

HI-FI

SOUND IN THE ROUND-ROBERT OAKES JORDAN

#### SPECIAL ISSUE: STEREO 3-D SOUND

COMPLETE STEREO EQUIPMENT DIRECTORY

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19MGIIV Mr. Sydney G. Brooks

TAPE RECORDING

COMPLETE STEREO TAPE CATALOG

December, 1956



ww.americanradiohistor



#### **Robert Oakes Jordan**

In the article reproduced here, just as it appeared in the May 16 issue of "Down Beat", Mr. Robert Oakes Jordan reports his completely unbiased and impartial findings on the vitally important subject of tape quality. A leading authority in the highfidelity field, and tape recording in particular, his comments are of interest to all users of tape recording equipment, professional and amateur alike.



#### By Robert Oakes Jordan

IT LOOKS AS though 1956 will be a year for magnetic tape recording. Perhaps it might be wise to review the subject of tape.

Looking back over the recent history of magnetic recording and its plastic tape medium, it is easy to see the progress in both.

Factors, more often than not overlooked, which are concerned with the use and storage of tape should be known and used by every person having a tape recorder.

ing a tape recorder. During the last year, one of the long-term projects at our laboratory in Highland Park, 111., has been the independent study of magnetic recording tape. We are interested in finding out just which practises in its use must be observed and how the user can best assure the safekeeping of his recorded tapes.

SEVERAL HUNDRED reels of magnetic tape from all the tape manufacturers were studied. Not more than 5 percent of this tape was submitted by manufacturers as samples. The bulk was bought by the laboratory.



#### WINS INDEPENDENT TAPE TEST BY LEADING HI-FI AUTHORITY

... as reported in



The tape test described by Mr. Jordan emphasizes two very important facts. (1) Different brands of recording tape vary widely in output uniformity. (2) Of all the leading brands tested, standard plastic-base Audiotape rated highest in consistent, uniform quality.

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In this a nontechnical report, we will tell of those factors considered most important for the tape user. It is our opinion that output consistency is the single most important factor governing the choice of any recording tape. Output consistency means that the tape must produce the same quality of sound as it is played back, month after month, year after year.

If the manufacturer has complete control of his tape production processes, then serious variation should not occur. If there are variations in the thickness of the oxide, its composition, or its method of application to the plastic base, then there will be a variation in the performance of the tape. If the user gets too little signal in playback or too much, either is a serious tape fault.

IT IS SELDOM possible for the tape user to judge the quality of the tape he uses because faults and inconsistencies identical to tape failures may be caused by poorly adjusted or maintained tape recorders. Virtually any brand of tape will provide adequate results from the majority of nonprofessional recorders now on the market. However, if you want professional results, then reel-to-reel, batch-to-batch output consistency is innortant.

In the tests, we found some remarkable variations in marketed tapes for consumer use. Among those faults found most often are these:

• Nonuniformity of oxide coating. causing signal-level variations or "dropouts" in which little or no signal was recorded.

• Pits or pocket voids, where air bubbles or dirt have caused very small pits in the oxide coating. In some cases the ring magnetization of the rim of these pits or holes will cause playback signal variation.

• Nonuniformity of plastic base surface, in which, if the plastic base has microscopic hills or valleys in its surface, the oxide coating, though perfectly smooth at the playing surface will vary in depth along the tape. This can cause that noise-behind-the-signal, perplexing to professional recording engineers as well as amateurs.

• Uneven slitting, in which the magnetic tape is processed and coated in wide rolls and must be slit to whatever marketable width is desired. Large roller knives must be employed in the slitting process. If these knives get dull or exhibit any heat change one to another, the tension of one slit edge of the tape varies from that of its other edge. This change of edge tension over the length of a reel of tape will cause erratic travel of the tape over the recording and playback heads.

• Poor oxide adhesion to the plastic base. While this fault is becoming more and more rare, it is still a factor to consider when buying "bargain" or used bulk tape. The drawbacks to good recordings are evident in the clogging effect of the loosened oxide powder.

After the tests, we chose Audio Tape Type 51, made by Audio Devices, which through two years of tests and use, proved to be the most consistent of all the major tapes.



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### HI-FI

# TAPE RECORDING

#### VOL. 4 No. 1

DECEMBER, 1956

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### NEW TAPES

A QUESTION put to me by a dealer. "You don't have to listen to each tape all the way through, do you?" startled me into the realization that others: our readers, the companies, the dealers, might well believe this would be accepted procedure.

My thoughts fled back swiftly to the inception of TAPE RECORDING MAGAZINE three years ago when, in my estimation, the magazine courageously made the decision to be a publication devoted exclusively to those interested in the specific field of tapes and tape equipment. It took this step at a time when, for the general public, music reproduction on tape, for use in the home, was a rather intangible, elusive venture fraught with many problems yet to be overcome. The policy of TAPE RECORDING was to help this industry grow, to inform, advise, guide and suggest. So from a newborn infant, to a lusty one the tape field has now developed into an ever-growing, maturing childhood with all the evidence of becoming a strong, adult industry.

Now that the magazine has also reached the age of puberty, I feel it is only litting to congratulate it, the companies, the readers, the dealers, and all who have helped make the tape field what it is today, and who will, in the future, make it an even bigger, better industry.

Now, although I have deviated a bit, the question put to me took me back to when, along with the magazine, the review column

> Here are a few of the out-standing additions to our Stereophonic Catalogue in various categories:

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POP

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

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started. At first there were not too many tapes to review, and so the column devoted its talents and strength to fighting the cause of improvement; from the first issue suggesting a catchy, selling name to replace 'pre-recorded tape," to ideas for better packaging, labeling, annotations, introductions of new companies, etc. All this before the

larger companies entered the field. As time progressed and demand grew, so the tape reviews did likewise. The companies, from the beginning, cooperated fully by sending release lists, price information, review copies, etc., to help the column. So much for background.

Reviewing for our readers has always entailed listening to each and every tape, in toto, as it is received; then re-listening before final writeup. This does not include the many times a tape may be played for others for reaction, for pleasure, etc., before publication date. Unless one is directly involved, it is hard to conceive the time consumed listening, relistening, spot checking, double-checking on two separate systems where there is flaw of any sort, writing and re-writing and more recently, culling from library to compare tape against tape. For example this month in conjunction with nine of the reviews, eighteen tapes were actually "reviewed." In lieu of going back to past reviews and judging the present against the past, a complete re-reviewing of past tape against present one is performed. Some might brand this thorough approach as somewhat ludicrous, but it is all done in an effort to bring to the reader a complete. honest picture of each tape. A rather small example would be that in reviewing a tape we would not say it has on one track orchestra and on the other accordion accompaniment only, when actually the orchestra appears on both tracks.

A reviewer doesn't just listen to tapes and write reviews; he maintains contact and correspondence with tape companies, readers, the editor, etc. He also gives service to the reader. In three years we have had, to my knowledge, but one letter wherein the reader felt the review was contrary to what he heard. Immediately upon receipt of this information, the editor informed the tape company, the reviewer held a musical symposium with professionals attending, and found that the teview was accurate. We even compared the latest LP release against the tape. We have not, as yet ascertained whether it is the equipment the owner possesses, or a faulty tape.

A reader expressed the hope that Charles' successor would be as honest and, in this respect, we feel that both readers and companies benefit from the truth, whether the review is good or bad. This latter might sound ambiguous but if a company receives a bad review, they immediately take steps to check and correct the trouble, as they are dedicated to giving us all the ultimate in sound reproduction.

Going back over the three years of reviewing (and I am prejudiced) I feel Tape Recording had a reviewer with a well-tounded knowledge of all types of music . . . it is important that if a reveiwer should prefer

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Imported and Guaranteed by INTERSEARCH 7 Arcadia, Cincinnati, Ohio one particular class of music, that he practice empathy . . , for instance, to those who like Stephen Foster his music is not considered "schmaltz," I guess when you get right down to it, not only a knowledge of music and recordings is necessary but a "Do Unto Others" attitude and just plain humanity

By the way, the answer to the question was a definitive, "Yes!" We listen and relisten to each and every tape,

#### CLASSICAL

ORCHESTRAL

RORODIN Polovetsian Dances MUSSORKGSKY: Night on Bald Mountain CUL Tarantella BALAKIREV: Tamar Bamberg Symphony Jonel Perlea, Conductor PHONOTAPES-SONORE PM 145 71/2, Dual: ...\$8.95 334, Dual: .. \$6.95

Four of "The Five" (sometimes referred to as "the mighty handful") are represented on this tape, Balakierv, who was mentor, teacher and the inspiration for this group of men (which included Rimsky-Korsakov) was the only professional musician. This group created and promoted native Russian music which this recording ably demonstrates.

Borodin, the chemist, died before finishing "Prince Igor" from which come the well-known Polovetsian Dances. This excerpt, containing melodic tunes of the Central Asian people, is played with a vivacious

flair typical of the excellent interpretation Perlea accords the music of Central and Eastern Europe.

The fantasy, "Night on Bald Mountain" depicting the legendary Witches' Sabbath was written by Mussorkgsky, an Imperial Guard, and after his death was revised by Rimsky-Korsakov. From the sounds of subterranean din and wild festivities, to the tolling of the far-off bell and daybreak, you will enjoy both the dynamic quality of this familiar music and the fine fidelity. Toward the finale (during clarinet solo) there is a slight hiss, but this is nothing to distract one from owning the tape.

The Florence May Festival Orchestra (Audiosphere 703) containing the same two pieces with Gui conducting, has a quiet surface, fine interpretation but sounds somewhat muddy and bassy in comparison to the Perlea reading. For a clear, lucid rendition, reaching sheer brilliance, the latter is by far the better

The Cui composition is a light, lively little dance occupying not quite four minutes. of pleasant listening time.

Those who hear "Tamar" for the first time will find portions reminiscent of Rimsky-Korsakov's "Scheherazade." Balakirev actually worked two decades composing this work but took too long to release it and so many feel the cart came before the horse, in this case, "Tamar" embodies all the feeling, sounds and impact of native Russian music which Balakirev helped bring to the attention of the world,

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\*Prices slightly higher West and Southwest





this breathtaking Christmas music is a *must* on your Holiday shopping list. *The First Christmas in Carols* is the Haydn Society's beautifully sung arrangement of the carols in sequence.

Tunes from Germany, England and France are sung in faultless English by the Societas Musica Choir of Copenhagen under Jorgen Ernst Hansen. "Outstanding Christmas music of any year," says the New York Times.

As captured on high fidelity, dual-track tape by Berkshire, this music conveys with clarity and ease the spirit and the meaning of Christmas. A gem for your music-on-tape library to be treasured throughout the year.

#### THE FIRST CHRISTMAS in CAROLS

an	exciting	Christma	s release
		in record	
			\$7.95 \$5.95

Available now at your record dealers and hi-fi audio centers, or write us for the name of your nearest dealer.

#### BERKSHIRE RECORDING CORP. 150 West 90th Street, New York 24, N. Y.

could own a diversified selection of short representative pieces of various composers of Central and Eastern Europe, finely portrayed by Perlea. These three tapes are highly recommended for "in between" snacks.

The clarity of instruments and the brilliant effect produced by the Bamberg Symphony make this a true high fidelity experience.

#### BRAHMS

Violin Concerto in D, Op. 77

Jascha Heifetz, Violin Fritz Reiner, Chicago Symphony Orchestra RCA ECS 4

71/2, Stereo, inline . \$14.95

Typical Brahmsian in its blending of warm moods and romantic essenses, this violin concerto, the only one Brahms wrote, is beautifully performed by the team of Reiner and Heifetz. Brahms worked on this difficult composition wirh Joseph Joachim the great violin virtuoso, who greatly influenced the scoring of violin passages. Inspired while at Pörtschach-am-See, near the Italian frontier, this concerto embodies all the beauty Brahms found in this lovely, scenic spot.

In the solo work Mr. Heifetz shows his technical facility and finesse. He furnishes the solo cadenza, as do many artists when playing it. During the third movement. which has a Hungarian folk flavor, Mr. Heifetz executes the intricate double and triple stopping and arpeggios with complete dispatch and is rendered fine orchestral assistance.

The relationship berween soloist and orchestra is well-balanced (the soloist is not as close-in as, say, in the LP with Milstein) and all in all this is a rewarding experience, aurally, emotionally and reproductively. The usual excellent RCA engineering job resulting in life-like sound.

#### **SYMPHONY**

BERLIOZ

Symphonie Fantastique Charles Munch, Boston Symphony RCA GCS

Stereo, Inline ...\$18.95

Composed in 1830 during a period of unrequited passion, Berlioz has pictured a young musician who poisons himself with opium and sinks into a deep sleep wherein he has strange visions. In this "nightmare" state he visualizes the woman he loves by a musical theme, the "ldee lixe" and this is woven throughout the symphony in varying moods. The symphony is in five distinct parts: 1. Reveries, Passions; 2. A Ball; 3. Scenes in the Country; 4. March to the Gallows, and 5. Dream of the Witches' Sabbath.

The entite symphony is well executed. Mr. Munch and the otchestra being in complete rapport throughout. The instruments are clear and live; the strings mellow, horns sharp and clean, and, for the ultimate in solo instrumental reproduction, 1 call your attention to the harp in the second movement and the bells in the fifth. Wbat an aural impact!

In the third movement Mr. Munch is at his best portraying the pastoral scene with lovely tonal coloring and warm feeling. The duet of two Shepherds calling their flocks (English horns answered by oboes), the sonorous cellos and resonant basses, all brought into full play, make this a movement which should satisfy all . . . musically and technically.

The extensive instrumentation and bold, vivid quality of this symphony, coupled with the widespread stereophonic sound make this a high fidelity dream. The engineering is flawless. Being prejudiced for this work, musically, I find it a pleasure to give this a top recommendation.

Interpretatively speaking. Munch does a fine job. I, personally, feel Ormandy derives more from the scoring, packing quite an emotional wallop particularly during the "March" which is more ominous and the finale which conveys the wild, sinister orgy with full feeling. However, the Boston Symphony comes through with flying colors.

#### **ORCHESTRAL-SYMPHONY**

HAYDN: Toy Symphony

MOZART: Eine Kleine Nachtmusik, K. 525 A Musical Joke, K. 322

Pro Musica Chamber Orchestra, Stuttgart Rolf Reinhardt, Conductor

PHONOTAPES-SONORE PM 148

71/2, Dual: ...\$8.95

3¾, Dual: ..\$6.95

Performed in a light, capricious mood, this bagatelle by Haydn (or as recent research indicates, by Leopold Mozart) satisties the puerile demands of the young and affords a thoroughly delightful experience to the older.

The acoustics produced by rachets, birds, trumpet, whistle, cuckoos, etc., are clear, well-defined and something to hear via high fidelity.

A well chosen companion piece is Mozart's satirical "A Musical Joke." It one desires a humorous and trivolous interlude, these two pieces should satiate. The orchestra gives an excellent rendition of the "Joke" and the instruments stand out in bold relief, blithely out of tune, off key and all! In the adagio cantabile, the solo violin rates special mention. Played with mastery and finesse, one can't help but smile during the finale to this movement where the violin plays such sour notes and both soloist and orchestra actually make one feel they are trying to "told their tents and steal quietly away."

In contrast, Mozart's popular "Eine Kleine Nachtmusik," is given a wellpolished, balanced reading by Reinhardt and the orchestra. Of the three tapes on hand containing the same piece, the London Mozart Ensemble under Vicars (Alphatape 14) gives a smaller, more intimate version, but the tape is a bit bassy. The Sorkin Symphonette (Webcor 2923-3) renders a full, clear interpretation, The Phonotape leaves nothing to be desired in any way, so it's up to you.

The entire tape rates tops for both children and adults.

#### PIANO

RACHMANINOFF IN STEREO

Rhapsody, Opus 43, On a Theme of Pagininni

Soloist: Francois D'Cote

Assisted by: String Ensemble de Paris BEL CANTO

Album #2

71/2, Stereo, Inline or staggered . \$9.95

The theme used as the basic toundation of this Rhapsody was taken from the last of the Paganinni Caprices for solo violin. Composed in 1934, it was first performed by the Philadelphia Orchestra, under Stokie's direction, at the Lyric in Baltimore with the composer as soloist.

In this composition appears the liturgical melody, "Dies Irae." This theme is carried by the piano in the 7th and 10th variations and in the finale the whole orchestra brings at to a brilliant climax. As an aside, hut ying in with the month's reviews, you will and the "Dies Irae" given a burlesque batody in the finale of the Berloiz Symphony.

Monsieur D'Cote performs the Rachmannoff works with exceptional talent, possessng a sute, deft touch at the piano.

The separation of instruments is bright ind keen and proportion via stereophonic ound is perfect. A high fidelity thrill.

#### JAZZ

**XAZ JAZ** 

Crazy (er) Rhythm I Fall in Love Too Easily The Lady is a Tramp Incense (Kaz Original) The Fred Kaz Trio Peggy Taft, vocalist

#### CONCERTAPES # 507

/2, Stereo, Inline or staggered, 5" reel

Available both in stereo and monaural #406) versions, this Chicago trio and vocalist bring you jazz arranged in a clever. Initiate style. Featuring Fred Kaz, piano; Dick Tyler, percussion; Lee Harvey on hass and interspersed with two vocal numbers by Miss Taft, you will thoroughly enjoy learing this group and, perhaps, wish as lote that the tape had been a longer one.

Kaz has a clean touch at the piano and r production of the instrument is distinct. The gives a slow, dreamy arrangement to "Im Glad There is You" and tops off the treel with one of his own numbers which his plenty of fire to it. Dick Tyler handles the percussion well, at times seems almost a little too close-in, and Lee Harvey beats it out on the bass . . . and dig that bass! P ggy Taft, who is curtently featured as v calist on the Russ Morgan TV show, sligs in a pleasant, smooth style. A near, b danced trio with the added touch of a good vocalist.

The separation of instruments is good, tl v sound spread. You can sense the piano is to the right, the drums and bass to left, Miss Taft seems dead center (or just off to r :ht) and the overall effect is good.

You'll find this "combo" an entertaining a dition to your tape libtary. Fidelity is tops.

#### POPULAR

#### SWINGIN' EASY

- The Modernes Five Foot Two Besame Mucho Song of the Vineyards Surrey with the Fringe on Top
- Dansero
- Diane Thamm, percussion Sain di Gangi, accordion
- John Kent, bass
- "Sr' John Geoffrey, vibraphone

#### CONCERTAPES # 508

71/2, Stereo, Inline or staggered, 5" reel (also available Monaural #405)

From the moment this tape starts you are in the swing with this talented quartet. Uncir arrangements are fresh and styling clever and the live, room-filling sounds that emanate from the speakers are enough to bowl you over. This is a less intimate combination than the Kaz trio: the Modernes deliver with much gusto and drive and you may find, as I did, that this tape is even a bit more impressive stereophonically.

Thamm does top work on percussion throughout maintaining a beat that is bound to impress you, particularly in "Dansero" which is a showcase for him, containing tingling bongo arrangements. If this particular piece doesn't get you, nothing will!

Not listed on back of the package (but it appears on the label on reel) is a catchy tune, with Polish or Hungarian flavor, called "Song of the Vineyards." Was not familiar with it, but sure do like it. The rendition of "Foggy Day" with chime effects which transport you to the city infamous for that murky condition of the atmosphere, is different and well done.

All the men play skillfully, both individually and rogether. You might be reminded of the Art Van Damm quintet, however, this quartet is hard to beat . . . they jell just right. Frankly, I have to stop myself from playing this tape over and over, it's that good. Don't miss it, it comes highly recommended in every respect.

#### SELECTIONS FROM THE BOOK OF PSALMS

Read by Alexander Scourby Produced by Harvey Carter

OMEGATAPE 10001, The Lectern Series 71/2 ips, dual track

There is not too much that can be said about this tape but there is a lot that can be said for it. Even that can be stated very shortly-we don't know how it could have been done any better. Reading the Psalms is David Scourby who has a voice of great power but keeps it controlled at all times. He uses his voice as a musician uses an instrument and the result is that this tape is one of the finest readings of Biblical material that we have heard. Included on the tape are Psalms 104, 8, 15, 139, 91, 90, 42, 22, 51, 123, 142, 130, 40, 116, 98, 30, 148, 37 and 23. The last is by far the most familiar and the others have been wisely selected to bring out all facets of the Psalms themselves. It is as suitable for use in a church as it is in the home-and that's very suitable.

#### DINNER MUSIC

### Played by Al Wheeler, electric organ, Vibrachord, Solovox and Maracas in ensemble.

#### Wheeler Studio, Vibratape DM-561

Nine selections are featured on this very pleasant tape including, Beautiful Ohio. Red Sails in the Sunset, Indian Love Call and La Golondrina. All of the numbers are multiple track recordings as Mr Wheeler makes successive recordings on each of the instruments listed above. We found this to be a very listenable reel with sort of a folksy flavor. It makes very pleasant background



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 71/2 ips, 5 reel.

BERKSHIRE

RECORDING CORP

150 West 90th Street, New York 24, N. Y.

music as the tunes are neither flashy nor brash. As many as seven separate dubbings are made on some numbers and the task of synchronizing them all is formidable indeed.

#### HOLIDAY MUSIC

#### MERRY CHRISTMAS CAROLS

Pipe Organ and Dual Chimes **Robert Rheims** 

#### BEL CANTO

71/2 Stereo, Inline ...\$11.95.(#702) 71/2 Dual, Monaural .. \$ 6.95 (#701)

This tape features Robert Rheims at the Mighty Wurlizter Pipe Organ at Columbia Square in Hollywood accompanied by a fine integration of hammer-struck chimes and the Maas-Rowe electric Carillons. Containing twenty traditional carols of the season beautifully reproduced and presented, this

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You will find yourself singing to "Joy to the World," "Silent Night," and such numbers as "I Heard the Bells on Christmas Day.

#### CHRISTMAS CAROLS

Culo Costello Male Voice Chorus Stille Nacht O du Frohliche The First Noel Adeste Fideles Deck the Halls Ave Maria (Schubert) **Jingle Bells** 

The initial release of Concert Hall Binaural Tapes was a huge success-you gave them a terrific reception! We promised more on schedule and here they are-seven more beautifully recorded, high-fidelity binaural releases, listed below.

#### BINAURAL

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by Concert Hall Society only \$4 BENEFOUS EXCEPTIS FOR FIREBIRD, EL AMOR BRUJO, RHAPSODY IN BLUE, VERDI REQUIEM, NUTCRACKER SUITE, FINLANDIA, DOWN THE MIDDLE WITH JIMMIE MCPARTLAND Full 1200', 7" reel, 71/2 ips stacked or staggered. Bound to please, and it's yours for the manufacturing costjust \$4! See your dealer soon!

#### **BN-14 Handel: Water Music** (complete)

- **BN-15 Tschaikovsky: Nutcracker** Suite—Sibelius: Finlandia
- **BN-16 Barrelhouse and Blues**
- **BN-17 Lehar: The Merry Widow**
- **BN-18 Verdi: Requiem**
- **BN-19 Rachmaninoff: Piano** Concerto #2 in C minor
- **BN-20 Brahms: Violin Concerto** in D Major

Additional tapes will be released by the time you read this advertisement! Keep up to date-write for your free copy of the latest Concert Hall catalog!

Concert Hall Binaural Stereophonic Tapes are available at record dealers and bi-fi audio centers, or write for the name of your nearest dealer,



#### SONY STERECORD, F-4

Tokyo Tsushin Kogyo, Ltd. 71/2 Stereo, Inline

An interesting and timely addition this month is the above tape from Japan, imported by Intersearch, Cincinnati, Ohio. This is a small chorus but via stereo sound quite adequately fills the end of the room with pleasant, temperate renditions of each of the songs.

"Stille Nacht" (Silent Night), "O du Frohliche" (Christmas Hymn) and the 'Ave Maria" are sung in German, the rest in English. The first two selections are straight choral work while the remainder have soloist and chorus. As accompaniment on the first four pieces I would surmise a harmonium (small reed organ) is used while on the last three the piano is employed. The stereophonic result is good and tape surface is quiet.

#### THE SOUND OF CHRISTMAS John Halloran Chorus CONCERTAPES, INC. # 505 Stereo, Inline or staggered

This tape was rushed to us by Concertapes just in time to meet the deadline. The John Halloran Chorus ren lers a delightful. melodious performance of Christmas carols.

There are seven selections contained on the tape.

Fine choral works with musical sequences from one carol to another, give a fluid continuity to the entire repertoire. Voices and instrumental works via stereo produces good over-all sound. Clear fidelity. Heartily recommended for the Christmas season.

#### FOLK MUSIC

Played by Al Wheeler, electric organ, Vibrachord, Solovox and Maracas in ensemble.

#### WHEELER STUDIO, VIBRA TAPE FFT-568

These tunes are all time favorites and Mr. Wheeler's treatment of them is pleasant. You'll find yourself whistling to numbers such as: Red Wing, Love's Old Sweet Song, Old Folks at Home, Listen to the Mockingbird, etc. The combinations of instruments, all of which Mr. Wheeler plays in successive dubbings on the same track seem well suired to these old time tunes. The playing is in a relaxed style that makes for easy listening. As with any potpourri of selections such as this some are superior to others on the reel.

#### FLAMENCO GUITAR

Almoradi Falsetta Al Bordon Recuerdo a Sevilla Alegrias del Alosno Fantasia Onubense Sarracena Sevillanas

Played by Mario Escudero

PHONOTAPES-SONORE PM 5008

71/2, Dual: \$6.95

3¾, Dual: . \$4.95 Escudero plays with skill and warm ease

seven original Andalucian and Cante Hono numbers. The vivid feeling he imparts with this instrument shows his mastery of it. During "Falsetta Al Bordon" he transmirs a sense of quiet beauty and in "Recuerdo a



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Sevilla" and the spanish dance, "Sevillana" the pulsing rhyrhms idiomatic of the Spanish music are brought into sharp focus. His fingering is strong and sure and the sounds that emanate from the Flamenco guitar are ones you will want to hear again.

The reproduction of the instrument is clean and bright. A fine tape, musically and technically.

#### NOVELTY

CAROUSELLE BAND ORGAN Album #1 BEL CANTO

71/2, Stereo, Inline or staggered ...\$9,95 Listening to the fine old Wurlitzer Band Organ play such tunes as "Lovin' Sam," "Homesick." "Toot Toot Tootsie." and and many, many more, you find the only thing lacking is the merry-go-round itself. I warn you if the children hear this you will be besieged with requests to take them to the local one, it such exists.

This particular organ has been in operation since it was installed back in 1924 by Ross R. Davis at Lincoln Park, California. On the back of tape package appears breakdown of the instrument which makes fascinating reading and just to whet your appetite the instrumentation includes 6 eightfoot stopped pipes, 6 eight-foot open pipes, bass drum, cymbal, crash cymbal, snare drum, etc. The melody contains 44 loud violins, 44 soft violins, 22 bells, 22 flageolet pipes. 22 piccolo pipes, etc.

This is thoroughly entertaining and will appeal to all ages. The fidelity is splendid and by way of stereo sound you can close your eyes and obtain a vicarious thrill by riding 'round and 'round on your favorite steed-hope you catch the brass ring!

MISTER ZITHER

Anton Karas, Zither Vienna Amusement Orchestra Hans Hagen, Conductor OMEGATAPE 2001

71/2, Dual: ...\$9.95

You will find on this tape a perfect blending of orchestra and zither playing Middle European melodies which will make your heart lighter, your feet tap and you might even find vourself reaching for the wine glass pictured in the very artistic layout on the package.

Mr. Karas performs with skill and spirit as does the Vienna Amusement Orchestra. The arrangements are par excellence. Notice the trumpets intro to "Lili Marlene." The orchestra may remind you of Mantovani, especially in such pieces as "White Lilacs," 'Lobau," and "Vienna, Vienna, Only You."

Examples of Schrammel music (typical Viennese small bands; usually zither, accordion and violin) will be found throughout tape, i.e., "Specialties of Vienna." ' Mr. Karas renders two of his works on Track A, 'Slow Coach'' (you'll recognize it as the pop song "Slow Poke") and "Zitta Ditta."

Throughout the fidelity is clear and smooth, the strings literally sing, all instruments are clear and vivid. You couldn't ask tor higher fidelity reproduction.

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solemnity and joy of Christmas—on tape Other recent CONCERTAPES releases. K M2-JAZ. the moderately progressive music of the Fred Kaz Trio with Vocalist Pergy Taft; SWINGIN' EASY danceable music by The Modernes—pop and standard selections: Richard Pick, classical Span-ish guitarist in a unique stereo solo reel. These are available—as are all CONCER-TAPES—in staggered or in-line stereo or monaural versions. monaural versions

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### TEEN TAPERS

BY JERRY HEISLER, National President

N an issue devoted exclusively to stereo and its pros and cons, I felt that it should be my place to do some exploring into this medium on my own. Fruitful exploring it was, for I discovered some of the most rewarding experiences I've yet come across in tape. It's one thing to talk about something and read about it, but it's entirely different. and much more fun in this instance, to find out about it first hand.

The Voice of Music Corporation of Benton Harbor, Michigan, was gracious enough to loan me their model 711 recorder plus the matching bass reflex speaker with which to do my experimenting. This unit is a standard monaural recorder and playback machine, but it is further equipped with an extra head accommodating the stereophonic tapes for playback. I found it an extremely fine piece of equipment to work with, but more about that later. Mr. Leonard Sorkin of Concertapes, one of the pioneers in the stereophonic tape production, loaned me 22 reels of stereo tape. Thus equipped I set out to explore the hidden wonders of stereophonic sound. To state it briefly, it's simply tremendous. It is hard to adjust to the sensation that sounds are travelling from one part of the room to the other. You notice that the drummer seems to be in one corner while the piano is in another, as in the actual layout of the band, Listening first to a regular monaural tape in which all of the music comes from one speaker, and then playing a stereo tape, the difference is amazing.

Using the V-M plus a Revere recorder as the second amplifier required, I marvelled at how realistic everything sounded. Naturally, all recorded sound is only an illusion, an attempt to duplicate the original, but stereo comes so close to exactly duplicating it that I found myself looking for the singer, or picking out the instruments of the band in their various locations. One of the Concertapes entitled "Tempo Nuevo" featured Latin music. The maraccas, claves, bongo drums, and other traditional Latin rhythm instruments were so realistic sounding that I couldn't help but want to dance to the music. This is certainly one element of stereo that will be of interest to teens. We all know how much more enjoyable it is to dance to a "live orchestra" rather than records. Now, through stereo tapes, you can reproduce the "live music" in such a manner that you won't know the difference. Perhaps the most striking tapes I heard were two reels entitled "Sound In the Round." These reels contained common everyday sound effects. This is perhaps the best illustration of the stereophonic effect that can be obtained. We have all heard train sounds, sirens, and the like over the radio and TV, but not until you hear the train approaching at the far right, the wheels

grinding to a stop in front of you, and then the whistle sounding and the train pulling off to the left, do you appreciate what stereo is. There was also the sound of a common ping pong game in which I found myself turning from left to right following the ball which I imagined was there. Excellent entertainment and a very fine illustration of the realism of stereo sound. It's hard to describe the sensation, the wandering sounds. and the amazing realism, and you must certainly hear it yourself to fully appreciate it.

Basically, a stereo tape is made by recording two separate segments of the sound on two tracks of tape and playing them back at the same time. As you all know, tape has two tracks. By using two microphones instead of one, and a special type of recorder, a recording of the left part of the orchestra is made on one track, while the right side is made on the other track. Using the special playback consisting of the special recorder. plus a separate amplifier and speaker, you recreate the program exactly as it really sounded, You may use any already existing amplifier in your home for the extra unit, I used my other recorder, but a console phonograph, hi-fi, television, radio or what have you are all suitable. You in effect play back two separate recordings at once, putting the third dimension into the sound.

To you who have never heard it, it is similar to stereophonic sound in movies. Reproduction of this kind is impossible with a conventional phonograph, to say nothing of the inherent finer qualities of tapes. No needle scratch, no surface noise, the ability to patch torn tapes, and the added realism. are all good reasons why stereo tapes are a good buy.

I have shown the stereo equipment to many teens, adults, and younger kids, and the response is amazing. There is something of value in it for all types of listeners.

Tapes are available with symphony orchestras, string quartets, jazz combos, singers. and any other type of subject found on a record. To the music students, stereo lets you hear "inside" the orchestra and pick out the various instruments, which is impossible with a phonograph where everything is all mixed up into one speaker. If you like string music, you can have the intimacy of a chamber concert right in your living room and have the sensation of a small group of musicians playing for you alone, as they did for royalty in Haydn's day. On the more modern side, the jazz combos lend themselves well to stereo. Concertapes' reel "Kaz Jaz" featuring the Fred Kaz trio, is an excellent example of this. A singer featured with the group, "stands right out in front of you" when you hear this reel.

RCA is entering this field, and other record companies are sure to follow, so an increasing number of tapes with popular artists is guaranteed for the future. Besides Concertapes, Livingston, Bel Canto, A-V, and others are producing many fine tapes.

In addition to the V-M unit, Bell, RCA, Pentron, Viking, and others are coming but with stereo units. It is my guess that very shortly all manufacturers of both ape and recorders will be in the stereo field. Ampex has a fine higher priced stereo mathine also.

V-M is planning on introducing a stereo nachine capable of making as well as playng back stereo tapes. This would be an excellent item for a school. Imagine making recording of the band and glee club in stereo. I believe that much credit is due M and others for having the foresight to provide playback at slight additional cost \$20 more) than a standard machine. It will certainly do much to establish the role of stereo in the home and in the audio visual field. If you are in the market for a new recorder, you ought certainly to bear in mind the fact that you can have a stereo machine for slightly more than a regular machine. The difference is certainly worth ir and you owe it to yourself to hear this aspect of sound if you haven't,

The machine is on its way back to the factory, the tapes have been returned, and I now have to adjust myself once again to monaural sound. It's hard to do after enjoing stereo so much. There is one nice thought to bear in my mind. The next machine I buy will be 3-D.

That's all for now. TAPE RECORDING becomes a monthly with this issue, so we'll see you a bit sooner this time. Get the clubs going, and let us hear from you. Keep 'em spinning.



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### TAPE IN EDUCATION

BY JOHN J. GRADY, JE.



**D**RAMA and music instructors in many of the high schools of the nation deserve credit for numerous innovations in adapting tape recorders to classroom educational technique.

The use of tapes for auditions, rehearsals, etc., now is standard practice in schools having an installation of tape recording equipment. And now, it is possible to have tapes on which a great variety of SOUND EFFECTS can be permanently available. This permits drama and music departments to produce programs that approach professional quality. At assemblies and all forms of school entertainments the efforts of students can be embellished by tape material which will add greatly to the pleasure of the audience.

Clever instructors with inventive initiative have produced programs that will give school audiences in the widespread smaller communities a tnuch of the theatre such as is available only in metropolitan areas. This applies particularly to musical presentations. But such a presentation can be an annual affair which wnuld be an artistic triumph reflecting great credit nn the school and the faculty members responsible for it.

The production of an old musical favorite can be given a splendid interpretation, if the student body is numerically large enough so that a melodious chorus can be organized. That's the necessary nucleus for the program. Then, the leading characters must be selected. Poise, and the ability to follow the instructor's direction are the chief qualifications for the more prominent parts. For these leading roles are to be done in pantomime with appropriate gestures and semblances of vocal action. But, the voice and the melody which the audience will hear will be a tape recording of the prominent artists associated with the eart. All solos, duets, and quartet numbers will be tabe recordings coming from the wings, A darkened stage will help to perfect the illusion.

TAPE IN EDUCATION will welcome any detailed report from teachers who have staged productions wherein the talent nf students has been combined with the tape recorded artistry of popular professionals. It is obvious that musical reviews, variety shows, minstrel shows and orher forms of entertainment can be devised by instructors so that they will have local or community significance, but the prngram will be enhanced by the taped recordings of famous artists.

#### EDUCATIONAL NOTES

TAPE IN EDUCATION finds pleasure in drawing attention to the new publication policy which will give you an issue of TAPE RECORDING each month. A detailed notice, elsewhere, will tell you of the advantages of this new plan. Now, TAPE IN EDUCA-TION, can make more prompt response to those presenting questions. Apologies are tendered to those who have supplied information in past months, if lack of allotted space did not permit acknowledgement.

From Sandy Kahn, Cincinnati, Ohio, we have good news. The SPEEDWRITING method of shnrthand instruction is utilizing tape recording as an advantage to students. Speed practice in dictation is facilitated by the use of tape recordings. A particular advantage is the availability of a tape recording which permits a student to make up any lesson missed. Tapes are also available for tormer students desiring a refresher in technique.

Teachers and administrators are reminded to THINK when they hear the oft repeated expression on radio or television, "This program is an electrical transcription." It means that the program has been tape recorded. And if teachers and administrators do THINK about it, they will realize the very many ways that a tape recorder would be of advantage in the classroom handling of repetitive texts. Tape recording is strong medicine in those schools of overcrowded classes and double sessions.



MAL'S RECORDING SERVICE Dept. TR. Box 37, Rockeway Park 94, N. Y.



**B** IRTHDAYS have a way of creeping up unnoticed and we were a bit surprised to realize that we had already spent three very busy years bringing you the facts and news on tape recording.

With this issue we begin our fourth year of publication and to celebrate we've changed our name a bit—to Hi-Fi Tape Recording and we're going monthly.

Both of these changes are in line with the many requests we have received for more frequent publication and more dope on audio in general.

This issue is stereo from cover to cover. We believe you'll find it interesting. If the articles sound a bit enthusiastic and you are inclined to take such enthusiasm with a grain of salt then go out and hear stereo yourself and you'll see that it has not been exaggerated in the least.

We want to take this opportunity to thank hoth our readers and our advertisers for their support over the years just past. Without both it would not have been possible for us to gain the leadership in the held that we now have,

The years ahead are even brighter for tape than those just past and we are looking forward to the opportunity of being of service and of putting out the kind of magazine you'll enjoy.

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### **QUESTIONS & ANSWERS**

Questions for this department may be sent on tabe 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.

 $\mathbf{0}$  —1 have recently purchased a tape deck and am very satisfied with it and the sound it produces through my hi-fi system. I would like to know what kind of tape to use for best reception. Is the extra long playing tape ( $\frac{1}{2}$  mil Mylar) advisable to use. I am told that it is not permanent and will print through. Can I arrange some way to have the tape stop before leaving the reel? An ideal situation would be to have track I play through, reverse itself to track 2 and play through to the end,

My timing needs correction as I've had tape run off the reel while recording. Do you have any hints here? I have just begun purchasing your magazine TAPE RECORD-ING and it appears to be just what I need —but I am just beginning. Do you know of any reader who records opera from the air?—S. R. Denker, 2215 Cranston Road, University Hgbts, 18. Obio.

-Any of the standard brands of tape are A reliable and tape on the Mylar base is the best you can get. There is increased danger of print through on the thinner tapes but this print through business has been much over-rated. The greatest causes of print through are the use of too high a recording level, the storage of tapes near a weak magnetic field and the storing of tapes at high temperatures. If you avoid those things you should have no difficulties. The extra thin tape must be treated carefully and handled with respect. We believe the 1 mil Mylar would be best for you until you get some recording experience and know just how to control the level.

If you can work fast, you can make a "jying splice"—we'll be running an article on that shortly. Regarding reel reversal and shift, we know of no recorder which has this feature—only the long playing music machines will make the shift from one track to the other automatically. If your recorder has a manually operated shift to the second track it may be possible for you to rig a switch and solenoid magnet to make the changeover. The switch could be set to trip when the take-up reel is full. We know of no device or attachment you can buy to do this. Regarding other opera recordists, perhaps some will write to you after reading this.

**Q**—I am having difficulty acquiring the proper acoustics from my recordings in my piano studio. I have a linoleum floor and hard wood walls, so that when recording from the piano the tones seem to "hit" sharply and the result is a hard, poorly recorded performance. Is there a microphone that will give me the correct acoustics? Also, how can I prevent outside noise from shnwing up in the recording? I was told that by hanging heavy cloth about the room it would absorb the tone. Another thing, my recordings seem to vibrate tones. If a note is held for a beat or so it warbles back and forth. Would appreciate any information you can offer me.—M. R. C., Lowell, Matt.

-We believe that most of your difficulty A stems from the room itself. The hard floor and ualls make excellent sound reflectors and the reverberations will spoil your recording. Hanging draperies will help cnt this reflection of sound waves as will a rug on the floor. However, before doing this we would suggest that you bring the mike very close to the piano, even so close that it uill have to be played softly to avoid overloading. This uill help some and perhaps enough. It will also aid in getting rid of the background noise you mention as the recording volume will be turned down lower. You might also try suspending the mike under the plano, if it is a grand type, and also putting a throw rug under the piano on the floor. This will cut down on the reflections from the floor by absorbing the sound. Regarding the warbling effect, this would seem to indicate that your recorder needs a bit of attention as wow is being produced. Clean all tape guides, the heads and also base the drive system or pucks and rollers looked over for sbiny spots or flats.

Q—Recently 1 purchased a pre-recorded dual track tape which I played several times. However, on approximately the fifth time 1 detected a background noise which was coming frnm a partial reproduction of the inverted part of the tape. This annnying interference is also being experienced in making my own tape recordings. J. A. M., Arlington, Va.

A-Somebow. your tape' guides or beads bare gotten out of alignment and are picking up the second track. Check both and tighten up if they are loose. Try shifting the position of the tape as it runs past the bead by pressing on the edge with a pencil. You will thus he able to determine whether the guides should be raised or lowered to get the best alignment.



### 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.

#### o the Editor:

Would it be possible for you to put me in touch with someone who has made good tapes of the ABC-FM broadcasts from the Metropolitan Opera House. I need these esperately as I am about to begin my yearly opera classes in which spontaneous performances are a must. No one here seems to have taped them except me but I lost many of my tapes recently in an infortunate accident. I would prefer making copies of the tapes myself and I will take care of all financial matters.—Houard Deck, 1512 Schnylkill Are., Reading, Lennsylvania.

Anyone able to belp Mr. Deck?

#### to the Editor:

I have just read with interest your letter forming the trade of your plans to pubsh Tape Recording Magazine on a monthbasis.

May I take this opportunity to offer my s.ncere congratulations on taking this step. The lack of proper information about tape recording and tape recorders has been a



great deterrent in the development of our industry. Your magazine has always been a source of outstanding information about the tape recording field. I feel certain that the publication will prove successful, not only from your standpoint but also the public who buys TAPE RECORDING MAGAZINE. Again my sincere congratulations and best wishes.—Joseph F. Hards, President, Magnetic Recording Industry Association, New York, N. Y.

Our thanks to president Hards and to the other members of the industry who very kindly offered their best wishes and congratulations.

To the Editor:

What wonderful news to learn that TAPE RECORDING will be published every month. I am sure that this will make many "tapeworms" very happy and as a consequence prove very successful. One suggestion—why don't you let the readers know when the various audio shows will be held. —Dick Kenny, Stamford, Conn.

We'll see what we can do about listing the audio shows in future issues and thanks for your good wishes. We made TAPE RECORDING a monthly because of reader requests and to keep up with the growth of the industry. Our thanks also to H. J. Hasbrouck of Teaneck, N. J. who sent his congratulations on tape—the funniest tape we have heard for a long, long time.

#### To the Editor:

Congratulations on the acceptance of your publication that makes it attractive to issue monthly. I would like to see every story begin on a right hand page and continue uninterrupted to the end of the text. Reasons are just two: 1) We like to read the text as it was written. 2) We like to clip sections of especial interest and file with others without having to slit and paste together sections retrieved from pages all over the issue.—II. P. Roberts, Tallmadge, Obio.

To the best of our knowledge we have carried over only one, or at the most two, articles in the last year! We thought that was a pretty good score. As to starting all articles on a right hand page, this makes a magazine look mighty monotonous to the average person. You will find that all major articles do start and finish without any carryover to the back. Take a look at the feature section of this issue, for instance Not one article is split up.

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## 10 Ways to Enjoy Stereo Sound

.... stereo sound on tape has definitely "arrived" and offers better sound than the highest Hi-Fi disc rigs. Units are available to fit every pocketbook.

#### by

#### Mark Mooney, Jr.

**S TEREO** sound for the home is the greatest advancement in good listening since the invention of the phonograph.

For the first time, the barriers of space have been swept aside and a whole new world of musical enjoyment has come into being. No longer is there any necessity to seem to listen to an orchestra through a "hole in the wall." Stereo on tape has demolished the wall and spread before your ears the entire world of sound in true perspective relationship. Once you hear it you'll agree that it is truly 3-D sound. The instruments of an orchestra, for instance, are not only in their proper audio perspective but those which are on the left are heard coming from the left, those on the right come from the right in the stereo reproduction. The whole side of the room comes alive with sound.

What is stereo sound? We wish we were capable of describing it. It is an emotional experience. Perhaps one simile that might help is to compare single channel sound to a black and white snapshot; stereo sound would then be a picture in three dimensions in full color.

How is this brought about? Actually the principle is not difficult to understand, nor is its application. Let us again return to our former example. The snapshot is flat, a two dimensional representation of the scene. If you close one eye it would look the same.

The 3-D picture shows perspective. It is seen by both eyes. Should you close one eye, the illusion of space and depth would vanish.



The only stereo outfit all in one cabinet is made by Ampex. Speakers throw the sound to inclined baffle boards which spread it through the room. This console also contains an AM-FM radio and a record changer. All are interconnected so that any function can be selected at the touch of a button.

You can perceive spatial relationships with your eyes because you have two of them, spaced apart. Each sees the view a bit differently than the other and this difference is interpreted by your brain into near and far—you see in depth.

In sound the story is exactly the same. You have two ears and each hears sounds a little bit differently than the other by a tiny fraction of a second. This minute difference enables you to locate the source of a sound and to hear in depth.

If you close off one of your ears with a finger or an ear stopper, your sense of sound direction will disappear. All sounds will then seem to come from an undeterminable direction. They will tend to merge and seem to occupy the same plane. You have noticed, in making recordings with a single microphone, how the sounds which to your ears seem to be distant and unimportant, are picked up and brought forward by the mike to occupy the same plane that is occupied by the sounds you wish to record.

The same is true when you listen to sound emanating from a single channel, be it disc or tape, and played through a single loudspeaker. All sense of depth is lost—you have "one-eared sound."

To make a stereo recording, it is necessary to use two microphones spaced apart to get the best effect. These mikes become the "ears" of the person who ultimately hears the tape.

The microphone outputs are fed to *two* recording amplifiers, which in turn feed the current to *two* recording heads each of which records one channel of a dual track tape.

To recreate the sound, the tape is played by means of two playback heads, one for each channel on the tape. The output from these heads is fed into two separate preamplifiers, two amplifiers and thus to two speakers spaced apart. The sound picked up by the left hand microphone in the original recording is played by the left hand speaker and the sounds from the right, emanate from the right hand speaker on playback. The result is a magnificent recreation of the original sound source, be it a single instrument or full orchestra.

Stereo is not a rich man's delight, either. There is a unit to fit every pocketbook. You can buy a stereo conversion kit for Bell, Pentron or V-M recorders for about \$17.00. For those who like to "do-it-yourself" the kits provide all the necessary parts and a small preamplifier. A single evening of pleasant work should enable you to install it. The preamplifier output is connected to any radio, TV set, or phono that has an input connection to the amplifier. One channel is played through the recorder, the



The ways to stereo enjoyment are numerous and varied. Starting from the top down: a monaural recorder having stereo playback can be attached to a radio or TV set to get the second channel. A stereo player with its own amplifier and speaker can be attached to a hi-fi amplifier and speaker such as you might already have. A stereo player with its own preamplifiers may be connected to two separate amplifiers and speakers or a player which is equipped with both amplifiers and preamps in its case needs only a connection to another speaker. A player with preamplifiers can be used to feed a two channel amplifier and speakers. A tape deck with stereo heads can be fed to two preamps, two amplifiers and speakers. A tape deck may also be fed into a stereophonic amplifier which drives the two speakers. A stereo recorder and playback can be driven from two mikes or a stereo tuner, fed into a two channel amplifier and thence to two speakers. Finally, a head attachement can be fed into a stereo amplifier having built in pre-amps and thence to the speakers.



For best stereo reproduction the speakers should be positioned flat against the wall and from 1/6 to 1/3 the distance of the room from the corners as shown in the diagram. The listening area is shown by the shaded section.

second through the radio or TV. We've heard stereo played this way and it is good.

If you wish to go farther, you can run the second channel through an already existing home music system, if you have one. If you "do-it-yourself" with a kit you'll find your friends looking upon you with something that amounts to awe for having had anything to do with the creation of such magnificent sound.

Bell and VM recorders are available with the stereo head built in and Pentron recorders will shortly be similarly equipped for those who prefer to have the factory do it.

The new Ampex A series and the Berlant Concertone offer a monaural recorder with stereo playback and matching amplifier-speakers to take care of the two channels. RCA has a stereo playback only with a matching speaker in both home and portable styles and EMC has a stereo player which will play both stacked and staggered tapes and which will play one channel through radio or TV, feed power amplifiers and speakers for both channels or supply one channel to an external speaker plugged into it and the second channel by other means.

Tape decks are also available and the system may be built up in a number of ways, either through the use of separate preamplifiers, amplifiers and speakers or through the use of a stereophonic amplifier.

If you have the room, you can install additional heads on your recorder and feed the output through a separate preamplifier, amplifier and speaker. Or you may install the heads and feed the outputs to a stereophonic amplifier and two speakers without altering or touching the wiring of your recorder. There are so many possible variations that we have charted them on page 26. For those who wish to limit the hooking up to putting a plug in the wall socket, Ampex has made a single console which also contains a record changer and radio.

Then, of course, there are the stereo recorders made by Ampex. Amplifier Corporation of America, Berlant Concertone and Magnecord and some of the tape decks which will both record and play back stereo. (See equipment directory beginning on page 40.)

Once you have it, where do you put it? Do you put a speaker in each corner of the room for playback? No, you don't. It has been found that the best position for stereo reproduction is about 1/6 to 1/3 the distance from the corners as is shown in the diagram.

Some attention should be paid to the room acoustics too, for best results. A blank, bare room with plenty of reflecting surfaces will not produce the same quality as a room with greater sound absorption. The average living room, with rugs on the floor, curtains and the usual assortment of overstuffed furniture should prove satisfactory in all cases.

You will hear about "stacked" or in-line and "staggered" heads. The latter are also termed "offset" heads. The drawing below shows the difference. The stacked head is actually two heads on one frame with one directly above the other and the gaps in line. The staggered heads are two units spaced 11/4 inches apart on the recorder. A tape made for one type cannot be played on the other. At this writing, all stereo tapes, with very few exceptions, can be obtained in both forms. You'll find a directory of all stereo tapes now available beginning on page 43.

Which kind are most in use? Sources considered reliable have placed it at 50-50 at the barest minimum with the probability that machines currently being used run as high as 75% staggered to 25% stacked. Even splitting the difference we get a 60-40 ratio in favor of staggered heads. As companies jump on the stereo bandwagon, which they are doing rapidly, this ratio may swing one way or the other depending largely on how many units are sold and whether or not those units are stacked or staggered.

But this we can say. Plan to hear stereo at your earliest opportunity. Once you hear it, unless you are hard of hearing in one ear, you'll want it, just as we did. The stereo outfits will also play regular tapes—so go enjoy yourself whichever way you pick.



Staggered heads are placed as shown in the the upper drawing with the head gaps spaced as shown. In-line or "stacked" heads are actually two heads in one case with the gaps one over the other.



# a new climax in high fidelity

### it's stereophonic... it's a <u>complete</u> tape recorder... it's an **Ampex**

#### Now the best begins at \$379.50...

yet with this surprisingly low price comes the superlative quality you'd expect from an Ampex.

The new Ampex A series offers the startling realism of Stereophonic Sound on tape ... music with such depth and clarity that it seems to have actual presence right in your living room. It also achieves vivid reproduction of single channel, half- and full-track tapes : and records half-track with true professional quality ... like the famous Ampex studio consoles used by recording companies and broadcast engineers everywhere.

The A series recorders and their matching amplifier-speakers are available in elegantly designed table-top cabinets or handsome portable cases, and offer completely integrated stereophonic or monaural systems. Features include: tape position indicator, simple tape speed selector for 33/4 and 71/2 ips. speeds, and recording volume indicator.

Table-top or portable, Stereophonic or Monaural — the new Ampex A series brings you up-to-date in high fidelity . . . adds a wonderful touch of perfection to your listening enjoyment. See them today at your Ampex Dealer's.

For full specifications write Dept. V-2853.



934 CHARTER STREET . REDWOOD CITY, CALIFORNIA



**Ampex A121** is a stereophonic sound system in table top cabinets. The two amplifier-speaker units are placed for best stereophonic effect. Tape recorder-reproducer may be located wherever desired.



**Ampex Console Music System** magnificently styled for your living room. Contains stereophonic player and tape recorder. AM-FM tuner, and 3 speed record changer. Two speakers each with a separate amplifier are mounted at the correct angle for realistic projection of stereophonic and monanral sound.

# "Sound In The Round"

By Robert Oakes Jordan

.... field trips to record sounds in stereo are most interesting and sometimes hazardous.



Photo by Glenview Studio

James Cunningham and Robert Oakes Jordan using parabolic reflectors in the field to record early morning bird sounds. By use of additional wet cell batteries and a large Carter frequency controlled generator they were able to maintain sufficient mobile power supply for outdoor recording.

> Editor's note: This article is the first of a series which will cover all aspects of stereo sound. The authors will take you on recording field trips, guide you through scientific laboratory experiments and tell you how stereo sound is recorded and played back to achieve almost the realism of live music and sounds.

James Cunningham is Research Director of Robert Oakes

Jordan and Associates, Inc., of Highland Park, Illinois. He is a unique combination of versatile engineer and musiciancomposer. Robert Oakes Jordan. director of the company which bears his name, is a physicist, author, high-fidelity editor for Down Beat Magazine and a columnist and contributor to other national magazines.

**O** UR world around us is filled with all manner of sounds. Until Emory Cook, pioneer in three dimensional recording, using a then unique method of putting them down on tape, there had been no accurate documentation. The growth in public acceptance of loudspeaker reproduced stereophonic sound over earphone binaural sound has given us all a chance to audit the sounds of our time. With this new interest in stereophonic sound we thought perhaps you might be interested in how we recorded our tape called "Sound in the Round," two volumes of which have been released by Concertapes this past year.

The idea for this entertaining stereophonic demonstration tape came out of our laboratory where we had been doing research in stereo recording. We talked to our good friend Leonard Sorkin, recording director for Concertapes. about "putting" it on their label. He not only agreed but when the time came later to put the tape together his assistance along with Tom Mercein's great narration work helped make the tape an immediate success.

The many field recording trips necessary to get the sounds for volume one made up a sort of modern day Gulliver's travels. In the course of our travels we climbed down into the Chicago subway tunnels; and up to the top of the new Prudential skyscraper while it was still nothing but a steel frame work. In a sentence on the page the distance is not very far but in the process of traveling we covered several thousands of miles, with considerable adventure in between.

It is all very well to decide quickly to go out into the "field" to do recording in mobile fashion, but the preparations take much longer. The main consideration is a source of power. Most tape recorders require approximately 115 volts of alternating current. Our Ampex stereophonic tape

\*Copyright: Concertapes, Inc.

recorder is no exception, but it draws much more current than the average machine. We had been using a small car battery powered motor generator which supplied sufficient A.C. for the Ampex 600, but it couldn't come near powering the big machine and the 4 power supplies needed for condenser microphones. There was also the problem of tape speed control when using a battery powered motor generator. If the battery voltage drops then so does voltage and frequency of the A.C. operating the tape machine. The constancy of the speed of the capstan motor in the Ampex 350-2 depends primarily upon the frequency of the A.C. power. Our mobile power supply problems were solved by additional wet cell batteries and a larger Carter frequency controlled generator. In the first volume of Sound In The Round we needed some early morning sounds; so, long before daylight one day we loaded the equipment in the station wagon and our large parabolic sound reflectors on the roofracks and headed for the woods. The picture on page 30 shows the equipment set-up we used in the field where we could not drive. The real recording adventures were yet to come. Let's start with the beginning sounds on the tape.

We felt we needed a familiar sound which most people may have participated in at one time or another, which had quick back and forth motion. Ping-pong was the answer, but contrary to what everyone now tells us, there seemed to be very few tables and players available. Basement pingpong that day was a thing of the past. We eventually found a table and two players. The recording was spectacular, or so we thought, with the *ping* and *pong* of the ball back and forth across the table; but to our dismay all anyone commented about is the asthmatic gasps of one of our players.

The next sound project proved to be a much harder subject to catch on tape. Not because of the fleeting quality of the sound, but because it is part of a passing time in America. There are lots of trains about, but these days they are all diesel powered. There is a quality in the diesel train sound that is unfortunately reminiscent of an elevated train. We wanted the good old fashioned steam train in all its puffing glory complete with the lonesome wailing whistle. The Baltimore & Ohio Yard Master told us when we might possibly catch one of the "oldtimers" steaming into Chicago.



Waiting for a United Airlines DC-6 to warm up prior to takeoff, James Cunningham and Robert Oakes Jordan stand by with their recording equipment. The recording was made in three dimensional stereo, with the plane starting up one engine at a time across the mikes.



Recording a modern day inter-urban electric train with a mobile powered Ampex 350-2 and two Telefunken condenser mikes.



Major B. B. Byrd and James Cunningham on the warm-up strip of an Air Force base set to record a jet revving up for takeoff.



The sound of one of the last steam "Limiteds" is captured in stereo, as it approaches. This locomotive was scrapped the day after the recording was made.

At 6:00 one morning the next week we were track side waiting, we got the sound in all its stereophonic realism, and learned later that we had recorded the last run of the last steam locomotive in the middle west. The great locomotive shown in the picture was scrapped the day after we recorded it. A diesel has taken over the run. The day progressed with several reels of modern train sounds diesel, electrics, and switch yard donkey steam engines. Many of these will be released on later tapes and disks. For the sound of the present day inter-urban electric we went out northwest of Chicago where they whizz across the country side, whistling down the crossings at 90 miles an hour. By this time we had set, almost by accident, a theme for the tape—transportation and streets sounds, many of which we hear every day. When these sounds are in their natural settings we scarcely give them any notice; but record them on tape and play them back in your own home stereophonically, out of context they become an exciting story in sound.

The following summer months took us through the many civic and organizational parades like the Shriners and their exotic bands. In between the fun loving antics of the Shriners, the curious crowds, and the police force we were lucky to come out with as good stereophonic recordings of marching bands as we did. The celebration of the 4th of July was almost our last. Our permission to record the fireworks didn't come until the last minute, it was growing dark, someone kindly opened the back gate of the stadium and motioned us into what seemed to be a vacant lot back of the fireworks display. In fact we, and our equipment, were the only objects around. The microphones were set up in record time and then the fireworks began. Explosions seemed to be going off all around us, and after each skyrocket exploded above us, the field where we were recording was bombarded with hard cardboard "shrapnel" and debris. Typical of our usual luck we had been "ushered" into the vacant lot at which was aimed all the skyrockets and aerial bombs for the safety of the crowd. Fortunately there were no delayed explosions and we got away safely with some interesting sounds, which are in volume one of Sound In The Round released by Concertapes.

Recordings of aircraft are interesting to take but it is very difficult to get close enough for top recordings. However, both United Airlines and the United States Air Force were most co-operative. We were able to record in three dimensional stereophonics a United DC-6 starting up one engine at a time across the microphones. Then at risk of walking into rotating props we retrieved the microphone and reset them, catching on tape the take-off of the same ship. The rest of the day was spent at the end of the commercial runway recording these gigantic planes in flight. The United States Air Force gave us clearance to be taken right out on the jet runways at a military air base where we could record the jets revving up for take off. We were able to record many different types of flight and landings. We



James Cunningham is shown in the recording studio of the laboratory of Robert Oakes Jordan & Associates, Inc.

taped the full intensity of a jet, wheels locked against moving, with the afterburner "thrown" on. More sound than the human ear can stand but we plan to release it soon for the "golden" ears of the Hi-Fi fan. Several more trips and then finally getting caught in a thunder storm produced all the sound we needed for volume one. It was now back to the studio at the laboratory where the long intensive tape splicing and editing was to take place.

The final editing of the master tape took several weeks and we are most grateful to Leonard Sorkin of Concertapes for his helpful advice and to Tom Mercein for his fine job of doing the narration. It's true we had volume one of *Sound In The Round* ready for the listener, but already volume two was in the process of organization. We were hoping that it might prove *easier done* than volume one, but as we learned later it was only *easier said*.

REEL SIZE	TAPE LGTH.		-TRACK PLA APE SPEEDS		FOR VARIO ENGTHS		L TRACK
(in.)	(feet)						
		17/8 ips	3¾ ips	71/2 ips	15 ips	33⁄4 ips	71/2 ips
3	150	15 min.	$7\frac{1}{2}$ min.	33/4 min.	1 7/8 min.	15 min.	$71/_{2}$ min.
3	225*	221/2 min.	$11\sqrt{4}$ min.	5 <sup>5</sup> /8 min.		$.22!/_{2}$ min.	111/4 min.
4	300	30 min.	15 min.	$7\frac{1}{2}$ min.	3¾ min.	30´min.	15 min.
4	450*	45 min.	221/ <sub>2</sub> min.	$11\frac{1}{4}$ min.	5 <sup>5</sup> /8 min.	45 min.	221/ <sub>2</sub> min.
5	600	l hour	30 min.	15 min.	$7\frac{1}{2}$ min.		30 min.
5	900*	90 min.	45 min.	221/ <sub>2</sub> min.	$\prod \sqrt{4}$ min.	11/2 hours	45 min.
7	1200	2 hours	l hour	30 min.	15 min.	2 ĥours	l hour
7	1800*	3 hours	90 min.	45 min.	$22^{1}/_{2}$ min.	3 hours	11/2 hours
7	2400**	4 hours	2 hours	l hour	30 min.	4 hours	2 ĥours
10 <sup>1</sup> /2	2400	4 hours	2 hours	l hour	30 min.	4 hours	2 hours
$10^{1/2}$	3600*	6 hours	3 hours	90 min.	45 min.	6 hours	3 hours
14	4800	8 hours	4 hours	2 hours	l hour	8 hours	4 hours
14	7200*	12 hours	6 hours	3 hours	90 min.	12 hours	6 hours

TAPE PLAYING TIME—FOR VARIOUS SPEEDS AND REEL SIZES All tapes are standard 1½ mil except as indicated

\*Long play tape 1 mil film. \*\*Double play tape  $\frac{1}{2}$  mil film. Chart courtesy ORRadio Industries, Inc.



Why bother ..., if you can get the Philharmonic in the living room

### Stereo — Why Bother?

#### by Jack Bayha

**M** OST magazine writers when discussing a controversial item love to start out with the statement that, "this article is completely and entirely unbiased." In making a tape recording, anything unbiased is usually full of distortion as any engineer will tell you. If you become overbiased you get poor high frequency response. (There is no extra charge for the fabulous technical education we are giving you.) We know we are biased, but with just the right amount, and our bias frequency is high enough to suit anyone. From the title of this epic you might think we don't like stereo. This is an unfair assumption on your part, and we will ask you to dismiss the notion at once. We think stereo is the only answer to the need for realistic music reproduction in the home. This, of course, precludes inviting the New York Philharmonic into your living room, with the resultant complications involved. Before anyone from the New York Philharmonic can take umbrage, let us explain we relish their music, but doubt our living room's physical capacity. Why bother, why bother, indeed?

We do not like the term "expert," there are so many of them, so please put us down as one who likes his stereo, and has for a number of years. We have had stereo in one form or another kicking around the house for quite a time, and we have managed to learn to live with it, and to love it even for its vices. Call it binaural or stereo, a two channel sound reproduction would sound the same by any other name. Why bother is a good question, because, for a number of years, we had to go to considerable trouble, annoyance, bother and aggravation to get our stereo playback. But let's go back to the beginning, a good place to start anything, and tell you of our trials, and tribulations.

Our first introduction to stereo came when we were browsing in a prominent record shop in New York. They were having a closeout sale of records. We spotted one particular record on the counter that looked down-right peculiar to us. It was a "Cook" record, and had proudly emblazoned on its jacket the word "Binaural." Just what this meant was not at all obvious to us. We asked the salesman, and he said that "It's a record that you play with two needles," a most profound and uninformative statement. The very idea of this fascinated us, and since it was cheap, and we can't resist a bargain, we bought it.

This represents the beginning of a long, sad saga. We took the thing home, and played it with the one needle system we had. We found the whole thing utterly ridiculous. Why in the world should you put the same music on a record twice? It is only fair to all involved to say that, we felt the two recordings had a slightly different sound, but why on earth two? Figuring all hi-fi addicts to be nuts anyway, we let it go at that for a while.

One day a friend, this we sometimes doubt, told us you had to use two pickups, two amplifiers and two loudspeakers to play the record. Why? Well, he didn't exactly know, but this was what you had to do anyway. It still seemed like tom-foolery to us.

About this time there was a Hi-Fi Show in New York. and we wended our merry way to it, little realizing the consequences. Oh, rue the day! At this show we visited an exhibition room operated by a small recording company called "Cook." Here, in awe-inspiring fashion, we found out why there were two tracks.

Late that night or early the next morning to be more precise, after many hours of labor, we had managed to fix up our transcription turntable with two pickups. These we connected to a borrowed amplifier, and speaker, as well as our own system. It was early the next morning before we quit listening to our lone Binaural record, and its two pickups, amplifiers, and speakers. We had the disease, our own diagnosis was a "fatal case."

Such a magnificent sound demanded our most immediate attention. We called the Cook people, and they said that they had a gadget which would, like a sidecar on a motorcycle, convert my pickup for binaural records. I drove to Stamford the next day, by car not motorcycle, and after a lengthy search found the Cook firm, snuggled next to the Bozak people who make those fabulous speakers. Here, after considerable difficulty, I managed to buy one of the sidecars and several records.

For several months I was happy though frustrated. My matriage was on the brink of disaster. The good wife was tired of tip-toeing around the house to make sure my pickups stayed in the groove, so to speak. There must be a better way to make this new sound available, I was firmly convinced, but in my ignorance, I was willing to put up with the bother to hear the sound I got. The problem was how to keep two separate phonograph cartridges in the same relative groove at the same time, and not have to run to the player every twenty seconds. They even had a special record for adjusting your cartridge position and probably still have, if you could keep the cartridges in the right grooves long enough to adjust them. I bought the record, but dismal failure was the result, my fault, I was told, and it probably was.

About this time I read in a magazine about another firm which made Binaural records, some outfit in Livingston, New Jersey, called Livingston Electronics. Being lazy, I called them on the telephone and managed to get hold of a rather friendly and enthusiastic fellow named Ched Smiley. He informed me that they made a tone arm, which was, they felt, a wee bit easier to play these binaural records with, and lots more costly, and that they, too, had a library of such recordings. He also said, in passing, that they had tape recordings. Of course, I ordered an arm, and an assortment of records, die-hard that I am. I watched for the postman with due diligence for days, and finally, it came, a Livingston Binaural arm and my new records. Despite Mr. Smiley's avid claims that his eight-year-old daughter could set the arm down perfectly each time and keep the tracks in perfect synchronism, I experienced difficulty. (I have since seen Mr. Smiley's lovely daughter, and wish I had a nine-year-old son.) At any rate, I still was in the same trouble. I complained bitterly to Mr. Smiley, via long distance telephone. (In the meantime, I had moved to Michigan.) He sent me a tape, a Binaural tape, and I found myself in utopia, almost.

Many long hours of wiring, and numerous burns, closely approximating third degree, and I had built a pair of tape amplifiers, using only three tubes of Unguentine. Coupled with a special tape deck I had ordered from Livingston, this made up a Binaural tape playback system. With feverish hands, I had a virus infection at the time. I put my tape on the deck, and waited for the leader to get by the heads. With a never-to-be-forgotten thrill, the full vista of tape stereo came forth from my speakers. This was *the* sound, and no problem of pickups wandering on the record. The tape was nailed fast in synchronism, I had been assured. It wasn't long before I broke the tape, and with fear and trepidation, I spliced it. Lo and behold, the darn thing was still in synchronism. This I felt was the final answer.

Not being too adept at tape recorder design, I had a bucketful of hum, and a number of other things we'd better leave unmentioned, wrong with my system, but at least it



.... even the cat had to tiptoe to keep the needles in the grooves of a stereo disc record.

stayed put, and it sounded like nothing 1 had ever heard.

About this time the author went to work at VM, the Voice of Music. Here we found a receptive ear on the part of Kjell Gaarder, Research Director, to our enthusiasm for stereo. They had even designed their machine with space for another head to accommodate stereo playback. Before too long we found ourself working under Kjell Gaarder with fellow VM Engineers, Lorenz and Driscol in the design and release of the first mass-produced low-cost stereo unit, the famed VM Stere-O-Matic Conversion Kit. Here, at last, as recorded in the pages of "Tape Recording," was an economical tape system for stereophonic playback. At about the same time, the line of Ampex tape playbacks appeared, and stereo was on the way.

Shortly afterwards, the rash of new stereo tapes appeared. Everyone, even the great and mighty RCA, was aboard the bandwagon. Here, truly, was the birth following the labor pains of Livingston. Now, all you hear about is tape stereo, and if you are lucky, all you hear is stereo.

Having related our own experiences with stereo, what is the situation today? Remember the old battle of the speeds in records? We find ourselves in the same situation with stereo tape, but with a difference. Here we have some strong arguments to go in a certain direction, for a given application. As far as we can tell, all recording companies are now releasing tapes two ways, stacked and staggered. If any companies are not, and we have omitted mention of them, they are better off omitted.

This time the battle of speeds has become one of economics. To stagger is relatively inexpensive, to stack costs money of consequence at the moment. To stack permits easier editing, if you are concerned with editing to 1/5 of a second. At this point, the advantage of stacked heads over staggered heads ceases to exist. (We have already said we are biased.) With staggered heads, provided you were smart enough to leave room for an extra head in your transport, realizing binaural or stereo was coming and fast, you have lower head initial and replacement costs. Unless stacked head design and manufacturing are extremely closely controlled you have better ability to control alignment of the head to the tape, and less cross-talk from channel to channel with staggered heads. Thus, we find ourselves engaged in a great civil war to see whether stacked or staggered will win, while we sit back and snicker, since you can take your pick of head systems anyway, be our guest.

We can also, being biased, enjoy the struggles of several companies who blatantly announce that they have stacked heads available, until you try to buy one. Then they rather oddly evade the issue, and you wind up with staggered heads anyway. We have actually seen stacked heads *which work* made by some firms. There may be others who have them, but every time you try to buy one, they tell you they will be in production in about ten weeks. One firm has told us this three times, at consecutive ten week intervals. This is subject to change on 10 minutes notice and the rumor factories are working overtime.

The writer will not try to tell you what stereo or binaural sounds like. Stereo you gotta hear. Stereo is with speakers, binaural with phones, should you be violently concerned. All we can say is put on your snow shoes, if you haven't heard it yet, and hear it but quick. Please, don't be like the editor of one of our biggest radio and "science fiction" magazines, who was told stereo didn't work with loudspeakers, and believed it. He now has a number of articles in his magazine on stereo, ersatz and genuine, and has obviously seen the error of his ways. We are going to bake him a "humble" pie tonight. Hear it, be your own judge. Where there is this much smoke, something must be burning, or somebody.

Naturally, when anything good appears, someone will figure out a short-cut or a way to complicate things. There is a rash of articles in some of our more prominent publications concerning the production of "synthetic" or as we prefer to call it, "ersatz" stereo. There are also a few people who feel that two tracks are not as good as three. For these people we suggest four, or even sixteen tracks. After all, listening enjoyment, if you figure as some folks must, doubles as the cost squares. There are others, like your benighted author, who feel that two is as good as four, particularly when the complications and cost square; and three only sounds better in rooms approximately the proportions of the New York Coliseum. For further details on this matter, we refer you to Euclid.

There has never been a development in the field of audio which has not had its detractors and usual host of people who have "better" answers. At the same time, there has never been any development in audio which has had as many sincere, capable advocates. Some years ago, in the course of writing a demonstration tape, the father of modern tape stereo said, "There is no way known to modern science of separating a recording once it has been put together." (Ched Smiley . . . Livingston Demo Tape 1953.) This is still true, irrespective of half-baked attempts to the contrary. Despite the claims of many authors in the popular radio press, any demonstration will prove the truth of the words of "the great white father of stereo." With great diligence, enterprise and plentiful waste of money, we have tried most of the "ersatz" systems, and, we feel, real stereo is worth the bother, if it is a bother now-a-days.

While we have enjoyed stereo as a playback medium, and, to go along with the Elvis Presley fans, feel it to be the "most," we cannot ignore stereo recording, which is even more "most." Where the stereo "recorded" tape leaves off, your own stereo tapes, recorded by yourself take up. While we cannot all be lucky enough to record the Florence May Festival Orchestra, much good local musical talent is available and is well worth the effort of recording in stereo, if not monaural.

Up to the present, most stereo recording equipment available has been prohibitive in cost. This was a condition which could not long exist, due to the competitive spirit in the tape field, the demand for reasonably-priced, stereo record equipment, and the yawning abyss in the tape fans' pockets.

Let's face it, stereo is here. Stacked, staggered, or switchable (hermaphrodite) it will survive. It has already proven its ability to survive, its will for survival. Despite all the "miraculous" new systems, 3 tracks, two tracks each direction, criss-crossed heads, and the host of ersatz systems, we find good old fashioned two channel stereo growing by leaps and bounds. "Stereo why bother" is a good question, but there's no bother anymore on playback, just good listening, this explains why we are concentrating on recording at present, we love bother. We are going to make the most of the little time left before the "ready-made," "store bought" home stereo recorders are available to all. We have to leave now, we are going to record a train wreck in stereo, gotta go down and jam the switch, before the train gets there.


# New airborne equipment records vital supersonic data on tapes made with **MYLAR**\*

Lightweight airborne recorder developed by the Autonetics Division of North American Aviation requires high-strength recording tapes that can operate over a wide range of altitudes . . . in extremes of weather and temperature. Tapes made with "Mylar" polyester film meet *all* these rugged conditions of use. "Mylar" gives recording tapes lasting strength never before available in ordinary tapes—plus these important performance benefits:

**NO BREAKAGE PROBLEMS:** "Mylar" is the toughest of all plastic films . . . tapes made with "Mylar" are unbreakable under normal operating conditions.

**NO STORAGE PROBLEMS:** Tapes are unaffected by extremes of temperature, humidity . . . no special storage care needed.

**EXTRA ECONOMY, LONGER RECORDING TIME:** Because "Mylar" is strong, thinner gauges are used. This means 50 °, more tape on the same size reel.

**LONGER LIFE:** "Mylar" contains no plasticizer—will not dry out or become brittle with age ... today's recordings can be faithfully played back many years from now. Tapes made with Du Pont "Mylar" are ideal for home use, industrial, religious, legal and professional recording. Next time you see your supplier, pick up a reel or two of your favorite brand of tape made with "Mylar".

> Du Pont manufactures the base material, "Mylar"—not Linished recording tape. "Mylar" is Du Pont's registered trademark for its brand of polyester film.



BETTER THINGS FOR BETTER LIVING ... THROUGH CHEMISTRY





# NEW STEREO Recorder to Make Bow

... examination of lab prototype of forthcoming popular priced stereorecorder indicates new and exciting field opening for recordists.

UST over the horizon is a new stereo recorder which is scheduled to make its bow to the public sometime after the first of the year. At the present the unit is in the prototype stage—on its way out of the lab and into the factory production line. V-M Corporation will be the proud papa of the new baby. No price has been set on it but it is estimated that it will be about \$250.

With the ever increasing use of stereo music from recorded tape in the home it was natural that tape recordists would look forward to the day when they could make their own stereo tapes. The interest prompted V-M to enter the field.

The recorder will be known as the model 703 and the controls very closely resemble the current model 711 which will record monaurally but has a stereo playback feature built in. The principal difference is in the volume and tone control knobs which are now dual to take care of the two channels.

The recorder will make either stacked or staggered tapes at the flick of a switch mounted on the top of the case. Two magic eye tubes, one for each channel will indicate recording volume and the recordings can be monitored using a stereo headset. The prototype shown in the illustration has undergone a number of changes in design and arrangement for production, however, the finished recorder will resemble the one shown above.

In addition to making staggered or stacked tapes in stereo, the recorder will also make single track or dual track recordings at both  $3\frac{3}{4}$  ips and  $7\frac{1}{2}$  ips. It will play back all types but must be connected to external amplifiers and speakers as its output is limited to the power of the preamplifiers built into the recorder.

To avoid hum complications and to keep the recorder as compact as possible, the power supply has been kept separate and is carried in the lid. It is small, about 4x4x5 inches and is controlled by the switches on the recorder.

All inputs and outputs will be found on the rear of the case and are shown in the drawing below.

Other features planned include a special V-M designed capacitor motor, variable equalization, low hum and thermal noise, wow and flutter to broadcast standards, half or full track erase, shock mounted preamplifiers, cathode follower for power outpur and high level inputs for tuners or crystal cartridges.

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Right: the back panel of the new stereo recorder will have the inputs and outputs shown. The cathode follower will be a double jack covering both channels.



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## DIRECTORY OF STEREO EQUIPMENT

Editor's note: this directory is of equipment which is especially built for stereo. For this reason we have omitted listing preamps. amplifiers and speakers of the regular sort which, of course, can be made part of any stereo system.

## STEREO RECORDERS



AMPEX S-5290 Stereo Recorder. In-line heads. Has full track erase, two-track record and playback. Basically a 601 portable recorder with modifications for stereo. 50 to 10,000 cps  $\pm$  2 db. In case, \$995.



STEREO MAGNEMITE Model 611. Battery and spting driven portable. 50-7500 cps at  $7\frac{1}{2}$  ips  $\pm 2$  db. Also available in  $3\frac{3}{4}$  and 15 ips. In-line heads. \$355 to \$435 depending upon speed.



BERLANT 33. In-line heads, dual recording and preamplifiers. Has upper and lower track erase, stereo record and playback. Berlant line has synchronous direct drive for timing accuracy. Price \$995.



BERLANT 33-4. Housed in three portable enclosures containing a tape transport and two speaker-amplifier enclosures. In-line heads. Stereo record and triple playback. \$1,295.



CONCERTONE 23-2. Same features as the Berlant 33 except use of two speed induction motor for direct tape drive. Both models will accommodate  $101/_2$  inch reels. Price \$795.



CONCERTONE 29-7. Contained in three wood cabinets for home use. Will record and playback full track, half track and stereo tapes. Other models and combinations are available. Consult manufacturer.



FERROGRAPH 88. Records and plays back half track, full track and stacked stereo. Two recording amplifiers, 1 meter switchable to either channel. Output 600 ohms for lines or amplifiers. Price \$595.



MAGNECORD PT6-BA2HZ, Three speeds by capstan change. 50-7500 cps at  $7\frac{1}{2}$  ips  $\pm$  2 db. Erase and two record playback halt track heads. Staggered heads. Used with Preamp-amplifier PT6-BN. Price \$425. Case \$20,





MAGNECORD M90-BA. Basic M-90 mechanism with stacked head. Both high and low mike impedance inputs, remote control. Frequency response at 71/2 ips 30 to 15,000 cps  $\pm$  2 db. Cross talk less than S/N ratio. Price \$2,165 including case.



PENTRON DYNACHORD. STEREO SM-2 mechanism. 71/2 and 15 ips speeds. Frequency response 40-10,000 cps  $\pm$  2 db. at 71/2 ips speed. 101/2 inch reels. Stacked heads. Price \$595, preamplifiers \$130 each. Three motors, push button control. Automatic cycling.



STANCIL-HOFFMAN R-5. Made in I to 4 or more channels. 2 channels on  $\frac{1}{4}$ " tape, more on  $\frac{1}{2}$ " tape.  $10\frac{1}{2}$ " reels.  $7\frac{1}{2}$  and 15 ips speeds. 45 to 10,000 cps at  $7\frac{1}{2}$  speed  $\pm$  2 db. Price \$1,490 in portable cases.

## MONAURAL RECORD AND PLAYBACK PLUS STEREO



AMPEX A 122 PORTABLE. Records and plays dual track tapes at 3<sup>3</sup>/<sub>4</sub> and 7<sup>1</sup>/<sub>2</sub> ips and also plays back stacked stereo. Matching unit A692 speakers (see next page). Also available in console. Price \$449.50.



AMPEX A121 TABLETOP. Same recorder as preceding except in wood cabinets of modern design. Used with two A621 amplifier speakers or present hi-fi system. Complete system shown, \$895. Recorder \$495, speakers \$229.50.



BELL BT-76. Records and plays back dual track tapes at  $1^{7}$ 8,  $3^{3}$ 4 and  $7\frac{1}{2}$  ips. Plays back stereo using radio or TV or amplifier as second channel, or amplifier speaker 300 D. Staggered heads. Price \$189.95.



PENTRON STEREOMAGIC EMPEROR. Records and plays back monaural tapes at 3<sup>3</sup>/<sub>4</sub> and 7<sup>4</sup>/<sub>2</sub> ips. Frequency response 40 to 12,000 cps. Plays staggered head tapes using radio, TV or amplifier for second channel. Price \$269.95. Also model HFW 500-S at \$319.95 and Stereomagic Pacemaker, Model T-90S, staggered head at \$219.95.



V-M TAPEOMATIC. Plays staggered head

tapes using radio, TV or external amplifier for second channel. First home recorder to adapt to stereo. Records and plays back monaural tapes at 334 and 71/2 ips. Price Model 711, \$209.95.

## TAPE PLAYERS



EMC CONSTELLATION TAPE PLAYER. Plays stacked or staggered tapes, full track or dual track monaural. Has two preamplifiers, speaker and one power amplifier in case. May be connected to radio or TV for second channel. Model 2000, 712 ips, \$209.95. Model 3000, in-line, only \$189.95.



RCA VICTOR STEREOTAPE PLAYER. Plays stacked tapes, full track or dual track. Two units, one player and one speaker. Also available in portable cases. Player \$276, speaker \$85, both units. mahogany, \$350.

## AMPLIFIER-SPEAKERS



BELL AMPLIFIER-SPEAKER 300-D. To match Bell BT-76 stereo playback recorder. May be used as separate hi-fi amplifier-speaker or as complete second channel unit for any stereo rig. Price \$89.95.



AMPEX A692 AMPLIFIER SPEAKER. Built to match A112 recorder with stereo playback. Has indicator light, tone and volume controls. May be used with any unit for second channel. Price \$199,50.

## STEREO TAPE DECKS



BRENNEL MARK IVB TAPE DECK. (Fenton Co.) Four staggered stereo heads, three motors. Operates at  $3\frac{34}{4}$ , and  $7\frac{12}{2}$  or  $7\frac{12}{2}$  and 15 ips. Matching preamps available. Deck price \$114.50.



VIKING FF75 B. Staggered heads. Model FF75SU Inline and staggered heads, playback units. Model FF75R stacked head playback plus monaural record and playback. Matching preamps and amplifiers available. Prices from \$69.95.

WEARITE TAPE DECK (Ercona Corp.) Model F-106. Stacked or staggered on customer's order. 334 and 71/2 ips speeds. Matching amplifier is Ferrograph Model FS 103. Appearance is similar to Ferrograph Stereo Recotder. Price \$250.

## STEREOPHONIC TUNERS



ELECTRO-VOICE STEREO TUNER. Model 3303. Two separate tuners, one FM and one AM in single case for reception of stereo broadcasts. Has music control center builtin. Must be connected to external amplifiers. Price \$279.50.



ELECTRO-VOICE STEREO TUNER. Model 3304. Same as above except that music control center is not incorporated. Price \$239,50.



H.H. SCOTT STEREO TUNER. Model 330-B. May be used with any amplifier. Has two complete tuners, one AM, one FM. FM dipole antenna supplied. Price \$199.95.

## **AMPLIFIERS** and **PRE-AMPS**



BELL STEREOPHONIC AMPLIFIER. Model 3DTG. Two complete preamps and power amplifiers in one case. Can be ted direct from tape head, or stereo tunets. Can also be used as a straight amplifier. Inputs grouped on back of chassis, controls on front. Available without cover for installation in custom built systems at \$10 less. Price as shown \$159.95.



BOGEN STEREO TAPE PLAYBACK AM-PLIFIER. Has dual pre-amps and a 10 watt amplifier in compact case. Outputs from stereo heads can be fed into unit. One preamp output teeds hi-fi system, 10 watt amplifier feeds additional speaker. Price \$59,50.



FERROGRAPH STEREO AMPLIFIER. Model FS 103.2 channel, recording and playback amplifier, tone controls operate in record or playback. Suitable for use with Wearite C stereo deck. 15 watts each channel, complete with power pack, 2 stage bias and erase oscillator. Price \$450.



MAGNECORD PT6-BN STEREO AMPLI-FIER. Two low level, low impedance mike inputs, master and individual channel gain controls. Used with Magnecord PT6-BA2HZ, Price 8 (69).



NEWCOMB STEREO AMPLIFIER. Model 3D-12. Two complete preamps and amplifiers in one unit. Single knob control of both channels, hum balance controls, 12 watts output each channel. \$179.50.



VIKING PREAMP. Model PB60. Made to match FF75 decks, two required for stereo playback. Controls are volume and variable equalization. Price \$24,50



VIKING RECORD PLAYBACK AMPLI-FIER RP61. Used with FF<sup>+5</sup> tape deck series to add monaural record functions to stereo playback unit. Price S<sup>+1</sup>,50.

## MICROPHONE STANDS



FENTON BINOR STEREO RIG (B & O). Has acoustical separator and mounting brackets. Provides stereo separation cancellation of feedback and perfect response pattern. Designed for Fenton B & O mikes. Price \$38,95,

## STEREO CONVERSION KITS

STEREO CONVERSION KITS. Kits consisting of heads, pre-amplifiers and necessary hardware are available from Bell, Pentron and V-M to convert presently owned monaural recorders to stereo playback. Berlant also has kits available to convert their line to stereo. While kits are specifically designed for recorders mentioned, it is sometimes possible to use them on others. Heads for mounting on any recorder will shortly be available.

# **Catalog of Recorded Stereophonic Tapes**

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### GRIEG, Edvard

## HAYDN, Franz Joseph

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 Andante, O Piu Toato Allegretto, from Quartet Op. 76 No. 2. See DEBUSSY, WEBGOR, 2223-1.
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## WAGNER, Richard

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  MUSIC IN MOTION, Vol. 1, Lenny Herman, Tea For Two. Rose of Washington Square, Lover Come Back to Mr. In the Still of the Stoke, and 6 others—LIVINGSTON, 7", 74 [19, \$11,95 ..., 710881N
  MUSIC IN MOTION, Vol. 2, Lenny Herman, Tea For Two. Rose of Washington Square, Lover Come Back to Mr. In the Still of the Stoke, and 6 others—LIVINGSTON, 7", 74 [19, \$11,95 ..., 710881N
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  MUSIC, WINK & CANDLELIGHT, Vol. 2, Dy Austria Still, 95 ..., 700HN
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## DEMONSTRATION

- Ci 95. ST IN.
  CHE FAMOUS WESTMINSTER SONOTAPE 1956.
  AUDIO SHOW DEMONSTRATION TAPE. Loyd Mose, Narrator SONOTAPE, 7", available Now, 30, 7<sup>1</sup>/<sub>2</sub> ips, \$6,95
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## MISCELLANEOUS

- <sup>1</sup> UROU'SEL BAND ORGAN, complete with reeds, glockensplet, bress drum eastancts, state drum, tri-angle and exublas; Loan Sum, Homesuk, Toat Toat Travisie, and others BEL CANTO, 72, 752 [ps] [21]

# NOW HEAR Stereophonic Sound WITH NEW Bell 3-SPEED RECORDER TAPE

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Bell, famous name in Hi-Fidelity, offers plenty that's new and STEREO too, in this inexpensive, easy-to-operate Tape Recorder.

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Bell's new BT-76 Tape Recorder is masterfully engineered, ruggedly built and handsomely cased, with outstanding features usually found only on expensive professional equipment. As a recorder, or when used for either Monaural or Stereophonic playback, it is a magnificent instrument. Its staggered (offset) heads feed equalized, pre-amplified signals from Head #1 into Recorder Amplifier, from Head #2 into any Radio, TV, or other amplifier system equipped with phono input (connecting cable furnished), guaranteeing true Stereophonic Sound. Now being demonstrated at leading Department Stores and Hi-Fidelity Dealers. Now hear it now!

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Model MTI-M

## **ESTO SPLICER**

dow available for any type 1/4" ape, mylar, acetate or paper tape, splicted to each other or themselves. Also splices type leader stock to any type magnetic tape without adhesives. Endless loop splicing no problem





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# NEW PRODUCTS

## BELL & HOWELL PORTABLE



A new portable version of the Bell & Howell Miracle 2000 tape recorder, known as Model 300-L, has been announced by the manufacturer. This model contains two 8" 'woofers," one on each side, and two electrostatic "tweeters" in front. Each electrostatic speaker contains a thousand small apertures which act as miniature loud speakers. The new unit has three separate motors to drive the capstan, feed and take-up mechanism. It features "drop in" threading, dual speed operation and a program indicator which quickly locates each recording on a tape. The recorder is built in to a portable fawn and brown scuff-proof spatter finished carrying case, and is priced at \$299.95, For additional information, contact Bell & Howell Company, 7100 McCormic Rd., Chicago 45, Illinois.

## STEREO HEAD



A new in-line magnetic head adaptable for stereophonic sound applications has been announced by The Nortronics Company, 1015 S. Sixth Street, Minneapolis 4, Minn. It is model TLD, and, according to the manufacturer, it will provide long wear, negligible oxide accumulation, excellent rejection of surrounding fields, and unitormity of trequency and amplitude response. The head can be compensated for flat response between 30 and 10,000 cps at 712 ips; and it features precision ground and lapped gab, balanced electric and magnetic structure, high output, and precise colinear alignment. Active tape surfaces do not pass over any epoxy resin or plastic surfaces, thereby eliminating the need for frequent cleaning. This head is suitable for use in

new equipment design, replacement, and for conversion. Detailed dimensional drawings, specifications, and prices furnished upon request.

## ALONGE SPLICER



Alonge Products, Inc., 163 West 23rd Street, New York 11, N. Y. is marketing a new non-magnetic recording tape splicer. The central feature of this instrument is a cutring arm with 3 knives, of which the center knife is directional and can be pivoted and set to cut recording tape at a perfect 90,  $671/_2$  or 45 degrees. Two nonmagnetic pressure pads hold the recording tape firmly in place while the other two knives cut the splicing tape to the correct width. Two float springs provide static neutralization. This splicer is priced at \$29,95. For additional details, write to the manufacturer.

## ELECTROSTATIC SPEAKER



Pampa Electronics Sales Corp., 7354 Frankford Avenue, Philadelphia 36, Pa., is marketing its Model 5-20 electrostatic tweeter speaker. Such features as built in crossover network, frequency range of 5000 cycles to beyond 20,000, excellent transient response, and full 360 degree horizontal omni-directional sound pattern distribution are included. Plug in combination with ALL NEW BIGGER THAN EVER!



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## TAPE RECORDERS AND ACCESSORIES

Buy your first recorder or your next recorder from a specialist in recording for over 8 years. Pay no more, and take advantage of our experience.

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## BOYNTON STUDIO,

10 Pennsylvania Ave. TUCKAHOE, N. Y. SPencer 9-5278 your present speaker system is provided by the tweeter design, and it is housed in a hand rubbed cabinet finished in mahogany (5-20M) or blonde (5-20B). Dimensions are  $4\frac{1}{2}$ " wide by  $4\frac{1}{2}$ " deep by 12" high over-all. This speaker is priced at \$29.50. Contact manufacturer for details.

## JAPANESE MIKE



Especially designed for tape recording, this new moving coil microphone, Model TM-7, is manufactured in Japan and imported, guaranteed and serviced by Intersearch, 7 Arcadia, Cincinnati, Ohio. It is available in high or low impedance models, has a frequency range of 50 to 12,000 cycles, and an output level of -65 db. Finished in black and chrome, it also has an off-on slide switch. The price is \$15.

Intersearch has also introduced the new Sony tape heads, which are manufactured in Japan by Tokyo Tsushin Kogyo, Ltd. Among these are the 3 channel,  $\frac{1}{4}$  inch stereophonic in-line heads. Crosstalk between the 3 channel tracks is rated by the manufacturer at -50 db. Also offered are the Sony 2 channel, stacked stereophonic heads. For complete information regarding these items, contact Intersearch.

## CONVERTED TANDBERG



Tandberg tape recorders converted from 17/8 and 33/4 ips to 15/16 and 178 ips speeds are available from Fidelity Sound Company, 1429 L Street, N.W., Washington, D. C. This allows 16 hours of recording and play-back time on one 7" reel of half mil tape. At 15/16 ips the response is from 50 to 3,000 cycles, plus or minus 2.5 db, with a signal to noise ratio of at least -47 db. Except for the converted speeds and equalization changes, the units are identical to the Tandberg 2 and 2F models. The price of the unit is the same as the standard Tandberg models, plus \$35.00 conversion fee. Additional information available from Fidelity Sound.

## Now! New RCA Victor superstrength, extra-long play Hi-Fi "Mylar"\* tape!



Plays 50% longer! Not 1200 feet. but 1800 feet on a 7" reel! Extrathin—superstrong! Costs \$7.50 per 7-inch reel. Also available: new RCA Victor acetate tape with full frequency performance – at a special low price! And RCA Victor acetate tape with full High Fidelity response. The same tape used for professional recordings— \$3.50 for 7-inch reel.

"Mylar" is a registered Dupont trademark for itt polyester film. Nationally advertised list prices shown, subject to change.

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## New Magic Clip for

## Any Size Reel!



Whether you're a professional or record at home, you know how often tape spills out from a reel you're ready to use. That wasted time may mean missing the very crux of what you want to record.

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ists in this steadily ex-panding field. Starting with the fun-damentals of magnetism and acoustics you progress rapidly to the art. Blashing methods, distortion, re-producing heads, erasing, a rtificial recerberation instrumentation and meas-netical and heipful an-alises of modern com-mercual recording emile-ment, are but a few of the subjects covered. Doz-ens of schematics, block diagrams, cross - sections and under - classis Dhotos alle publics in selecting new enument or build-ing your own.

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Address City, Zone, State Price outside U.S.A. 55.50- cash only, Money back in 10 days if you return book

Newark Electric Company has released its new catalog, No. 65, a complete electronics reference book. This 304 page catalog describes and illustrates everything you need in high fidelity; tuners, amplifiers, speakers, cabinets and all accessories. Electronic engineers, amateurs, servicemen, and the radio-TV-electronic hobbyist will find a most complete selection. Write to Newark Electric Company, Dept. FA-12, 223 W. Madison St., Chicago 6, Illinois, for your free copy today.

## McINTOSH C-4

McIntosh Laboratory, Inc., 320 Water Street, Binghamton, N. Y., is marketing the C-4 equalizer-preamplifier. It features eleven positions for base and treble equalization. There are separate bass and tteble accentuate and attenuate controls, five input channel selectors for tape, tuner, mike, and two phonograph cartridges, and a master on-off [ switch, with volume control. For price and details, contact manufacturer.

## **BOOK REVIEW**

How to Announce for Radio and Television. Edited by William I. Kaufman. 515"x812", 95 pages. Published by Hastings House, 41 E. 50th Street. New York, N. Y. Cloth bound, \$2.50.

This is a comparatively small book but it packs a lot of solid advice from the top pros including André Baruch, Bill Cullen, John Reed King, Ed Herlihy, Bud Collyer, Carl King, Richard Stark, Cy Harrice, Bob Stanton, Joel Chaseman, Johnny Olsen and Norman Brokenshire. Each has contributed a chapter to this volume and the picture they paint is accurate and down to earth. Anyone contemplating radio or TV announcing as a career would do well to read this volume . . . it should speed their way and, at the very least, wath of the traps and pitfalls that lie along the way.

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At a very small cost our modern methods of instruction will enable you to master a new language. Write today for full information on our pay-as-you-learn plan. Send \$1.00 for sample 3 inch reel recorded at 3% lps-dual track.

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Crowd noises, animal sounds, train whistles all at your fingertips with "Major" Production aids. Your friends will enjoy your broadcasting party when they hear how



# TAPE CLUB NEWS



Emerging from the door of the church are Alan Wilson and Daphne Halfhide, both of whom met through World Tape Pals, of which they are members.

With our constant wonder over the versatility of magnetic tape recording, it comes as no surprise to hear that this medium has wrought wedding bells for two members of World Tape Pals. The happy couple are Alan Wilson, 31, who formerly resided in Singapore, Malaya, as a representative of Lever Bros. Co., and Daphne Halfhide, 27, secretary, of Paignton, Devon, England.

Daphne and Alan were introduced to each other through World Tape Pals, and after a year of tapesponding between Malaya and England, the "pals" became "sweethearts." When Alan returned to England about four months ago, he met Daphne in person, with the resultant wedding September 22nd.

The wedding, of course, was to be tape recorded and, said Daphne. "A tape recorder will be the motif on our wedding cake."

We all join the members of World Tape Pals in extending congratulations and best wishes to the blissful "tapemates."

The Voicespondence Club has a Special Fund, made up of contributions by members, expressly for the purpose of making club participation available to those who otherwise would find dues and supplies too costly. As a non-profit organization, the club is required to charge all American members annual dues, and the Special Fund pays for the dues of those who find it difficult to do so. Recording supplies are also furnished from this fund to such people. The club hopes to some day be able to furnish recorders to worthy persons. At the closing of the club's fiscal year on April 15. the Special Fund had paid the dues of 3 persons and furnished a special tape to another. One member donared a recorder which was turned over to an interested hobbyist who could not afford his own machine. The club welcomes all contributions to this fund.

(Continued on page 50)



## Travel the complete Sound spectrum with TANDBERG . . . the world's finest tape recorder!

- 3 SPEEDS 1 %, 3 3/4, 7 1/2 I.P.S.
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You too can experience the wonder of complete sound dimension with the world famous Tandberg recorder. Off the air recordings made . . . just fooling around at home, are truly mirrored by the wonder of electronic faithfulness, built right into this amazing tape recorder.

The versatile 3 speed Tandberg will more than pay for itself in tape savings as you discover the superior performance of this recorder at its lower speeds.

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## SPECIAL ANNIVERSARY BARGAIN

This month Hi-Fi TAPE RECORDING is celebrating an anniversary—the start of our fourth year of publication. We want you to celebrate with us, and here's what we have in mind.

First of all, a free Tape Catalog worth 50c with each new or renewal subscription.

Second, a year's back issues (all of Volume 3) for just \$1.00 extra with a regular 1 year subscription or the same back issues FREE (all of Volume 3) with a two years' subscription.

Limited quantity use coupon today.

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## CONVERT YOUR TAPE RECORDER INTO **A CONTINUOUS MESSAGE REPEATER**



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Satisfaction Guaranteed The AUDIO VENDOR will convert your tape recorder into a continuously repeating mechanism. Successfully used to teach, sell, announce, dictate and for sleep learning. Plays from 5 to 10 minutes. Double time with a MOBIUS LOOP. No rewinding necessary. Repeats message or music continuously hour after hour. Send for literature on our longer playing models and accessories. Advise make and model of your recorder.

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2107 Ashland Ave., Toledo 2. Ohio

## (Continued from page 49)

Through the efforts of World Tape Pal, Max Nicholls, South African representative, several new members have been added to the club. An article on Max's tape exchange activities, and his use of WTP to make friends throughout the world was published in a magazine, which also carried a picture of his well-equipped recording studio,

H. C. Madigan, P.O. Box 255A, Hawera, Taranaki, New Zealand, has informed us of his intention to organize the New Zealand Tape Recording Club, He is most interested in hearing from any tape recorder enthusiasts who wish to join him in this venture. Mr. Madigan feels the club will serve a definite need in furthering friendship and swapping or loaning reels of tape. Interested parties may contact Mr. Madigan at the above address for full particulars.

Overseas Branch President of the Australian Tape Recordists Association, William M. Crosdale, possesses two 10" LP records of dramatized children's stories taken from Australian aboriginal folk legends, which he offers to tape for anyone interested. Bill also has a story narration of the Australian Kookaburra, with various forms of this amusing hird's laugh. The Kookaburra bird has a laugh somewhat like that of a Jackass. Also among his collection are complete recordings of the "Corroboree" Ballet Suite (Peter Antill), which contain actual primitive aboriginal musical instrument sounds in the score. Mr. Crosdale has offered to copy any of these recordings on tape for collectors of the unusual. His address is 10 Foster St., Cessmock, N.S.W.

A new tape club, dubbed The American Tape Exchange, is being organized and at present has 12 members. There are no dues and anyone wishing to join can send a 3, 4 or 5" reel, recorded at 334 ips to the club's co-ordinator, Dick Conklin, 6 Ricky Blvd., Albany 3, N. Y.

## JOIN A CLUB

TAPE RESPONDENTS INTERNATIONAL Jim Greene, Secretary P. O. Box 125, Dept. T., Little Rock, Ark. THE VOICESPONDENCE CLUB Charles Owen, Secretary Noel, Virginia

> WORLD TAPE PALS Harry Matthews, Secretary P. O. Box 9211, Dallas, Texas

INTERNATIONAL TAPE WORMS Art Rubin, National Chairman P. O. Box 215, Cedarhurst, L. I., N. Y.

AUSTRALIAN TAPE RECORDISTS ASSOC.

Jack A. Ferry, Federal President Springbank Rd., Clapham, S. Australia

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

THE NATIONAL TAPESPINNERS Carl Lotz, Secretary Box 148, Paoli, Pa.



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# NEW PRODUCT REPORT



## **MUS-ET TELEVISION SOUND TUNER**

... this unit picks up the sound channel of TV. Output suitable for recording or feeding Hi-Fi system.

THE Mus-et is a TV tuner which will meet the needs of those who wish to tape TV programs or who prefer to play the TV sound through a hi-fi system.

Many TV sets, which have excellent video circuits, are rather weak on the audio side. In addition, especially in the table models, the cabinet speakers are pitifully small and cannot do justice to the sound being put out by the stations.

Since TV has become such a potent force in the nation, the big-budget advertisers have been trying to out-do each other in the quality of the shows put on. Big name bands, musical comedies, usually sung and played by the tops in personalities, are now on TV rather than on radio.

Most of these shows are well worth taping for the fine music and in accomplishing this, the Mus-et fills the bill nicely.

Mus-et provides a 12-channel tuner similar to the TV selector and trimmer and a converter, two stages of limiter amplifiers and a discriminator. This combination provides an audio output of approximately one-tenth volt sufficient to drive the phono or microphone input of most any type of tape recorder —or a pre-amp type power amplifier of a home hi-fi system or PA system.

The linearity and band pass of this unit is quite good and adequate to handle proficiently the audio quality available in the FM sound channel of the TV stations, provided it is connected as directed or is provided with a separate antenna.

The antenna connection is provided on the back of the unit. In our tests we connected it to the TV set antenna posts and found that it worked fine and did not cause any interference with the TV set itself.

Not being noted for going easy on equipment we test, we also made an antenna out of a length of 300 ohm twin lead, such as is used between the antenna on the roof and the TV set. This was cut to 54 inches—about channel 2 length—and taped to the office wall.



Product: Mus-et TV Sound Tuner

Manufactured by: Tapetone, Inc., 10 Ardlock Place, Webster, Mass.

Price: \$69.95

As we are in a "fringe area" about 20 miles from the city of Baltimore, we did not expect too much. However, even on this makeshift antenna the Mus-et did very well and we barely opened the pre-amplifier volume control to get sufficient recording volume.

The stations from Washington, about 35 miles away, also came through but not as well. Doubtless with the proper antenna they would have.

The AM picture modulation is effectively suppressed and trapped in the Mus-et so that only the TV sound comes through.

The unit is separately powered from the commercial power line and it is suggested that it be plugged into the same wall receptacle that furnishes power for the TV set.

A three-foot connecting cord terminating in a phono plug of the cinch type is attached to the unit and is used for making the connection to recorder or amplifier.

As the Mus-et does not have a speaker it must be used with a recorder which can be monitored as it is recording, especially if it is desired to eliminate the commercials from the program, or you can turn on your TV set and use it for monitoring during recording if your recorder does not permit you to monitor through headphones or speaker.

The tuning should be accomplished before the program starts and if your recorder has a magic eye or VU meter it may be used to indicate the best and sharpest tuning.

We have no hesitation in recommending this unit for those who want to tape from TV or, to twist an old adage about children, those who feel TV should be heard and not seen. It is surprising how many programs become more enjoyable that way.

# JDUCT REPORT



## **BELL STEREO AMPLIFIER**

This versatile unit can be fed from tuners, turntables or tapemonaural or stereo: has automatic bass compensation for low level listening.

This dual amplifier is an ideal unit for the audiophile or hi-fi fan to use in his home or studio as it is a most complete switcher, preamplifier and dual amplifier and provides excellent quality and good volume.

It comprises two complete preamplifiers and two 10-watt amplifiers in one case with myriad inputs and outputs making it possible to set up a completely varied sound arrangement with a minimum of components.

It makes possible the connection of an AM-FM or TV tuner, a stereo AM-FM tuner, monaural and/or stereophonic record player with compensated inputs, monaural or stereophonic tape recorder or playback with or without equalization (depending upon whether the recorder output is direct from the playback heads or recorder output). It has a preamp (and compensation) for magnetic pickups. An auxiliary input provides practically every type of amplifier connection one could want.

The outputs are separate to feed two loudspeakers, providing up to 10 watts audio on each channel. Each has output impedances of 4, 8, and 16 ohms which will match most speakers. 500/600 ohm speakers or lines can be matched with an auxiliary transformer if necessary. A low level high impedance output is also provided for each of the two amplifiers.

Sufficient voltage gain is provided by six multiplier and driver stages in each amplifier, giving adequate output for input levels as low as --75 db.

The residual hum and noise measured



Product: Bell Stereophonic Amplifier—Model 3DTG

Manufactured by: Bell Sound Systems, 555 Marion Road, Columbus 7, Ohio

Price: \$159.95 Model 3DT (less cover) \$149.95

89-91 db below 10-watt output, without factory adjustments being changed.

The frequency response is in excess of studio FM requirements and a flat response of 35 to 16,000 cycles per second, plus or minus  $\frac{1}{2}$  db is met without juggling the controls between amplifiers. Taken singly, broader response of 20 to 20,000 cycles can be met.

The gain, bass and treble controls are ganged to control both amplifiers simultaneously. A balance control is provided so that either the left or right amplifier may be shaded as desired.

The input selector covers magnetic pickups, tape heads direct, tape recorders, radio tuners, crystal pickups, high level (.1 to 1 volt) inputs and by judicious selection, dynamic, ribbon and crystal microphones. A crystal can be fed into the radio input and a dynamic mike or ribbon mike with a high impedance transformer can be fed into the



The diagram shows how the stereophonic amplifier may be hooked up to the various sound sources. Tests showed it to be a very versatile and highly satisfactory unit.



All of the inputs and outputs are conveniently located on the rear of the chassis. On the left are three 110 volt outlets for making connections to recorders, turntables, tuners, etc. The center strips are the speaker outputs giving impedances of 4, 8 and 16 ohms which will match most speakers.

tape head input. Any preemphasis on the high frequencies can be compensated for.

A compensating selector is provided to give bass boost on low level output to avoid thinness and is automatically reduced in effectiveness as the output level is increased—or this function may be cancelled entirely.

It was included in the unit to compensate for a natural fault in the human ear which does not pick up the bass properly at low levels of sound. By adding the proper amount of bass boost at low level, the music still sounds right. This should prove a boon to those who have spouses with sensitive ears and who have to run the rig with the volume low in order to keep peace in the family.

The amplifier is housed in a handsome case finished in gold and ivory. Controls are ivory knobs on a burnished gold plate.

Space precludes mention of all the possibilities of this stereo amplifier. We feel it is a high quality composite of many and varied units and should provide the purchaser with all the controls and factors necessary to make a complete sound system central amplifier.



The input side of the chassis. The inputs on top of the chassis are for magnetic pickups and tape heads. Those on the right are the radio and auxiliary inputs. A hum balancing adjustment and a radio input adjustment are also included. Microphones may also be plugged into the amplifier if it is desired to use it as a PA system.





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FOR SALE: Magnacord S36B for rack mounting. Two speed, 7.5 and 15. Includes 10-inch reel arm extension. Used just a few times, practically brand new—\$175. Write: A. Wycislo, 457 West 51st St., New York, N. Y.



RECORDER or DICTATING MACHINE in the car. Operated by a CARTER ROTARY CONVERTER from your car battery, you can easily DOUBLE the usefulness of your recorder if you take it along. Carter Converters are used in cars, boats, planes, supplying 110 v. AC from storage battery power. Sold by radio parts distributors everywhere. Mail Coupon for full details and nearest distributor. Carter Motor Co., Chicago 18.

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TAPE RENTALS—Now you can rent a wide variety of nationally known pre-recorded tapes monaural and binaural. For particulars and free price list, write to National Rent-A-Tape, P. O. Drawer I, Winnetka, Illinois.

FOR SALE: Tech-Master Hi-Fi 20-watt amplifier, TM-15A. Assembled by technician. Kit alone sells for \$48.95. Will sell for \$45. Also, Electro-Voice SP12-B Hi-Fi 12" speaker in Rebel 5 enclosure, will sell for \$45. Both items for \$85. Harry W. Gilmer, Box 363, Emory, Virginia.

DISCS MADE from your tapes—78, 45 or L.P. Standard studio quality discs. Prices reasonable Garrison's Recording Service, 534 Granby St., Lakeland, Fla.

WANTED. Used or new recording tape, large quantities only (50 or more reels), any condition. Write fully to: R. T. Lackner, 2029 Bradley PL, Chicago 18, Illinois.

AMPLIFIER, brand new, have two, will sell one for \$47.50; two brand new speakers 8" PM for \$6.75 each, also a new EV microphone, cost \$75.00 for \$40. George F. Bischof, Fort Worth 4. Texas.

LEARN WHILE ASLEEP with your recorder. Amazing book gives full instructions. \$2,00, Guaranteed. Research Association, Box 610, Omaha.

1957 HI-FIDELITY model VM-710 rape recorder complere with accessories. Cost \$189.95, yours for \$149.95. Jack Fives. 2916 Rockrose Avenue, Baltimore 15, Maryland.

USE YOUR RECORDER in direct commission work for independent, nationwide record company, AFM licensed. Part time, large profits. Sparkle Records, Inc. P. O. Box 21, Station B, Evansville, Indiana

MAGNECORD M81CX used 50 hours. cost \$"90, sell \$525; Concertone 20,'20 TWR-2 with cases and monitoring amplifier, excellent condition, cost \$630, sell \$475; new Magnecord \$35B, cost \$379, sell \$265; new Jensen Imperial speaker system, mahogany finish, cost \$575, sell \$375; new Jensen Concerto speaker system, mahogany finish, cost \$189, sell \$125; Fisher AM-FM runer 50-R, excellent, cost \$164.50, sell \$120; Fisher 50-CM-4 audio control, excellent, cost \$97.50, sell \$55; Fisher 70-AZ-2 25 watt amplifier, cost \$99, sell \$60; Fisher 50-R, 50-CM-4, 70-AZ-2, cost \$361, sell \$225 prepaid anywhere USA in original shipping cartons. Box 221, Lebanon, Tennessee.

FOR SALE: tape recorders and Hi-Fi: Ampex 600 recorder and Model 620 companion piece, both absolutely spotless condition that cannot be told from new: cost \$694.50, sell \$575. Midgetape pocket tape recorder, still operating on original baneries and still under factory warranty, perfect inside and out; cost \$249.95, sell \$169. Fisher FM80 tuner, as the day it left the factory, only \$95. (Several other Fisher items in like condition to like saving, also.) Merantz Audio Consolette, beaufiful condition, cost \$153, yours for \$99.50. Altec 60-3C speaker two months old, \$119. Zenith "Royal 500" transistor pocket radio, received as a gift and never used. \$55. Recoton microgroove diamond stylus pickup. \$15. If not satisfied with any item purchased, your money refunded in full. Philip Lance, Greenwich, N. J.

MINIFON RECORDER with all accessories. Perfect condition, \$100. Andrew A, Sandor, M.D., 946 East Main Street, Alhambra, California.

WE



SYNCHRONIZER HOOKUP: Make sound movies with your tape recorder, \$10.00. Anderson, 2424 Phelps Street, Stockton, Calif.

QU'IERO CORESPONDER EN ESPANOL por cintas magneticas. Favor de enviarme su primera cinta Nicholas Lenrini, M.D., Cheboygan, Michigan, U.S.A.

WALKIE-RECORDALL, with powerpack and voice activator, in briefcase. Factory checked. Make reasonable offer. Unger, 400 Forest Ave., Buffalo, N. Y.

CLASSIC TAPE LIBRARY, sale, all or part, on 7 inch, 1200 ft. reels, double track, stereophonic, World's Great Overtures on tape broadcast quality hi-fi recordings. \$7.99 each, or send 50c for complete listing. R. Hession, 5234 S. Dorchester Ave, Chicago 15, III.

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

HYPNOSIS—SLEEP LEARNING. Wish to taperespond with persons skilled, studying, or interested in hypnosis or sleep learning. Give details on tape  $3^{34}$  speed, dual track, all tapes answered, no letters please. H. Bargy, 1111634 Camarilla, North Hollywood, Calif.

BINAURAL—TWO FENTIONE Blue Ribbon mikes with hum shields. Two Shure Cable Transformers and 25 foot extension cables. Fine response, new condition, \$100. N. C. Bremer, 608 E. Seneca St., Ithaca, N. Y.

TAPE RECORDERS, too many, have a Webcor, cost \$244.50 for \$146.50; Wilcox-Gay \$165 like new for \$75; Eicor \$59.50. I have two others am keeping, two are brand new. George F. Bischof, Fort Worth 4, Texas.

ONE 250 WATT and one 500 watt RCA power amplifier, new, in original packing boxes, complete with tubes. Will trade for professional tape recording equipment or sell for cash. L. E. Lechleitner, 2216 Green Street, Harrisburg, Penna.

CIRCUS CALLIOPE MUSIC: Different—Entirely New—Authentic—Fourteen full length selections, 05 RPM extra extended play, (thirty minutes playing time). Two ultra high fidelity records in an attractive album, \$5.00 postage prepaid. Single copy, seven selections, \$3.00. Demo Records, 1421 N. 21st Street, Milwaukee 5, Wisconsin.

FOR SALE: 4 Stromberg AU-29 six watt amplifiers, \$35 each, still in unbroken cartons; unused Presto PB-17 long play tape machine, \$400; cartying cases in good condition for Magnecord Voyager and for PT6-AH tape mechanism only, best offer. Chief Engineer, WKDN, Camden 4, N. J.

WOULD LIKE TO TAPE—respond with people. All rapes answered. Charles Smith, 512 Columbia Terrace, Peoria, Illinois.

WANTED: late model Berlant or Concertone stereophonic rape recorder. Must be in good condition, state price and model number. Also, Model 108-B Gray pickup arm, C. Droz, 2085 W. 105 St., Cleveland 2, Ohio,

GIANT SAVINGS! Manufacturer overstock, new hi-fi recording tape. Boxed 7" reel, \$1.70 postpaid. Order three, enclose only \$4.65! Guaranteed. Tape Enterprises, Box 6, Springdale 1, Conn.







A full hour's TV program—picture and sound—on a single 12½-inch reel of magnetic tape, ready for instantaneous playback... that's the electronic miracle made possible by the epoch-making Ampex Videotape Recorder unveiled last spring. The television industry immediately bought up the available prototype models of the amazing new machine, and one of the first questions to come up was, of course, "Which tape?" The Ampex Videotape Recorder records on a special 2-inch wide tape, which must be made to the most rigid specifications to capture fre-



\*Reg. T.M. Ampex Corp.

quencies as high as 4,000,000 cycles per second. All along, Orradio Industries, manufacturers of the famous **irish FERRO-SHEEN** process tapes, had been working with Ampex, so they were ready for the question. Now **irish FERRO-SHEEN Videotape** is available in production quantities, and delivery has just been completed on the television industry's first full-scale commercial order.

The successful adaptation of the exclusive **irish FERRO-SHEEN** process to the extraordinarily exacting requirements of commercial Videotape production is the culmination of a long-term research and development program — implemented by the same staff and facilities responsible for the development and current production of the five famous **irish FERRO-SHEEN** tapes for audio tape recorders: Shamrock, Green Band, Long Play, Double Play and Sound Plate.

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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."

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



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