle along with the car but this would have been slow and tedious and necessitate backing up a mile and a half to return. The next morning we decided to examine the beach more carefully. The bluff above the beach was packed with dense underbrush but we found the surface to be harder. To our surprise, there were some old tire tracks leading into the brush. I felt that if our speed was great enough, we could crash our way through the brambles for at least a mile and a half. So with throttle practically on the floor, we bashed our way through this obstacle course. We spun our car around some bushes and got back on to our own tracks where we could park.

After beating a path through the brush to the beach with our mikes and stands and recorder, we started our setup operation. We left our generator and batteries in the car and ran the cable about 150 feet to the equipment on the beach. Our Telefunken's were spaced about 18 feet apart, parallel with the ocean and back about 50 feet from the water. We tied handkerchiefs over the microphones to cut down wind noise. Once our tape equipment was running, I put on my stereophonic earphones and, to my horror,

one channel was dead. Reversing the earphone plugs, one earphone had also failed. Checking further, I discovered one Telefunken was not working. The threaded cable connector was the culprit. Sand lodged in the threads prevented it from turning and no connection was being made. Even vise-grip pliers failed to move the nut. To add to our frustration, we knew only minutes remained to fix the nut. It seemed so hopeless. After all this work and preparation to make this one recording, we could lose it in the last few seconds.

In wild desperation, I disassembled the pivoting yoke which allows the microphone to tip, put the slot in the yoke around the metal legs of my folding stool and with the vise-grip pliers gave a hardy twist. A crunching sound made me realize that I was twisting the five small prongs in their sockets rather than the nut locked on the threads. I figured that the plastic parts on the inside had broken and that our recording would be lost and our \$400 mike seriously damaged. A final check on the dead channel made me jump for joy. Somehow, in breaking the plastic parts, the prongs made contact and our mike was working as good as new. After hurriedly replacing the mike on its stand, and starting the tape running, I grabbed my folding stool and with my binoculars ran over to the water's edge. Before I could even sit down, I saw the huge cloud of steam engulf the missile. I raced back to the input controls on the recorder, trying to watch the sound level meters and the missile too. For about 15 seconds the missile is held down to build up its maximum thrust. The "Monster" with a long firey tongue began slowly climbing into the sky. Now our meter pointers were climbing with the sound. The thundering roar shook the very earth, and our volume controls were almost down to zero while the pointers were nearly in the danger area.

I had to laugh when I noticed my wife running around in circles, her hands clasped over her ears trying to shut out the terrifying noise. She reminded me of an ostrich trying to find a place in the sand to bury her head, for it seemed the missile was heading right for us. Within seconds it faded from sight.

Though the recording time was less than three minutes from the first clouds of steam until the missile disappeared out over the ocean, Darleen and I both agreed that this experience was worth all of our efforts and we then danced with joy on the beach of Cape Canaveral.

NEW PRODUCT REPORT



TANDBERG STEREO

... three speed recorder with stereo playback and automatic shutoff. Amplifiers built in recorder case.

If the old adage "Good goods come in small packages" is true then the Tandberg Model 3 Recorder with stereo playback certainly qualifies.

The unit measures 15 x 11 $\frac{3}{8}$ x 6 $\frac{5}{8}$ inches in size and weighs only 24 pounds. It draws only 75 watts, which makes it practical for operation from power packs and inverters.

Because it is a European machine (Norway) and because the voltages on the continent vary so widely, it will use any of 6 different voltages from 110 to 245 AC simply by adjusting the tap on the power transformer. For 50 cycle operation, only a pulley change is needed.

It has three speeds, 1 $\frac{7}{8}$, 3 $\frac{3}{4}$ and 7 $\frac{1}{2}$ inches per second which may be changed while the recorder is running.

On the left of the case is a small lever which controls the bass response. Putting this in bass position boosts the low notes by at least 12 db. Our tests revealed this to be accurate.

One of the most unusual features on the recorder is the speaker monitor switch located at the top of the case be-

tween the reels. This switch controls the small speaker in the set, which is stated in the instruction book to be designed for a limited range of tones only. It goes on to state, "musical programs of especially high quality should be reproduced through a larger hi-fi loud-speaker, or the speaker of a good radio." This is true of most recorders.

The monitor switch will connect the upper track to the speaker, the lower track or no track at all. This arrangement permits using the speaker as a third speaker for stereo play if desired or for playing non-standard tapes recorded on continental recorders which record on the bottom track and cause consternation on standard U. S. machines. The Tandberg records on the top track, as do other recorders.

The recorder also has an automatic shutoff device which is actuated by a metallic strip placed near the end of the tape. When this makes contact with the post and its contact on the right side of the recorder, the tape motion is automatically stopped. This works in either fast forward or rewind as well as in play.

S T A **F** O K S T E D

Product: Tandberg Stereo Model 3

*Distributor: Tandberg
10 E. 52nd Street, New York,
N. Y.*

*Price: Recorder \$369.50, with
two speakers \$469.95*

The stereo head is in-line with a .0025 inch gap. In addition to stereo tapes, the recorder will also play back half track and full track tapes. Crosstalk between the two halves of the head is better than 60 db.

The recorder may also be used as a public address unit and the amplifier has a frequency response of 30 to 20,000 cps, plus or minus 2 db. Our tests found this figure to be correct.

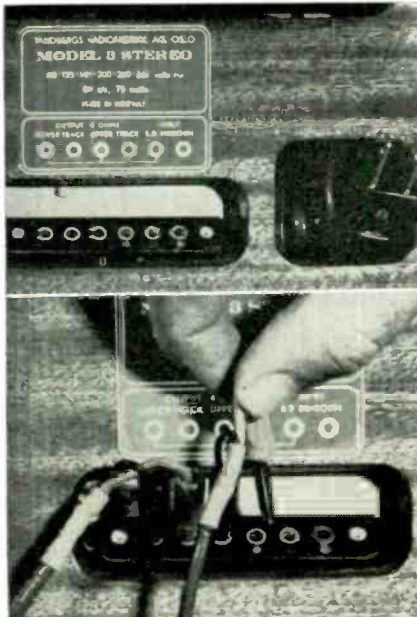
Because the two stereo amplifiers are contained in the case of the recorder and are controlled from the same volume control it is necessary that they be balanced. The specifications claim less than 2 db difference. The tests showed this to be the case. Because of the amount of feedback used, tube wear will not affect the balance of the speakers.

The terminal block for connections to and from the recorder is on the back of the machine and cords with alligator clips are furnished. Terminals are for the speakers or earphones or for a connection to a radio, phono or TV set. The mike plugs in on the deck and it is possible to mix sound coming into the mike with that coming in from a radio or TV.

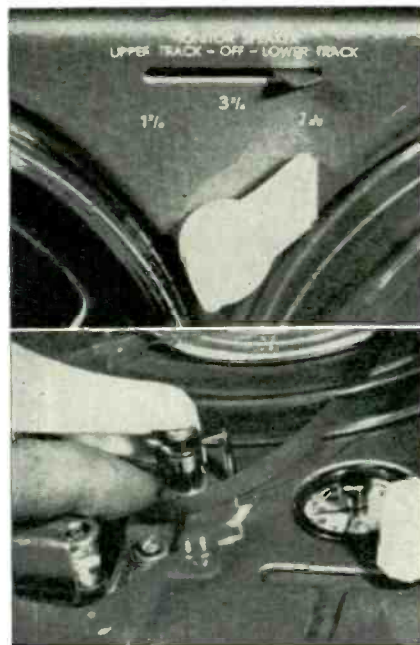
The output power is 3 watts on each amplifier for stereo. The amplifiers may be worked together for monaural play-



The recorder is housed in a tan carrying case. The entire top is removable for operating the recorder. Sponge rubber pads hold the reels in place when lid is closed.



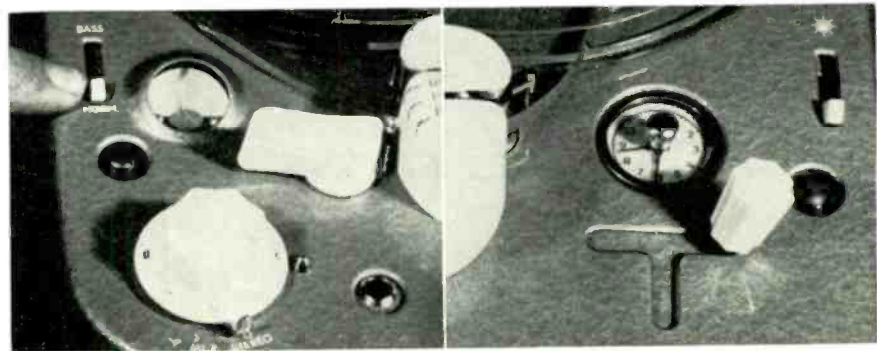
Upper: the jack panel on the rear of the recorder. At the right can be seen the well into which the line cord packs when not in use. Jacks are plainly labeled. Lower: plugs inserted into proper jacks for playing stereo.



Top: Speed control lever sets speeds, either 1 7/8 inches per second, 3 3/4 or 7 1/2. Small lever at top controls monitor speaker which may play either track. Lower: If metallized strip is placed on end of tape this automatic shutoff will stop the recorder when the metal spot passes over the post and its contact.



The recorder will operate on a number of different voltages from 110 to 245. Adjustment is made on the rear of the recorder.



Left: the left-hand side of the recorder showing the mike input jack, volume control knob, function lever, magic eye level meter, tone control lever and the stereo/monaural switch. Right: right-hand side showing counter, forward, rewind and play/record levers and the on-off switch.

back in which case 6 watts output can be obtained. This may seem small compared to some of the power amplifiers of 50 watts now on the market but when turned on full, the Tandberg can drive you out of the room with volume.

The speakers measure approximately 14 x 22 x 10 inches and are beautifully finished, as is the recorder. They are small enough to fit into a bookcase and light enough to be transported, if desired.

A note in the Tandberg instruction book, which is very complete, is of interest to all stereo owners. It concerns the proper phasing of stereo speakers.

If the two loudspeakers were connected to one pair of terminals it would be possible for the diaphragm of one to be moving in one direction while that of the other moves in the opposite direction. If the speakers are placed close together this will be especially detrimental to the bass notes, which will be reduced in volume. Therefore, when hooking up for stereo be sure the polarity of the speakers is right. To do this, hook up the two speakers so that they are playing from the same track, place them close together and note if the bass is bad. If so, reverse the polarity of one and the bass notes will be properly reproduced.

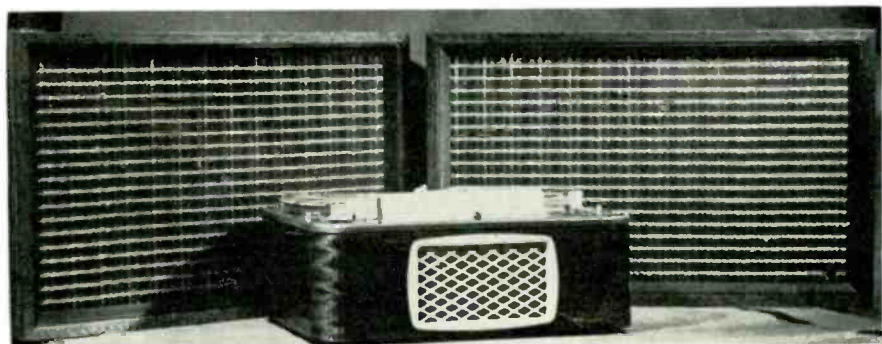
The frequency response of the recorder at all three speeds was satisfactory and, at the 7 1/2 ips speed it qualified for AAA program requirements. Tests were made with the bass boost in position which brought the 30 cycle bottom within limits.

Unlike most recorders, the carrying case is separate from the recorder itself and may be removed completely from it when the machine is used in the home. Sponge rubber pads in the lid of the case press on the reels to hold them in place when the recorder is carried about.

For monaural playback, the small lever found beneath the volume control knob is placed in monaural position. For stereo play, it is placed in the stereo position.

Record level control is by means of a magic eye which is shock mounted. Recording is done by placing the record lever in record position and pulling down the tape motion lever. This provides a positive interlock to prevent accidental erasure.

Our tests revealed this to be a machine of high quality, well built and capable of giving satisfactory service. It is externally attractive and the electronics are very good. It merits your consideration.



The complete stereo outfit including two matched speakers in beautifully finished wood cases. The speaker cases measure about one by two feet by 10 inches and can be carried in a car quite easily along with the recorder for setting up in a friend's home or other location.

SHOP OR SWAP

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

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

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

ANY 1200' TAPE DUPLICATED—One or both tracks, monaural or stereo. \$5.00 per reel post-paid if check accompanies order. Send master and instructions to W. A. Yoder Company, 714 N. Cleveland Street, Richmond, Virginia.

LEARN WHILE ASLEEP with your recorder. Amazing 100-page book gives full instructions. \$2.00. Satisfaction guaranteed. Sleep-Learning Research Association, Box 24-TR, Olympia, Washington.

PHONOGRAPH RECORDS PRIOR 1940 wanted. Also records, dubs, tapes of voices of people of interest, from newsreels, movie shorts, air, radio, past or present, all types, also army-navy transcription shows; movie trailers. Jacob S. Schneider, 109 W. 83, N.Y.C.

JOIN TEEN TAPE CLUB. Free! Hear T.N.T. Paradise of Sound, c/o Sonny, 2413 Penn. Ave., N.W., Washington 7, D.C.

V-M 711 STEREO, EXCELLENT condition. Play both stacked and staggered stereo tapes. Record and playback monaurally in high-fidelity, only \$149. Also, Eico Model HF12, 12-watt integrated high-fidelity amplifier. (Factory-wired), \$29.95. Also excellent condition. Chester Sample, 2505 Saratoga Ave., Cleveland 9, Ohio.

TOP QUALITY TAPE-MYLAR 1/2 mil 2400' \$2.99, 6/\$2.89. 1800' 1 mil acetate \$1.89, 6/\$1.84, 12/\$1.79. Acetate 1200' 1 1/2 mil \$1.39, 6/\$1.36, 12/\$1.29. All boxed 7". Guaranteed. Postage add 20¢ per reel. Catalogue. Recording Service, P.O. Box 231t, Wallingford, Conn.

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

SEMI-PROFESSIONAL TAPE DUPLICATING. Quantity discounts. Prices and available services write: Merle Enterprises, Box 145, Lombard, Illinois.

DISPOSING: Berlant Preamp, heads; Astatic, E-V, RCA mikes, Bell T-200 recorder; details, wants: Fritz Tonne, 4465 N. 149, Brookfield, Wis.

HI-FI TAPE RECORDING, music lover desires to exchange or sell audio equipment, stereo tapes, etc. . . . with same. Jean Simard, 28 Ave. Vieux Moulin, Giffard, Quebec 5, P.Q., Canada.

MINIFON-Pocket size, wire recorder, like new. Complete, excellent for secret recording and detective work, with all deluxe accessories. Crystal microphone, sretoset ear phones, 1/2 hour and 2 1/2 hours recording wire, plus wrist watch microphone. AC power supply, auto 6-12 volt, connecting cord, two leather carrying cases. Operates either battery, AC 110 or 220 volts or auto—6 or 12 volt. Cost over \$410. First \$200 gets this bargain. Morris Maynor, Jr., P.O. Box 368, Atlanta, Texas.

TO BUY OR TRADE — Am looking for record-playback preamp for Berlant tape machine. Want to convert 2nd channel to record-playback stereo. Give details. Dr. O. Lee Ricker, 406 Loraine Bldg., Grand Rapids, Mich.

TAPE RECORDER AND HI-FI systems and components tested and repaired. (Nuttall's) High Fidelity Laboratory, 5511 Sussex Street, Shreveport, La.

TAPESPONDENTS WANTED—Hypnotism; Philosophy; Abnormal Psychology; pro or con the feminism theory; Intellectuals — invited to swap tapes with E. S. Faith, 20584 Eastwood Road, Cleveland 26, Ohio.

BARGAINS FOR SALE: Hammond Model "J" Solovox, Zenith oceanic short wave, Chapelvox transcription system 16", 33 and 78 speed Jensen auditorium 13", 3" VC speaker. Need Ampex 600 or Berlant recorder. D'Artridge Organ System Co., 2631 Menlo Avenue, Los Angeles 7, California.

We specialize in **TRADE-INS** — highest allowances — Ampex, Bell, Concertone, Crown, Ferrograph, Presto, Tandberg, Hi-Fi components, accessories. Catalog.

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TAPE RECORDERS

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CARSTON 215-C E. 88 ST.
NEW YORK 28, N. Y.

ROBERTS MODEL 90 tape recorder. New Worth \$299.50. First remittance for \$189.50 buys it. Melvin Gollub, RD 1, Norristown, Penna.

FOR SALE: VIKING D-596 tape recorder carrying case. Original cost \$24.50, will sell \$12.50. Inquire George Polhemus, 431 Conshohocken State Road, Cynwyd, Pa.

DO YOU HAVE—Good tape recording of Timex Jazz TV program of April 30, 1958. Please contact Dr. O. Lee Ricker, 406 Loraine Bldg., Grand Rapids, Mich.

TAPE RECORDERS FOR SALE—Tandberg model 2 De-Jur TMB-820, both like new. Crestwood 404 Hi-Fi and matching 402 amplifier and speaker assembly, 18 months old—no marks or scratches. Make an offer. Going stereo. McAdoo Bruington, Box 48, Lewisburg, Tennessee.

LOS ANGELES, CALIFORNIA, MAGNEMITE Owner: I'd like to rent a 15 ips or 7 1/2 ips recorder for two days. If you don't care to rent your equipment, I'll pay you to do the recording during your spare time. Jim Jones, DUNKIRK 5-1224.

STEREO TAPE RENTALS. For the very best at lowest prices, write: California Taped Music Assn., 1971 Cordilleras Road, Redwood City, California.

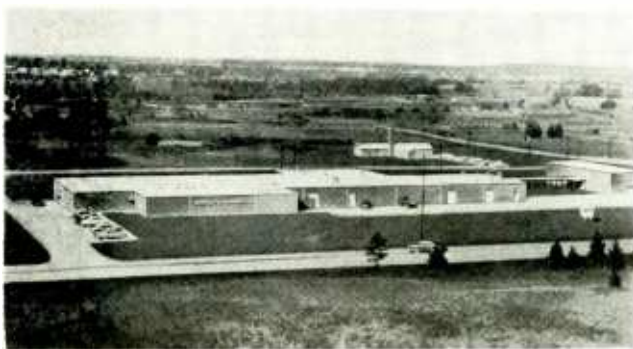
NEWS BRIEFS

New Orradio Plant

WITH CBS newscaster Douglas Edwards as master of ceremonies, Orradio Industries, makers of Irish tape opened their new half-million dollar plant at Opelika, Alabama.

Situated on the site of a former prisoner-of-war camp outside the city of Opelika, the plant is completely controlled as to dust, humidity and temperature. The workrooms, for instance, have a slightly higher air pressure than outside so that dust cannot blow in.

Opening day featured addresses by local celebrities as well as by Senator Sparkman and founder J. Herbert Orr. Local folks swelled the opening day crowd to about 500 persons



who were taken on conducted tours of the plant from the ball mills, where the oxide is ground to the packing room where the reels were put in their boxes. No visitors were permitted in the actual workrooms as they would have brought in dust with them but they could observe the various processes, except coating, through the windows.

The oxide is mixed with the plastic coating and solvents in a separate building and is piped into the coating room to avoid the risk of fire or explosion. After coating, the tape, about 18 inches in width, passes through a long drying oven and into the slitting room where it is cut to the desired widths, from the standard 1/4 inch tape used on regular recorders to the 2 inch wide video tape.

The ceremonies were video taped on the machine in the plant and then played back through monitor sets in the lobby immediately following the dedication.

Pentron Bows Stereo Recorder

Pentron Corporation will have a recorder capable of both recording and playing back stereo by late summer, it was learned today. The machine will be known as the Emperor II, model NL-4. It will sell for about \$325 with two mikes and will include two 10 watt amplifiers in the case. External speakers must be used with it although the speakers built in the recorder may be used for ordinary play or monitoring purposes.

FOR YOUR AUDIO BOOKSHELF



YOUR TAPE RECORDER

by Robert and Mary Marshall

This is the first book for nonprofessional users and includes the photographs and specifications of 55 recorders as a guide to selecting the proper machine for various uses. The book does not deal with technicalities. It was written after some 2500 experiments had been conducted, using recorders in the fields of education, camps, meetings, business and the home. Part of the book is devoted to an explanation of hi-fi principles and terminology.

5 3/8" x 8", cloth bound, 288 pp. Illustrated.
\$4.95

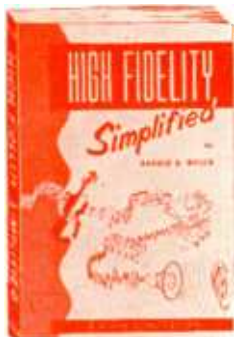


HIGH FIDELITY HOME MUSIC SYSTEMS

by William R. Wellman

The book describes the functions of each unit of a home music system, giving advice on the good and bad features of various kinds of units. Chapters include: An Introduction to High Fidelity, Loudspeakers, Loudspeaker Enclosures, Record Players, Radio Tuners, Tape Recorders, Amplifiers, etc. Also included are plans for installing a home music system.

6" x 9", cloth bound
192 pp. Illustrated.
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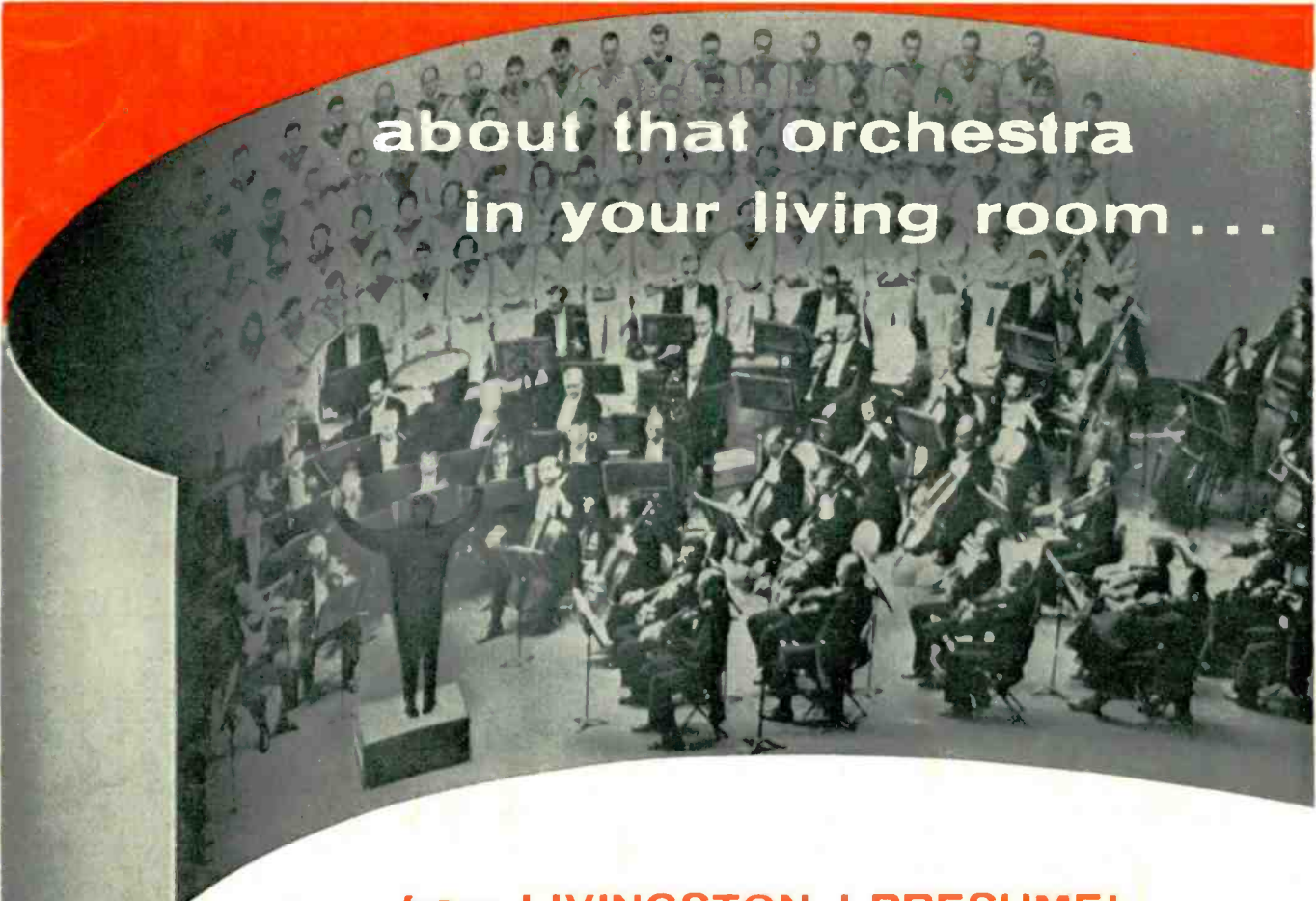
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