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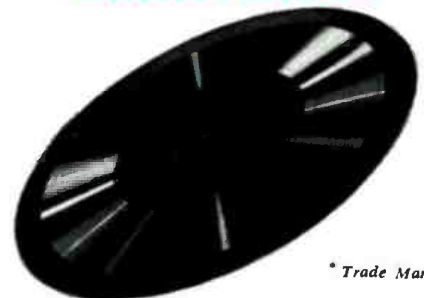
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NEW TAPES

By Charles D. Sigsbee

UNTIL now we have enjoyed the clear air of exclusivity in the tape reviewing field. But now another magazine has decided to at last recognize tape as a legitimate, and potentially lucrative, enterprise. We are no longer alone.

In a verbose, and seemingly apologetic, acknowledgement of this fact they introduce the fellow who is to do the job: And who do you think it is? None other than the erudite Mr. R. D. Darrell (See TAPE RECORDING for October, 1954).

Mr. Darrell is introduced by his editor as a man "who has long been a tape enthusiast—a *sane* tape enthusiast." As a tape enthusiast who has been recently cleared by his analyst, I would like to quote from a piece he did for the July 31, 1954 edition of the *Saturday Review*; not so long ago really. He wrote:

"Even more significantly, the typical tape fan is generally a person of radically different tastes and temperament from those of the common garden variety of disc collector. He

seldom is capable of sustained attention to meaningful musical contexts and often relishes best the divertissements of Maestro Hack Swain and his ilk. If he does turn to more serious fare, he tends to gulp it indiscriminately in doses too big to chew or digest. Usually he is happiest credulously listening to his own irrationally finagled home recordings or those of his fellow fanatics (with whom he loves to swap 'sound letters' closely akin to the gab-fests of adolescent radio 'hams'). At heart he is a hobbyist rather than a music lover."

That isn't all he said, but that about sums up the whole idea. He hoped later in the article that, "At least some tapeophiles may outgrow their present juvenile idiosyncrasies; but I am highly skeptical whether the basic pattern can be altered."

Shall we get on with the tape reviews?

CLASSICAL

CHOPIN

Etudes, opus 10

Etudes, opus 25

PHONOTAPES-SONORE PM-119 (A Vox recording)

I hope that PHONOTAPES will bring us all of the Chopin recordings of Miss Novaes. Selection of Chopin interpretations is largely a matter of personal taste. For me, this is just right.

Miss Novaes plays with great depth and extreme sensitivity, attributes vital to the interpretation of Chopin. Her mastery of the instrument is unquestionable and the Vox engineers have reproduced it beautifully.

All 24 *Etudes* are included so this tape should make a valuable addition to any library. My only objection to the recording is that the level could have been a bit higher to preclude the possibility of hiss at high reproduction levels.

GRIEG

Peer Gynt Suites, Nos. 1 and 2

BIZET

L'Arlesienne Suites, Nos. 1 and 2

L'Orchestre Societe Francais

Hans Hagen, Conductor

OMEGATAPE 8001

This is the best classical recording to date from Omega. They have never been able to achieve the recording degree of excellence in the classical field that they enjoy in their popular recordings. That is, until this tape and the Strauss Waltz tape mentioned elsewhere in the column.

This is a superlatively reproduced recording, by any standards. The string tone is naturally silky and the brasses stand out in clear relief. Note particularly the flute tone in the *Intermezzo of L'Arlesienne #2*.

Musically, the two Suites are expressively done by an orchestra that is several cuts above the usual Omega group. Hans Hagen is a sensitive conductor who seems to get more out of the Grieg than I have heard for some time.

SMETANA

Die Moldau

ENESCO

Roumanian Rhapsody #1

KODALY

Dances of Galanta

DVORAK

Scherzo Capriccioso

Bamberg Symphony Orchestra

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Equipment used

Jonel Perlea, Conductor
PHONOTAPES-SONORE PM 127 (A Vox recording)

A sampler of the music of central Europe conducted with great understanding by Perlea, himself a Roumanian expatriot.

This is an excellent tape in every way, musically and technically. The coupling of these four composers demonstrates the similar ethnic influences on their work, despite the fact that their substantive compositions are dissimilar in approach.

Kodaly's *Dances of Galanta* is the work most likely to be gaining a new audience through the medium of this tape. Written in 1934, the themes have nothing to do with his own life in the town. Actually they were taken from a manuscript collection published in Vienna in 1800.

The recording is the type that should find a ready acceptance among collectors, both music and/or high fidelity.

STRAUSS, JOHANN
 Waltzes and Polkas
 Vienna Pro Arte Orch
 (No conductor)
OMEGATAPE 3003

Apparently any Viennese Orchestra, even a comparatively unknown one, can do a masterful job with the music of Johann Strauss. This is a lilting performance, highly recommended.

Even the recording is outstanding, imparting a beautiful tone to the strings. Omega should use the techniques employed here as a standard for future classical recording, as they have never had the success in this field that they enjoy in their popular recordings.

TCHAIKOWSKY
 Marche Slav
 Romeo and Juliet
 1812 Overture
 Capriccio Italien
 Vienna State Philharmonia
 Jonel Perlea, Conductor

PHONOTAPES-SONORE PM 112 (A Vox recording)

Given an orchestra of ability, and this is one, Perlea is hard to beat when it comes to the music of Eastern Europe. He breathes new life into these Tchaikowskian war horses. He conducts with a spirited attack and his orchestra responds with some formidable sonorities.

The *Romeo and Juliet* Overture-fantasy is as fine a performance as you are likely to hear anywhere. In fact, the only flaw apparent in the recording is in the reproduction of the Kremlin bells and cannon during the *1812 Overture*. The bells sound no more impressive than a set of "Parsifal" chimes, while the cannon sound more like someone beating a rug on a Saturday morning.

I am surprised that the people who engineered such an otherwise lush recording would have accepted such an obviously poor sound recording for dubbing purposes.

It is fortunate indeed that these four additions to any basic library are included on one tape, and such a good tape at that.

VERDI
Carmen (Abridged)
 Cora Canne Meyer, mezzo-soprano
 Leo Larsen, tenor
 Corry Van Becku, soprano

Gerard Holthaus, baritone
 Betty De Jong, mezzo-soprano
 Riek Van Veen, soprano
 Netherlands Philharmonic Orchestra and chorus
 Walter Goehr, Conductor
RECORDED TAPE-OF-THE-MONTH CLUB #121-D

Another in the series of concert operas currently being presented by this company. This one is, if anything, even better than *La Traviata* reviewed last issue.

While there may be those who criticize the idea of abridged operas, I am inclined to applaud the idea. Certainly it is one way, and a comparatively inexpensive one, to place grand opera into the homes of more people. Careful editing retains all of the major arias and enough of the story line so that one with a score or libretto can very easily follow the continuity.

The soloists, while not the world's finest by any means, are quite adequate and at times surprisingly good, as witness *Escamillo* in this edition of *Carmen*.

Walter Goehr does a spirited job of conducting and manages to capture and hold the atmosphere of Bizet's lively score.

The recording itself is as fine as any we have encountered, and for the high-fidelity fraternity we call attention to the awesome orchestral sound reproduced in the overture.

I do have one complaint, and this one concerning all Tape-of-the-Month Club recordings. A voice keeps reading the titles to me. As I have already determined the selection from the cover of the box, I see no particular reason for this. It would suggest that everyone plays music blindly, waiting breathlessly for the great surprise.

A man plays *Carmen* because he wants to hear *Carmen*, not *Traviata*, and if he is careless enough to switch the tapes in the boxes, what happens serves him right.

TCHAIKOWSKY
 Symphony #6 in B minor (Pathetique)
 Zurich Tonhalle Orchestra
 Otto Ackermann, Conductor
RECORDED TAPE-OF-THE-MONTH CLUB #123

Suddenly we are stricken with a mild rash of "Pathetique's." Two this month, one last month and others appearing in the catalogues. Only natural, I guess, considering that there were fifteen on disc records last time we counted.

This is a good one. Ackermann conducts the first and last movements with an unusual amount of warmth and depth of understanding.

The recording is of the same high standard maintained in all of this organization's recordings.

LIGHT CONCERT
DESORMES
 Exotic Latin Melodies
 London Pops Orchestra
 Sheldon Burton, Conductor
ALPHATAPE #15

The Boston Pops would have a good time with these Spanish dance themes.

The London group, however, seems to miss the point. Music like this, in the Spanish idiom, should have a considerable bit of fire under it; here it does not. At one point it sounds like a chorus turn in a London music hall.

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It is a nice try though, the orchestra sounds fine and the recording excellent.

FOUR MOODS FOR ORCHESTRA

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Lamare: Andantino
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Sinding: Rustle of Spring
Vienna Amusement Orchestra
Norbert Pawlicki, Conductor

ALPHATAPE #13

Pleasant listening for a warm Sunday afternoon in a style popularized by Melachrino and Mantovani. This orchestra is every bit as good and the recording is excellent.

HIGH FIDELITY SHOWPIECES (Volume 3)

Tchaikowsky:
"Tonight We Love" (Piano Concerto #1)

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"Moon Love" (Symphony #5)
London Pro Musica Orchestra
Sheldon Burton, Conductor
Dore Goodwyn, Pianist

OMEGATAPE 5013

Fortunately these are whole movements excerpted for the recording. They are somewhat reminiscent of the RCA Victor, "The Heart Of _____," recordings so popular some 20 years ago.

I imagine the best purpose the recording will serve is as an introduction to classical music for Freddy Martin graduates.

Neither the presentation nor the recording are too noteworthy, even as hi-fi showpieces.

GEORGE WRIGHT ENCORES

At the mighty Wurlitzer pipe organ
HIFITAPE R-702

What a fantastic instrument this is! What a fantastic recording, too, as Mr. Wright puts this gigantic, 5 manual, 256 stop, Wurlitzer theater organ through its paces.

Containing, as it does, almost every conceivable orchestral coloration, the Wurlitzer organ provides an adventure in sound, a nostalgic one too if you remember these giants as standard theatrical fare.

Musically the tape is interesting as George Wright is a top arranger and has gathered together here a collection of songs designed to display his talent to the utmost. "Quiet Village," for example, is an unusual musical experience by itself but in this presentation is loaded with realistic, live bird calls which makes it one of the most unusual

arrangements to come along in some time.

As for the quality of the tape, the only word that can be used is, fantastic. It will take a mighty good system to get off of this tape everything that is on it.

HIGH-FIDELITY MOOD MUSIC — Love,

Your Magic Spell is Everywhere; Surrey With the Fringe On Top; World Events; Moulin Rouge; Hot Today; Ruby

Warren Baker and his Orchestra
Hollywood All-Star Orchestra

ALPHATAPE #6

Who says mood music? Depending upon the kind of mood you are looking for, you had better listen to this first, because it isn't the popular conception of mood music. Definitely not the soft lights and sweet music mood: This is the dance hall mood, bright lights and all.

Good recording though, in spite of the mistling.

JAZZ

VIC DICKENSON SEPTET
AV 707B

An easy-swinging style, displaying much virtuosity among the individual members including some of the best-known names in the jazz field: Edmond Hall, clarinet; Sir Charles Thompson, piano; Jo Jones, drums; Rudy Braff, trumpet, and of course, Vic Dickenson's trombone.

As is typical of pickup recording groups such as this, their ensemble work is not particularly impressive but there is so little of it that it doesn't really matter much. On the other hand, their solo work is inspired, presumably by the presence of the other, equally eminent, virtuosi.

The recording is quite good and should find a ready audience among collectors.

MISS TEDDI KING

Jo Jones, drums
Jimmy Jones, piano
Ruby Braff, trumpet
Milt Hinton, bass
AV 408 B
A-V Tape Libraries

If you have ever wondered what columnists meant when they said that a certain singer "sold a song," then listen to the intimate voice of Miss Teddi King as she "sells" eight ballads.

Here is a great singer, reminiscent of some of the sensational small-combo singers of the 30's. Except for bridges, the combo remains discreetly in the background but providing a good, stylized accompaniment for her close-up voice.

That's about all I can say, except that the quality of the recording is excellent, you'll just have to hear it yourself.

JAZZ AT STORYVILLE

Wild Bill—Pee Wee—Vic
AV705B

The genesis of this music is in New Orleans, but it might properly be called now, Chicago Style (with New York overtones). Most of the members of the group are familiar to jazz fans everywhere, New Yorkers in particular.



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At first I thought the tape was somewhat distorted, but now I am not sure that it isn't Davison's natural trumpet tone.

The recording is not as clear as one would expect, certainly not up to the standards of the current tape output.

JAZZ LAB (Volume #2)
Bob Enevoldsen Quintet
JAZZTAPE 4011

In contrast to most of the jazz tapes received this month, this one is entirely of the modern school and seems to be primarily a showcase for the composing and arranging techniques of Enevoldsen. In fact, the best work of the quintet is evidenced on his originals.

The group is good but not the most important feature of the tape. Instrumentation and recording techniques are paramount and steal the show. Curiously, on a work as experimental as this one, Omega includes no program notes. I would determine the instrumentation to include: valve trombone, vibes, accordion, piano, bass, and drums. Who doubles isn't clear, my guess is piano and accordion.

The recording is flawless, a showpiece.

NEW ORLEANS

Kid Ory's Creole Band with Lizzie Miles
JAZZTAPE 4008

Despite the fact that Kid Ory is an almost legendary name in American jazz, his work is not shown up to best advantage here. Except for possibly, "Dippermouth Blues" and "High Society," the recording is too patently commercial. Too bad too because his ancient vintage (circa early 30's) recordings are highly prized by collectors everywhere.

The big, booming, gravelly voice of Lizzie Miles does exactly the right thing with the kind of songs ("Careless Love") that seem to be written for her. Those of you who have never heard Lizzie Miles, don't expect a Rosemary Clooney. This is a style of singing that was once very popular and common in America but is now dying out about as fast as the wall telephone. For this reason alone, the recording can be considered something of a collector's item.

Unfortunately the recording, though acceptable, is not up to the usual par of Omega's jazz tapes. A slight distortion is evident throughout the tape on my copy.

REEL JAZZ (Volume #2)

George Lewis and his Ragtime Band
JAZZTAPE 4010

This is still my all-time favorite among the recording Dixieland groups. For a spontaneous, fervent approach to this unique, American musical heritage, you can't beat them. Throughout the recording there is the feeling that *here* is authentic improvisation by a group that has enjoyed doing this, and nothing else, for several decades at least; as, in truth, they have.

No effort is made to please the commercial trade, it could have been recorded right off the street. If you don't like Dixieland music, you won't like this; if you do like it, don't pass this up, no matter what.

Overall, the recording is excellent, although there was some hiss evident in my copy.

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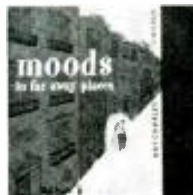
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The ultimate in high-fidelity tape recorders for home and professional use. Dual-speed, dual-track FERROGRAPH recorders are also available in custom models (tape decks available, from \$195.) and with 7 1/2 and 15 ips speeds. Independent field performance tests rate Frequency Response at ± 2 db between 50 and 10,000 cycles with wow and flutter less than 0.2% at 7 1/2 ips.

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1448 39th Street, Brooklyn 18, New York
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JUST TOO MUCH

The Progressive Piano of Hal Schaefer
Joe Mondragon, Bass
Alvin Stoller, Drums
RCA VICTOR BP-8

Just too much, what, isn't too clear, at this moment. Certainly not too much Hal Schaefer; there couldn't be. Here is a young man with a piano style that is as different, yet thoroughly acceptable, as one could hope to find in a frustrating tour of the jazz-producing bistros. Someone said, "Uninhibited," and that's it. "Unpredictable," and that's it too.

What superlatives can one use to describe this fellow? The greatest? Since whom, Tatum? Nope, not good enough. He stands strictly alone, as himself. Even the time honored, and worn, *St. Louis Blues* sounds new and different, but oh, so fine, the way Schaefer treats it.

One thing is sure; this is not the last of Hal Schaefer, only the beginning.

The recording? Forgot for a moment that it was a recording which, I guess, is about the best thing I can say about it.

LATIN AMERICAN

MAMBO MADNESS

Tito Rodriguez and his Orchestra
TICO T15-6 (Livingston)

A spirited recording of straight commercial arrangements of the currently popular Mambos and Cha Cha Chas.

A considerable boost in bass is necessary to get the rhythm up to where I think it should be for this type of music, particularly if it is to be used for dancing, and I can't see it being used for much else.

CHA CHA CHA

Carlos Molina Orchestra
OMEGATAPE 5004

One of the most lifelike big dance band recordings I have ever heard. What more can I say?

THE EXCITING LATIN BEAT

Side A—Armando Thomae and his Orchestra
Side B—Maldonado and his Orchestra
OMEGATAPE 5005

Recorded in Mexico City, this is straight band treatment of Latin American music very similar to that in "The Exciting Mambo" rape reviewed in the last issue.

Almost every type of Latin American rhythm is included here: bolero, beguine, mambo, samba and guaracha to mention a few. You will notice that each side of the recording is played by a different band. Of the two I prefer Maldonado, for no particular reason. My only complaint with the tape is that I feel the rhythm could have been more pronounced in keeping with the title. I kept wishing throughout the tape that those doggone brass men would play a little softer.

CHA-CHA-CHA—Mi Nuevo Cha-Cha-Cha;
Jarabe

Tapatio Cha-Cha-Cha; Morenita
Bailando Cha-Cha-Cha; Guageo
en Dominante; Kissing Mambo
Carlos Molina and his Orchestra
ALPHAtape #8

If this recording was made at the same time as the one above, then something happened during the processing, because this

one is one of the most lifelike recordings in any media that I have ever heard. The separation of instruments, throughout, is rather startling; solo instruments are right down front and the whole recording seems to spread its sound all around the livingroom. The music itself is similar to that on the other recording by the same group but the unusual fidelity makes this recording outstanding.

International Pacific might well use this one at Audio Fair time and you might well use it at home. Try it and see.

MISCELLANY

SPOTLIGHT ON PERCUSSION

Arnold Goldberg, classical percussion
Kenny Clarke, jazz drummer

Al Collins, narrator
PHONOTAPES-SONORE PM 115 (A Vox recording)

What a relief to find a percussion recording *not* designed for the demonstration of high fidelity equipment. This is a study tape, and a very good one.

Presenting, as it does, every conceivable type of percussion instrument with an identifying commentary and an illustrated, and explanatory, booklet, it should find its way into every basic music library, whether at home or school. Of course, reserve a place for the other instruments of the orchestra which certainly must follow.

In spite of the fact it was not designed specifically for the high fidelity market, it is a high fidelity recording, so much so that the instruments sound uncannily lifelike.

It is with great sadness that we must announce that this is the last column by Charles Sigsbee. He was killed just before this issue reached the press.

While returning to his home in Columbia, Missouri after a visit to the east he died in an almost head-on collision near Lexington, Virginia. His wife and four children were in the car and were badly injured.

The accident occurred on a wet road when a dump truck out-of-control, skidded and crashed into the Sigsbees' car. Mr. Sigsbee was unable to avoid the truck, which was on the wrong side of the road. He had the choice of turning his car over a 25 foot drop, which probably would have killed all the occupants or of taking the impact on his side. His split-second decision to take the latter course saved his family but meant his death. The car was demolished and had to be cut apart to get the occupants out.

He is survived by his wife, Georgia, twins Karen and Cheryl, age 12, Marie-Gene, age 6 and Brenda, 18 months.

We will miss him personally, as a friend, and we will share the loss with our readers of his pithy comments and excellent reviews. He was the first reviewer to devote his attention exclusively to music on tape and was a pioneer in this field.

NEW PRODUCTS

RCA STEREO PLAYER



The Radio Corporation of America, Camden 2, N. J., is readying a stereophonic tape player to be introduced in the Fall. It will be available in a portable unit (Model 8STP1), and a consolette (Model 8STP2). The portable version (top picture) includes a stereo tape player (which will play either dual or single track tapes at 7-1/2 ips), two amplifiers and a 3-speaker Panoramic sound system in one unit, and an identical speaker system in a matching luggage-type, two-tone brown and tan simulated leather case. The consolette model (bottom picture) contains a unit with a stereo tape player, two amplifiers and a 3-speaker Panoramic sound system, and an identical speaker system and storage compartment in a second unit. The portable unit is priced at \$295, and the consolette at \$350. For additional information, contact RCA.

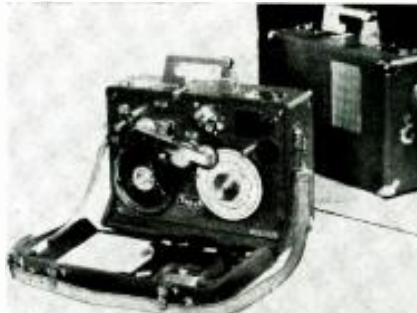
TELECTRO DICTATION MACHINE



Telectro Industries Corp., 35-16 37th Street, Long Island City 1, N. Y., is marketing a new office machine for dictation

and playback, Model 556R. It records up to one hour on a 5" reel, and dictation and transcription are accomplished on the same unit. When used for dictation: separate microphone permits private-recording, separate foot pedal permits instantaneous start and stop, playback, back spacing, erasing and editing, rewinding, and listening. When used for transcription: separate foot pedal permits instantaneous start and stop, playback, back spacing or rewinding, and playback can be heard through internal speaker or separate headset. Additional data and price may be obtained by writing to Telectro, above address.

NEW RECORDER MODELS



broadcast equipment Specialties Corp., Box 149, Beacon, N. Y., is offering three new 1956 recorder models, successors to the spring-powered walkie tape recorders, known as Tapak Newscasters. The Duplex model provides broadcast-quality recording and a built-in loudspeaker for reproduction to room-size audiences. Another model incorporating the addition of a VU meter and 600 ohm zero level output for line feeding is called the Triplex. An economy model, the Simplex, consists of the basic recorder-reproducer without loudspeaker. Specifications and prices are available from Broadcast Equipment Specialties Corp.

SHURE BROCHURE



Shure Brothers, Inc., 222 Hartrey Ave., Evanston, Ill., have issued an informative and analytical brochure on their new "Music Lovers" phonograph pickup cartridge. This booklet explains the function and importance of the pickup cartridge in a high fidelity system, potentialities of barium titanate cartridges for high fidelity reproduction, describes the Music Lovers cartridge, including a typical installation in a phono pickup arm, and the simple method of replacing needles in seconds. Copies are available upon request to Shure.

RECORDED TAPE OF THE MONTH CLUB RECOMMENDS THE FOLLOWING TAPES—

EXCLUSIVE

#127
Mozart Symphony #29 in A Major—K. 201.
Orchestra of the Vienna State Opera —
Henry Swaboda, Conductor

HI-FI MASTER LIBRARY LIST

- 101 S Musical Notes from A Tourist's Sketch Book
- 103S Mozart's Piano Concerto #17 in F Major
- 107S Saint-Saens, Carnival of Animals
- 108D Scheherazade, Opus 35 and Tchaikovsky, Romeo and Juliet
- 111D Verdi, La Traviata
- 115D Beethoven, #3 Eroica, and Tchaikovsky, Voevoda
- 119D Schubert, Symphony #8 Unfinished and Saint-Saens, Piano Concerto in E Flat Major
- 117D Rimsky-Korsakoff, Capriccio Espagnol — Winterthur Orchestra; Victor De Sarzens — Conductor. Mendelssohn, Part 1 — Midsummer Nights Dream; Netherland Philharmonic Orchestra. Part 2 — Final's Cave Overture — Zurich Tonhalle Orchestra; Dtto Ackerman — Conductor.
- B507S Beethoven and Mozart German Dances
- B501S The Immortal Kern
- B502S Music For Cocktails
- 105.1S Artistry in Flamenco
- B512S French and Spanish Folk Songs
- 113-S American Folk Songs — Album #1
- 116-S Cowboy Songs — Album #1
- 104S Original Dixieland
- B510S Charley Christian Jazz
- 112.S Tape Parade of Hits — 12 Popular Selections
- B504S } Slips, Fluffs, and Boners
- B505 }
- 105-2D Alfred Drake Reads the Rubaiyat and Sohrab and Rustum
- 110D Basil Rathbone reading Edgar Allen Poe's — The Raven
- B514D Reading of Dylan Thomas
- B515D Judith Anderson reads from Edna St. Vincent Millay

These tapes are also available at your local dealer at \$6.95 ea.

ALL TAPES 7 1/2 I.P.S. S—IS SINGLE TRACK. D—IS DUAL TRACK. (\$6.95 each Non Club Members.)

JOIN T.O.M. and SAVE!

Every month the club selects a new recording as its tape of the month, and makes it available exclusively to club members. Each member receives a FREE 4" preview . . . and hears the selection before buying. Full tapes cost club members only \$5.95. MEMBERSHIP dues are only \$5.00 for one year. Members get 12 preview tapes AND ARE UNDER NO OBLIGATION TO BUY MONTHLY SELECTIONS!

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New York 19, N. Y.

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RECORDED TAPE OF THE MONTH CLUB
DEPT. TF-6
449 West 51st Street
New York 19, N. Y.

- Please enroll me as a member. Enclosed is my \$5.00 dues for one year. I look forward to my 12 pre-views and understand I am under no obligation to buy monthly tapes.
- Enclosed please find \$1.00. Send me the two pre-views. If I am satisfied I will join the club for an additional \$4.00 for the next 10 months, with no obligation to buy full monthly tapes.

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Pacemaker
Tape Recorder
with
Unimagic
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— easier than pushing buttons

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103-55

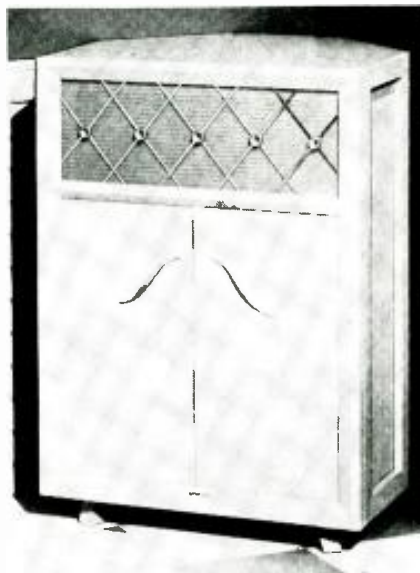
PENTRON CORPORATION
787 Tripp Ave., Chicago 24, Ill.
Canada: Atlas Radio, Ltd., Toronto

NEW MAGNELOOP



Amplifier Corporation of America, 398 Broadway, New York City, has developed a new continuous loop magnetic tape recorder-reproducer with continuously variable speeds. It is the new Magneloop, which is designed to record and playback any message, musical program or sound effect up to 60 minutes in length, or a multiplicity of messages totaling 60 minutes. These units enable the stepless control of tape speeds from 1 7/8 to 15 ips, with a frequency response of 50 to 15,000 cps at the higher speed. Recorders, reproducers, or recorders-reproducers are available in single-, dual-, and triple-channel models, each incorporating a shock-mounted low-noise level pre-amplifier, a 100 kc ultrasonic bias and erase oscillator and an efficient d-c motor. For complete information and price, write to Amplifier Corporation, above address.

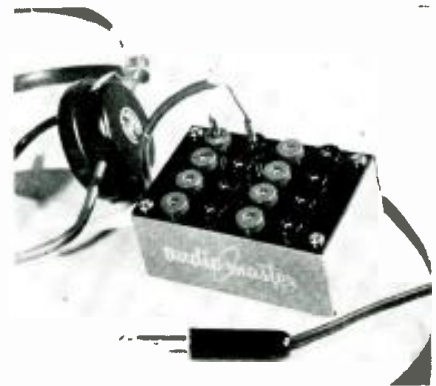
E-V CENTURION



Electro-Voice, Inc., has introduced the Centurion, a corner folded-horn enclosure and 4-way loudspeaker system. This acoustically-designed enclosure has the exclusive E-V "W" single path indirect radiator folded-horn which fully utilizes the walls at the corner of the room to extend bass reproduction down below 35 cps, promotes superlative transient response and lowers distortion. Multiple driver and crossover points properly divide the audio spectrum into four sections with smooth transition from one to another for clean, distortion-free reproduction and over-all musical bal-

ance. The Centurion is available in Mahogany, at a price of \$157.80; and in Korina Blonde, at a price of \$166.80. It is also available with complete factory-assembled 4-way speaker system, in Centurion IV at \$297. and \$306. and in Senior Centurion IV at \$375. and \$384. For complete information, write to Electro-Voice, Inc., Buchanan, Michigan.

8 EARPHONE UNIT



A new attachment called the "Earphone Aggregate Box" has been developed by the Audio-Master Corp., 17 East 45th Street, New York 17. This unit distributes sound to individual headsets. It is housed in a compact metal case and covered with a bakelite top. A 10 foot extension cord completes the unit. This attachment makes possible the use of as many as eight headsets for individual earphone listening, and can be used in conjunction with any tape recorder or radio receiver, record or transcription player, which has a detachable loudspeaker or a special jack for earphone use. For price and details, write to Audio Master.

HI-FI STAND



A handy, space-saving hi-fi stand is available from George Koch Sons, Inc., 10 South 11th Avenue, Evansville, Indiana. It is suitable for a tape recorder, phonograph, radio, etc. The stand is equipped with a bottom shelf partition and ball bearing casters. This portable stand is made of satin black wrought iron, and sells for \$10.50; overall height is about 27", the top area is 21" x 16". Additional information is obtainable from the manufacturer.

BELL AMPLIFIER



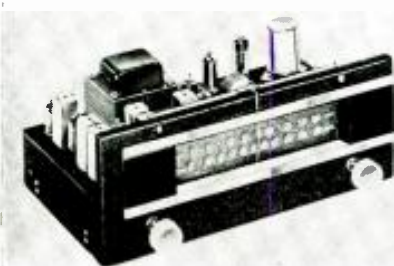
Bell Sound Systems, Inc., has announced a new high power commercial amplifier, Model 5650, which has four mike inputs and a special tape input. Separate volume controls are provided, plus treble and bass boosts and cuts. The unit has less than 3% distortion at 50 watts, and a peak power of 90 watts. Output impedances are 4, 8, 16, and 500 ohms and 70 volt constant voltage tap. Frequency response is 30 to 20,000 cps, plus or minus 2 db. The amplifier is available as model 5650-R with built-in standby relay for remote control operation. Control panel of the unit is illuminated. For complete technical and shipping information, address your inquiry to H. H. Seay, Vice President, Bell Sound Systems, Inc., 555 Marion Road, Columbus 7, Ohio.

TELECTRO TAPE TRANSPORT



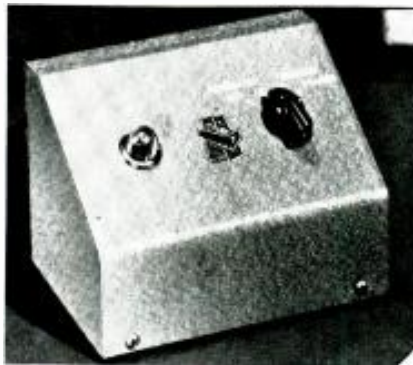
A new hi-fi tape transport unit for custom installation has been announced by Telectrosonic Corp., 35-18—37th St., Long Island City 1, N. Y. The unit is supplied with tape transport, recording amplifier, playback pre-amplifier and erase oscillator. It features speeds of $3\frac{3}{4}$ and $7\frac{1}{2}$ i.p.s., frequency response from 50 to 12,000 cycles, plus or minus 3 db at $7\frac{1}{2}$ i.p.s., signal-to-noise ratio of 45 db, less than 2% distortion, and flutter and wow of less than 0.3%. For complete data and price, contact the manufacturer.

KNIGHT TUNER



Allied Radio Corporation, 100 N. West-ern Ave., Chicago 80, Ill., is marketing the Knight Model 728 FM-AM tuner, designed for use in high fidelity music systems. This tuner incorporates such features as a highly sensitive circuit, an automatic frequency control circuit, only two controls—Tuning and Function Selectors, sensitivity on FM is 5 microvolts for 20 db quieting; AM sensitivity is 5 microvolts for 1 volt output, and it has a frequency response from 15 to 15,000 cps, plus or minus 1 db. It is supplied complete with indoor FM-AM antenna, 56" output cable and gold-finish escutcheon. Price is \$89.50 net f.o.b. Chi-cago. For complete literature and specifica-tions, write to Allied Radio.

REVERE 888



Revere Camera Company has introduced the new 888 projector-recorder synchronizer, which provides audio commentary in perfect synchronization with your slide pic-tures. It does this without the use of tabs, high frequency signals or special adapters. Any silent period of four to eight seconds on your tape automatically initiates a slide change. Slides can be advanced manually or retarded at will. An extension speaker socket allows a speaker to be placed at the screen, if desired. Revere synchronizer operates only with the fully automatic Revere 888 slide projector, but can be used with any Revere tape recorder. The projector-synchro-nizer retails at \$34.50. For additional in-formation, write to Revere Camera Co., 320 East 21st Street, Chicago 16, Illinois.

CARTER BULLETIN

Carter Motor Company has announced that mobile radio transmitters originally operating from 6 volt auto batteries may be rewired and operated from the 12 volt batteries of late model cars. This is possible if the 6 volt dynamotors armatures and brushes are replaced with their 12 volt counterparts. Carrer has prepared a new bulletin # 156A, available on request, which lists the 12 volt replacements corresponding to the various 6 volt Carter Dynamotors, according to their nameplate model numbers.

Detailed procedure, describing the con- version is contained in an authoritative ar- ticle by Ray Simon, Chief Engineer for Carter Motor Company, appearing in APCO Bulletin, official organ of American Police Communications Officers. Reprints of this article are available to those who buy, sell, use or service communications equipment. Address your request direct to Ray Simon, Chief Engineer, Carter Motor Company, 2755 W. George St., Chicago 18, Ill.

New VU Magnemite*



Spring-Motor Battery-Operated Portable Tape Recorder

Now you can consistently make professional recordings under the most gruelling field conditions. Tapes will faultlessly play back on all professional and home recorders. Ruggedly designed for maximum dependability and top-notch efficiency. Combines unlimited versatility of performance with extreme simplicity of operation. Choice of fourteen models available for every conceivable application.

Incorporates a multi-purpose VU monitoring meter for precise setting of recording level without earphone monitoring. Meter also accurately indicates condition of "A" and "B" batteries. Five single speeds as well as two, three and 4-speed models available. Units weigh only 19 lbs. with batteries and measure $6\frac{1}{2}$ " x $9\frac{1}{2}$ " x $1\frac{1}{4}$ ". Higher speed models meet NARTB standards. All recorders are guaranteed for One Full Year.

For complete technical specifications and direct factory prices write to Dept. TR:

AMPLIFIER CORP. of AMERICA

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Don't leave your recorder idle when you're "on the road." Thousands of progressive salesmen, executives, adjusters, lecturers, newscasters and others working "in the field" find they can make more calls, cover more ground, work more efficiently with a RECORDER or DICTATING MACHINE in the car.

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TURNER MODEL 58

New high fidelity dynamic miniature

VERSATILE MODEL 58, a superior lavalier microphone, meets TV, broadcasting, recording, PA requirements for performance, durability, compactness and adaptability. High fidelity Model 58 has the sensitive-but-rugged new Turner Dynaflex diaphragm, designed to resist shock, temperature extremes, moisture. Response: 60 - 13,000 c.p.s. Level -57 db at high impedance. *Write today for more information.*

MODEL 58 (high & low impedance)	} List Price	\$57 ⁰⁰
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Support clip, neck cord, 25-ft. cable		
MODEL G-4 Swivel Desk Stand	List Price	\$5.75

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Canadian Marconi Co., Toronto, Ont. & Branches.
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Ad. Aurema, Inc., 89 Broad St., New York 4, N.Y.

NEW CENTURY RECORDER



A new home tape recorder line is being introduced to the trade by Snuud-Inc., 777 S. Tripp Avenue, Chicago 24, Ill. The line features three models, the first of which is the Century. Model ST-1, pictured above. This machine features single knob control. 3-3/4 and 7-1/2 ips speeds, incorporates the magic eye recording level indicator, and has a built-in amplifier and speaker system. It sells for \$159.95. Second in the line is the Virtuoso, Model ST-2, which has dual speakers, single lever control, and automatic indexing. It lists at \$199.95. Third is the Virtuoso St., a deluxe model (Model ST-3), which incorporates 3 speakers with a separate roving tweeter, 10 watt amplifier, and VU meter; and it is priced at \$299.95. Detailed information available from Sound-Inc., above address.

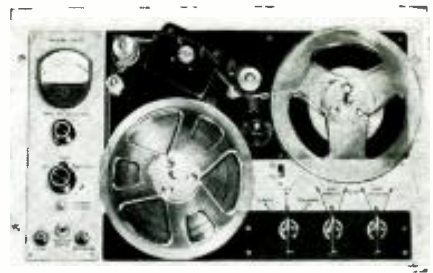
PENTRON HFW-500



Pentron's Emperor recorder is now being supplied in a blond rift oak wood cabinet, and the separate "roving" tweeter speaker included with the machine will be contained in a matching oak wood baffle, designed to store in the recorder cabinet when not in use. The price of this unit, Model HFW-500, is \$299.95; a set of 4 matching legs lists at \$8.95.

Pentron has also introduced a new stereophonic tape player which plays full-track, half-track, and stacked or staggered head stereo. Separate volume, tone, and master gain controls are provided at the control panel of the tape mechanism of this machine. A switch enables the user to play either stacked or staggered stereo, and the player is mounted in an attractive oak wood cabinet. Complete information is available from The Pentron Corporation, 777 S. Tripp Avenue, Chicago 24, Illinois.

RCA MODEL SRT-2



Development of a compact, hi-fi tape recorder utilizing transistors and printed circuitry has been announced by RCA. The recorder, Model SRT-2, according to the manufacturer, is virtually non-microphonic and hum-free; utilization of printed circuitry assures maximum design uniformity and operating precision of electronic circuits; application of electrodynamic control of speed-changing and directional functions provides operation with a minimum of moving parts; the machine has a frequency response of 30 to 15,000 cycles, it can be installed in either vertical or horizontal position, has speeds of 3 3/4 and 7 1/2 ips, features a fast forward-and-rewind speed, has a VU meter recording-level indicator, and contains an interlocking device in the record playback. This model will be available in the Fall, at a price of \$495. For further details, write to RCA, Camden 2, New Jersey.

RCA LEGISLATOR



RCA has introduced a new high fidelity tape recorder console featuring three loudspeakers in a roll-around cabinet, which has been named the "Legislator" (Model 7TRC1). It has speeds of 7 1/2 and 3 3/4 i.p.s.; features RCA Victor's new Voice-Music switch which permits adjustment to the best recording and play-back characteristics for either voice or music; has a six-tube amplifier with an output of five watts undistorted, one 8" speaker and two 3 1/2" speakers, and a remote control switch. The controls of the recorder include push buttons for play, fast forward, rewind and an extra large stop bar. A 7-foot accessory cord is provided with the machine. The console is priced at \$279.95 in mahogany finish, and \$289.95 in light rift oak finish. Write to RCA Victor, Camden 2, N. J. for additional information.

TAPE IN EDUCATION

BY JOHN J. GRADY, JR.



WITH another school year at an end, reports from numerous educators scattered in various sections of the country give assurance that magnetic recording as an educational practice is on the increase. Comments from teachers of the experiments being made with tape recording is a strong indication of the healthy condition of a new technique, which is proving of great value to instructors. This is particularly true in cases of texts requiring tedious repetition, but other instructional practices are being simplified, too, by experimenting teachers who are expanding the usage of versatile tape recording in the better instruction of their classes.

All such teachers are invited to supply information on their experiments. Please send any informative items to TAPE IN EDUCATION, TAPE RECORDING, Severna Park, Maryland. Such exchange of information will be of benefit to all members of the teaching profession.

One of the best reports received comes from Miss Sandra L. Comstock, of Lima, Ohio. The Magnetic Recording Industry owes this teacher a vote of thanks for rescuing a tape recorder from lonely isolation in a school safe and doing a real pioneering job with it. Here's what an inventive teacher—girls' physical ed. and English—did with a revived tape recorder:

Phys. Ed. Class. When the girls begged for dancing lessons, my music via tape recorder was not only effective, but did away with the necessity of changing records or worrying about the sequence of dance types as presented by radio, since I wanted jitterbug music all together, fox trots together, etc.

GIRLS' ATHLETIC ASSOCIATION: In our school, the G.A.A. traditionally presents the homecoming dance. Unfortunately, in the past few years the group had made very small profits due to the excessive cost of bands and decorations. This year, we cut down on the amount and price of decorations, thus shaving a considerable amount, but the real surprise of the day was our music, which was limited to the price of one 5" reel of tape. In conjunction with the school dance band (which "plays" free of charge), this one tape, on which were recorded the twenty top hits plus various other selections, furnished all the necessary music. Our net profit was \$118.00 in a school where \$40.00 net is considered very high.

ENGLISH CLASS: My announcement that each would be allowed to read a story from his reader and then tell it to the class and have it recorded at the same time was met with cheers. The fact that grades were being determined on the basis of their ability to talk, using correct grammar, was not too difficult to swallow, disguised in the orange juice of the tape-recorder.

PAPER-GRADING: A task that many teachers deplore (and little do I blame

them) was made easier by my dictation of the answers into my own tape-recorder. Equipped with a pair of headphones and a colored pencil, I made short work of six-weeks' tests, because the tape recorder kept going on inexorably, while in working solo, I had a tendency to let my mind wander, making my task longer and more boring. Some portions of the test, too, were so complicated that I myself would have had to use a key in the grading of them. With the key on the tape-recorder, I relaxed the strain on my eyes caused by continually glancing from the key to the papers.

SCHOOL DRAMA: When the dramatics teacher complained to me that his students were continually knocking over the drum, wind-machine, and other paraphernalia connected with the play then being produced, I suggested the use of the tape-recorder. The switch proved successful, for as well as solving the problem, it eliminated the necessity of several students operating backstage, giving more overall room and, of course, lessening the confusion.

CARNIVAL FUN-HOUSE: A desire for grotesque sounds issuing from the seventh-graders' carnival fun-house was fulfilled by the use of the tape recorder into which the would-be ghosts shouted what they considered to be ghost-like noises. A great success, too!

INITIATION: Using an idea similar to that of the seventh-graders in our initiation ceremonies, we recorded eerie music and numerous screams and placed the recorder near the entrance to the locker room, which we were using for initiation, thus placing the incoming initiates in a "receptive mood."

CHEERLEADING: This is an idea which I didn't use, mainly because I had it too late. I pass it along, however, for the person who might be able to use it. Our cheerleaders had the half-time show during football season once, and had difficulty learning the numbers in succession, not having the advantage of music as do members of the band. Instead of wearing out my lungs singing all the numbers to them myriads of times, I should have taken the recorder up to the band room during rehearsal and recorded the numbers in the proper succession.

PRIVATE TEACHING: Besides my regular teaching job, I teach piano, voice, shorthand, and typing in my home. For the music lessons, I record the complete lesson of all the advanced students. Certain parts of it they are permitted to hear; the rest is erased after I hear it. Then, I keep one special tape on each student, containing one number played all the way through from their first lesson on it to the time they either discard it or play it for a recital. This, they don't hear until their final lesson on that number. Their progress is thus presented to them.

(Continued on page 41)

THINKING Of a Tape Recorder?



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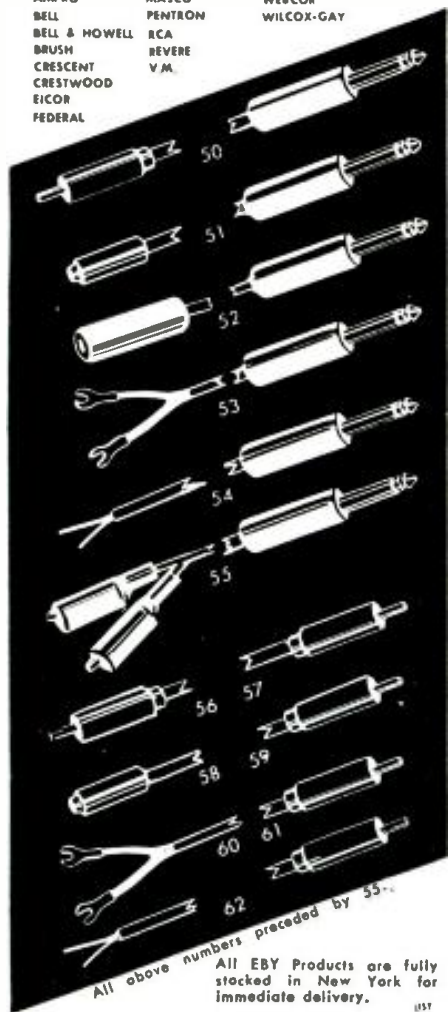
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TEEN TAPERS

BY JERRY HEISLER, National President



SUMMER is upon us, and now with high school out of the way, I can apply more time to Teen-Tapers. This will mean that I'll finally get to answer many of your letters that I have not as yet answered. Please forgive the delay and I'll try to keep on schedule from here on in. This month's mail seems to indicate that our activities are on the increase in a club wise manner.

Mrs. Frank Yeager of Bellingham, Washington, informs us that a club she works with called "Keen Teens" might want to embark on recording exchanges. She says that they specialize in dancing right now, but are going to expand their activities. The Yeagers may be reached at 300 N. Forest, Bellingham, Washington, if anyone is interested in taping with them.

I want to again thank our good friend Jim Greene of Tape Respondents International for his great plug in the club paper. Jim is forwarding us all of the names of teens joining his club. Thanks loads, Jim.

A card from Frank Malanga of the Bronx, New York, stating "Now that school is through, I would like to take up taping once again," brings up a good suggestion. Now that school is over, let's all get more active and exchange tapes. It's a wonderful pastime and a great experience.

Enough from the mailbag for now. I just want to say that all letters will be answered, and, as soon as final arrangements are made on club organization, everyone will be notified. All of your names are on file if you have written in and if you haven't, please do. Write, Teen-Tapers, c/o TAPE RECORDING Magazine, Severna Park, Maryland.

I am going to begin research this summer on how a tape club can make use of various pieces of equipment. These reports will be featured in subsequent columns and will also be made available to the clubs in the fall. The first item will be an inverter for operating a recorder in your car. The ATR people of Saint Paul, Minnesota, have been kind enough to loan us one for experimental purposes.

A Revere T-700-D has been added to my equipment and I'll do some research on the electrical remote controls available.

We will be attending the National Audio Visual Association convention, to be held July 22 in Chicago, and through this meeting we hope to relay more about our plans for school tape clubs. Our eventual goal is 20,000 high school tape clubs, and with your help we can do it. This should provide us with quite an organization next year.

I have received quite a bit of mail from various manufacturers, recently. I have a large file with information on all types of machines, tape, and accessories. This information is gathered for your benefit. It is our aim to provide members of Teen-Tapers with an organization to aid them in every

way with their hobby. If you have any questions, write to the manufacturers, or write directly to me and I'll see that you get what you're after.

Had a chance to look over Harold Weiler's new book, "Tape Recorders and Tape Recording." It is an excellent book on recording and I highly recommend it to all of you. I believe that it is beneficial for all of us to have as much background in recording as possible in order to fully enjoy it. Make it a practice to read the books.

Letters will be going out to high school principals throughout the country introducing them to Teen-Tapers. I feel certain that we'll have little trouble in getting clubs started. We offer a wonderful school activity, many services, a good opportunity for you as Teens, and all of this is available at no cost whatsoever. Please make an effort to get a club started in your school. We know you'll have a great time. Over the summer talk up the idea with your friends. If you have any trouble in getting your principal interested or don't know how to go about doing it, I suggest you follow the plan outlined in our booklet, "How To Start a High School Tape Club." If you would like us to contact your principal, send me his name and address and we'll see if we can't give you a helping hand. That's what we're here for, so please don't fail to let us be of service to you.

We hear from Mr. E. F. Bergman of the Bell Telephone Labs in New Jersey that he wants to start an adult tape club of Bell Employees. Fine idea, we believe, and if we can start other adult clubs, swell. It might be interesting for the teen clubs to correspond with the adults.

I had a card from one of our members requesting to know the whereabouts of a tape he sent in. I would appreciate it if you would write in first and do not send a tape unless requested to do so. It is extremely difficult for one person to answer tapes from many people and letters will be greatly appreciated. Incidentally, he got his tape back.

While on the subject of letters, I find that the great majority of requests state little more than the writer's name and address. If we are to establish a large working organization, we must know more about you. Please tell us your age, what you have done with your equipment, your interests and so forth. We can't be of full service to you unless we know what your needs are.

We promise that the next column will contain more information on the status of the national school clubs, plus some information on technique that we hope to obtain from summer experimenting. In the meantime, take advantage of your added leisure and put your recorders to work. Let us hear from you please, and until then. Keep 'em Twirling.

QUESTIONS & ANSWERS

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

Q—Could you help me with a problem I am having in using mike extension cords? When I record using the mike and no extension cable I get excellent results.

If I add one or more extensions I get a very annoying hum. The cables I am using are heavy duty, shielded and plastic covered. The line jacks and plugs are also shielded. The hum is also present when mixing several mikes through an electronic mixer. Can you advise me what the cause of the hum is and what I can do to correct it?—E. A. L., Shillington, Pa.

A—Some crystal mikes are of high impedance and particularly susceptible to hum, as are some pre-amplifiers, due to design characteristics. Try grounding the shield of the microphone cable to the frame of the mike. If this is already placed and does you no good, your only recourse is to an isolation transformer used with a low impedance mike. If you use a low impedance mike, get a low to high transformer and keep the transformer lead to the recorder as short as possible. The isolation would also apply to your mixer problem, in which you seem to be getting some of the ground return noise. We would suggest you look up the back issue of TAPE RECORDING that contained the article on "Hummmmm." It appeared in the June 1955 issue.

Q—When I play a tape it produces a scratching sound as it goes through the tape guide post. It seems like the recorder picks up the vibrations from the edge of the tape as it moves past the post. It is not in the recording part of the unit because I get the same sound when I play tapes that have been recorded on other recorders. This sound can be eliminated by taking a pencil and pulling the tape away from the post but this is impractical because the tape then rides up and down on the playback head.—V. E., Baltimore, Md.

A—We believe that either the pay-off or take-up reel on your recorder is seriously out of line with the tape guide. Possibly you have placed some sort of cushion under the reels to eliminate rattle and thrown the tape out of linearity. A hardened pressure pad will also cause the squealing or vibration you mention and you might check this point also. In either case, the tape is moving in an irregular manner causing the chattering effect. Check the alignment of the reels with the guide post and also the pressure pad making sure the tape can move freely. Your difficulty should then vanish.

Q—I wonder if you can tell me some way that I can make a recorder shut off when it comes to the end of a reel? The several types of home recorders in which I am interested do not have this feature built in. I would prefer to accomplish this without the use of a clock-timer if possible.—B. C., Brooklyn, N. Y.

A—The simplest method is to install a micro-switch which bears on the tape as it leaves the head for the take-up reel. The switch is connected to the power line to the recorder so that when it is open the recorder is shut-off. To keep the recorder running, tape must press against the switch arm. This is a "normally open" type of switch. It may be mounted on the top of the recorder; however, take care to run the power leads properly so that accidental contact is impossible.

Q—I was perfectly satisfied that I had found the ultimate in listening pleasure when I heard a recorder costing about \$180. I did not understand it then but what I had heard was a monaural recorded tape of Disney's "The Living Desert."

I was even more amazed when I heard a binaural recorded tape, this time on a unit costing a cool \$800. This gave the exact impression of being right in the middle of the orchestra. As you can see, I am new at this and would appreciate some information. Could you reply to the following questions:

1—Does this binaural tape recorder have to have also the pre-amp equipment to get the resulting sensation of a live orchestra?

2—Are there cheaper makes of reasonably good quality?

3—Would I have to wait until I can afford a binaural machine or could I get a monaural machine and later add a binaural head and pre-amp?

4—Is there really a great difference to the untrained ear in the quality of reproduction between monaural and binaural recordings? (I did not hear both machines at the same time and just might be over impressed with the binaural effect. In other words, is the only difference just the impression that you are surrounded by the orchestra?)

(Continued on next page)

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5—Are binaural tapes more expensive than monaural? Are they less plentiful?

6—Will a binaural machine also record and play back monaural dual track tapes?—
B. P., Attica, Indiana.

—Taking your questions in order:

1—Binaural or stereo equipment has two of everything, two heads, two pre-amps and two amplifiers and speakers. When the recordings are made, two mikes, two recording amplifiers and two heads are used.

2—The number of stereo playback units is definitely increasing and the following firms are now marketing or planning to market stereo machines: Pentron, V-M, Bell, Dynamu, Ampex, RCA, Viking, and, in fact, we feel that most manufacturers will be coming forth with stereo equipment in the not too far distant future.

3—You can get machines which may be converted later to binaural although these same recorders may now be obtained with the binaural built in at a cost but little more than if the kit is bought separately and home installed.

4—There is a great difference between monaural and binaural reproduction. Nothing to date has exceeded stereo (or binaural) in realism. Not only do you get the feeling of actually "being there" but you can detect the placement of instruments or motion from one side to the other.

5—Stereo tapes are slightly more expensive than an equal amount of music-time on monaural. For one reason there is more tape involved as both tracks are used for the same selection. At present they are also less plentiful but there is enough available to make the purchase of a stereo player worthwhile.

6—At the present time there is only one machine which is equipped to do monaural recording and playback plus the playback only of stereo tapes. All the others are playback units only and will not record. One company demonstrated a binaural recorder at a recent show but this unit will not be available until the fall. We will carry a story on it when it appears.

Q—Is it possible to get a slower speed out of the motor on my tape recorder by using a resistance or maybe an autotransformer? My present speed is $3\frac{3}{4}$ ips and I want to get $1\frac{1}{8}$ inches per second to record voice. Another thing, I have an old VU meter for a phonograph. How can I adapt it to my recorder?—L. L.

A—As the drive motors on most recorders are synchronous types any change in the voltage applied to them simply weakens their power with no control as to speed—except in relation to the load. Our only suggestion is a reduction in the capstan diameter, which is not only a rather difficult procedure but will then spoil the recorder for the $3\frac{3}{4}$ ips speed you now have.

If you have a 500/600 ohm output on the recording head circuit you can bridge the VU meter in that circuit using a 15,000 ohm potentiometer in series with the VU meter. Adjust it for 100% modulation or zero input for best recording level.

TAPES TO THE EDITOR

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

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

To the Editor:

Many people seem to think it necessary to stick the ends of tapes down with some type of "sticky" tape. As the tape moves across the tape transport, bits of this goo gets onto pads, rollers, etc., and then onto the heads; dirt then piles onto this. A recordist can eliminate this trouble on a new reel of tape, which is tacked down by some sticky material, by first removing the part of the tape which contains this substance, or by using some solvent capable of removing it.

As a suggestion to tape correspondence club members, how about attaching a long leader tape to both ends of a tape, and then turn the end of the leader sideways and slip about one full turn of tape under the flange of the reel. The leader will be held rather firmly and prevent the tape from becoming loosened. 1½ mil Mylar tape is best for the leaders because it is stiff enough that one may push back on it, and get hold of it where it winds around the reel.—Roy W. Howard, Arcadia, Calif.

To the Editor:

I would like to send my appreciation for the column "Teen Tapers" which you have included in your magazine. You show great foresight in that the teenage readers of your magazine today will be the adult readers of tomorrow. You can't realize the number of teenagers in this country who have access to tape recorders today and the number which will have access to them in the near future. To all these teenagers this column is going to mean a great deal and I wish it, and TAPE RECORDING magazine all the luck in the world.—Roy Trumbull, Corte Madera, Cal.

To the Editor:

Mr. Farkas who has written the microphone placement articles for you might be interested in a "short" formula that I devised for mike-placement some years ago . . . Mike is placed at seven-foot height, and five foot distance, for twenty-five man orchestra . . . A full orchestra uses twenty-five feet by fifteen in a general sense . . . So from a modest 5 x 7 you would move 5 x 3 feet back for every twenty-five men added . . . note that a soloist would use a one foot by two foot in theory . . . actually five to seven foot height, and "not critical" others!

Mike placement never was critical in rooms—it is always off-center-towards the dead-wall (draped), but facing the live one . . . In a room with a nine foot "roof," it is at five foot level . . . If other dimensions are: 34' by 22', the mike is according to draperies and device. Piano eight feet away nine, ten better . . . etc.—Albert R. Jordan, Jr., Meriden, Conn.

To the Editor:

Here is a constructive criticism for you. The article on recording bird songs, in a recent issue, is most interesting, but it doesn't even hint how to build or buy a parabolic reflector.

Now on page 38 there is mentioned a fine microphone, the Fentone Blue Ribbon. At the end of the article is a credit note to the Fenton Company (presumably the distributor), but no address.

The next page says use the standard code for the 3 pin Cannon connector. What's that?

This magazine is addressed to beginners in recording, at least that's what I gather from the amount of technical material printed. Now, I'm not a beginner, having tinkered with electronics for over ten years, and I'm in the third year of electrical engineering, but there is just so much that I can guess at, and no more.

The suggestions: that you put a few notes for further reading at the end of the articles and that you have a manufacturers or advertisers list at the end of each magazine.

Despite all this, I do enjoy your magazine and am religiously keeping each copy, especially for the New Tapes column for future reference. Keep up the good work.—Adam Gaus, Syracuse, N. Y.

Herewith—Parabolic reflectors are obtainable from C. W. Torngren Co., Inc., 236 Pearl Street, Somerville 45, Mass.

The Fentone Blue Ribbon mike is sold by the Fenton Company, 15 Moore Street, New York 4, N. Y.

For a three pin Cannon connector, pin No. 1 is ground (shield) and No. 2 and No. 3 are line. If only two wires are used, as is the case with most crystal mikes, Terminals 1 and 2 are ground and 3 is the line.

To the Editor:

I am a 19 year old quadriparetic patient at Goldwater Memorial Hospital, Welfare Island and would enjoy corresponding with someone whose interests are similar to mine. I am interested in jazz, popular and light classical music, painting, chess, and am a rabid sports fan.

I would appreciate any information you might be able to send me concerning the clubs and the names and addresses of the secretaries.—Roger Duell, Ward C-12, Goldwater Memorial Hospital, Welfare Island 17, New York.

The names and addresses of the club secretaries will be found on the club news page in this issue. Meanwhile, if anyone would like to contact Mr. Duell with letters or tapes we are sure he would be glad to hear from you.

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"Better turn off the motor Doc, she's gaining on me." By taping plenty of gas pump bells a running gag may be made for the tape-slide show of your sight and sound vacation.

TAKE A SIGHT AND SOUND VACATION

by

Kenneth S. Johnson

. . . . a miniature camera and a portable recorder will preserve vacation memories.

MOST of us carry a camera on vacation, but how many of us think to take our tape recorders along? Yet what could be a more logical and appropriate combination than camera and recorder? The camera allows us to take enduring color slides of the enjoyable things we do and the unusual sights we see. That is good. But by including the tape recorder we are able to permanently capture an-

other dimension: the sounds we hear. That is even better.

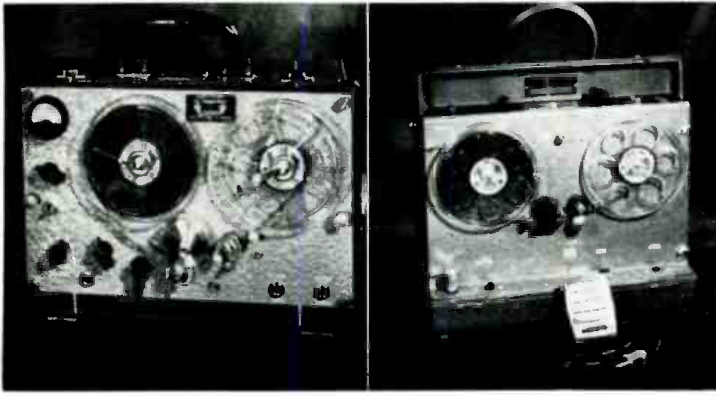
In fact, when you stop to think about it, the combination comes pretty close to perfection, doesn't it? It means that at any time in the future, by the simple process of setting up a slide projector and threading a reel of tape, we can enjoy over again the sights and sounds of past pleasures. And by dubbing in appropriate sound effects (as explained later on) we are able to supplement our pictures as words alone never can. A gorgeous color picture of a sunrise projected on your living room screen is beautiful to see. But the same picture, supported by excerpts from the magnificent "daybreak" music from *Daphnis and Chloe* is an experience never to be forgotten.

Another obvious advantage of the tape is that it never forgets. It allows us to record the carefully planned and coordinated presentation that is never possible with haphazard "off-the-cuff" commentary. You'll notice a big difference in the reception your pictures get any evening you invite friends in to share your vacation experiences.

Best of all, the added dimension of sound is inexpensive, and the fun of making the recordings will add greatly to your vacation pleasure.



The more carefully you plan in advance the more productive your tape-logue vacation will be. Before you leave, mark maps to indicate your route and make note of the important places you want to see.



Above, left: the VU Magnemite which has a spring wound motor for the tape transport and battery power for the electronics. It may be used in any position. Right, above, the Bell Cubcorder which is battery powered and resembles a small briefcase. Right: The Magnemite is being used to record the sound of a hive of Caucasian honey bees.



Convinced it's worth a try? Then let's see how little extra equipment you'll need and just how to go about doing the best job the first time.

FIRST, FLAN. While there's a great deal to be said for doing things spontaneously, you'll probably be better satisfied with the results if you'll do a little planning and work up at least a brief "sight and sound" script, or scenario, before leaving. This will give you at least the basic framework and guide you in obtaining a coordinated story.

As a possible starting step, let's get out the road map and outline the route we're going to travel, with heavy bright red crayon. When copied with your color camera and a close-up lens this will be the first slide and will set the scene for your travelogue. Later on you may want to make additional close-up shots of particular areas on the map, but these can be made after you get back home.

Now look through the travel guide books for likely picture subjects along the route you plan to follow. For example, the capitol and other government buildings at Albany, New York; the gravestone of the original "Uncle Sam" in an old cemetery at nearby Troy; the races at storied Saratoga Springs; historic Fort Ticonderoga; the breathtaking scenic views along Lake George and Champlain.

Perhaps you'll visit Quebec, in which case you may want to see and photograph the churches, quaint homes, roadside ovens and picturesque farms of the area.

If there is a summer theatre in your planned vacation area you may well have an excellent chance to capture the voices of famous actors and actresses on your own personal tape. Things are usually much less formal at summer theatres. Performers who would be practically inaccessible in the city, under normal circumstances, are much easier to approach when playing "on the road." One time several summers ago I was able to get an excellent taping of the conversations of several famous movie and television performers by the simple expedient of carrying my recorder into a diner near the theatre.

Yes, sometimes it take a bit of nerve to get what you want. But I always figure that it never does any harm to ask; the worst they can do is refuse; and most people, whether they admit it or not, are pleased to have you show a special interest in them.

What about your color camera? If you use the new high speed color slide film, like Anscochrome, any camera will do, providing the light is reasonably good. And with a flash

attachment, you are set for pictures anywhere, even deep in a cave, or indoors after dark. If you're thinking of buying a camera, you may want to consider one of the good, but inexpensive 35mm or folding models like those shown in these pages.

So much for the sight, now how about the sound. Here, again, an advance list of the sounds you may expect to encounter and would like to record will come in mighty handy as a reminder. What sounds will best tell the story of the hurry and bustle of the first day's early-morning preparation and departure? The ringing of an alarm clock, the general household hubbub, the clatter of dishes hastily washed, the slamming of the back door, the starting of the car motor? Any one or two, or a mixture of all of them, will make ideal background sound for the showing of the map slide, a picture of the car being loaded with luggage or a shot of the family piling in.

To establish the idea of travel and the sounds of movement, record some of the conversation inside the car as



Problem: find the tape recorder. Actually there are two of them in this picture. At extreme left is the Magnemite, in front, the Cubcorder. Both have the appearance of a fine piece of luggage.

What do you from a

Extra playing time?

At economy price? Famous *acetate-backed* "Scotch" Brand Extra Play Magnetic Tape 190 also offers 50% more recording time—as much as found on 1½ reels of standard tape. New, high-potency oxide coating assures recordings of increased frequency range. New economy price saves you 28%.

Economy?

The favorite tape of sound engineers, the world over, famous "Scotch" Brand Magnetic Tape 111 cuts tape wear in half, thanks to exclusive silicon lubrication. Tape glides smoothly over recording heads to give flawless sound reproduction time after time. Buy it now at a special new low price!



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want magnetic tape?

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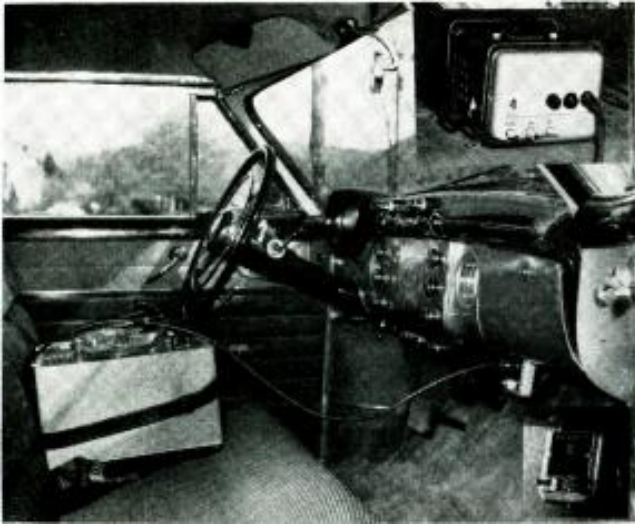
New "Scotch" Brand High Output Magnetic Tape 120 guarantees greater dynamic range recordings... with harmonic distortion reduced to a minimum. 133% more output permits brilliant sound reproduction. A must for hi fi fans. Also available with Polyester backing at slight extra cost.

Extra strength?

New "Scotch" Brand Extra Play Magnetic Tape 150 is made to take even hardest wear—thanks to its tough, durable "Mylar"* plastic backing. In addition to super-strength, new 150 Tape offers 50% more recording time on a standard-size reel, and famous "Scotch" Brand recording quality.

*"Mylar" is a registered DuPont trademark.





Any recorder may be used in the car if an inverter is used to provide 110 volts from the car battery. Insets show the ATR Inverter mounted in the trunk and the small control panel for the dash. The recorder should be strapped to the seat to take care of sudden stops.

you're traveling along the road. Hold the microphone out the window and get the sound of the wind and other cars passing by. Run the microphone out under the hood and tape some of the sound from the engine.

At the gas station, record the ringing of the bell on the pump and, perhaps, some of the general conversation and road directions from the gas station attendant.

Incidentally, although humor is difficult to handle, it can be very effective when done well. One of the best humorous devices is the running gag. For example, if you want to establish the fact that your car consumed inordinate amounts of gasoline, be sure you get plenty of tapes of gas pump bells. This can later be cut apart and spliced in at appropriate places. Take the gas station attendant into your confidence and have him help by speaking such lines as "Turn the motor off, she's gaining on me" and so on.

When you edit your sound script to get the tape in final form, try splicing short bits of the ringing of the gas pump

bells at unexpected and illogical points. For example, run a few feet of "gas pump bells" in the middle of a recording of church bells. Add pump bells as the interruption to a conversation between yourself and a new acquaintance, or after a few simulated snores to get across the idea that the gasoline problem was with you day and night.

By the way, it's easy to record conversations with gas station attendants, traffic policemen and others, from the driver's seat. Simply clip a small crystal microphone to the door handle or steering wheel. The other party won't even know he's being recorded unless you tell him.

The more you think about it, the more sight and sound possibilities will come to you.

What about tape recording equipment? Anything you now have will probably do very well. It doesn't matter whether yours is a single or dual track recorder although if the latter, you'll want to plan on using only one track on each reel so that you will be able to edit without destroying any sound effects. Certain accessories will add to your convenience. And if you're planning on purchasing a new machine you may find some helpful suggestions here.

With any of the regular 110-115 volt recorders you can, of course, operate wherever there is an electrical outlet. In short, you are pretty well covered as far as any area wired for electricity is concerned. You can plug into a light socket at the band stand and record the music in the Governor's Garden along side the Chateau Frontenac in Quebec or (with proper permission) tape a few minutes of a session of one of the state legislatures. For added convenience you may want to have 200-foot extension wire for connecting the recorder to fairly distant electrical outlets. Another very handy accessory is an extra-long microphone wire—perhaps 100 feet, or so. This in conjunction with the 200 foot power extension, will allow tremendous flexibility in using your recorder. With the extra-long microphone wire you'll need a low-impedance microphone, and a low to high mike transformer at the recorder unless your machine has a low impedance input.

I remember one occasion when I needed both the extra-long mike wire and power line and I'd like to cite it because it proves two things: first, that people, even total strangers,



This is a picture of the highest falls in North America. Good as a picture in any series of vacation slides, but how much more effective if the showing is accompanied by a sound recording of the actual roaring and splashing of the water! The falls shown in the picture is Montmorency Falls in Quebec, Canada.



A good color camera need not be expensive or difficult to use. Some 35mm miniatures, such as the popular Ansco Memar, come in handy kits which contain all essentials in a handy traveling case.

will go to great lengths to cooperate with you if they are convinced of the seriousness of your purpose; second, that a little ingenuity will often surmount seemingly impossible obstacles.

While on a recent visit to Quebec, which is a city of venerable and beautiful churches, I decided I'd like to record the ringing of the carillon, some of the choir music and bits of the sermon as background sound for pictures of a famous cathedral and some of its colorful stained-glass windows. Obviously, this is the kind of project that calls for preliminary planning and consultation with the proper individuals.

Approached beforehand in this way, the pastor was not only receptive to, but fascinated with, my plans and graciously went to great extremes to help me carry out the things I wanted to do. The church sexton helped me to string the microphone to the bell tower so that I would be prepared to record when the carrillonneur came for rehearsals. After this part of the recording was made we strung two microphones, one to the pulpit, the other to the choir loft, for these parts of the recording were to be taped while the actual service was in progress. During the service I sat unobtrusively at one end of a front pew, inserted the jack for the choir microphone into the recorder input and taped a complete anthem. After that I plugged in the line from the pulpit microphone to record sections of the sermon. All the while the recorder (a Webcor) was tucked away, on the floor under the seat and bothering no one. The power that turned the machinery came through an extension cable plugged into a wall outlet 50 feet away. At the conclusion of the service I collected my various items of equipment, thanked all concerned and was on my way.

Admittedly this was an extreme case and the chances are that you will seldom want to get involved in a project so elaborate. I mention it only to show what can be done. Besides, I'm pretty proud of that recording and get quite a kick out of the comments of those who hear it.

One problem that occasionally comes up when using a long microphone line or power cable, or both, is that you are at a considerable distance from the recorder and so from the recorder's "on-off" switch.

In some set-ups you can, of course, turn the recorder off and on with a microphone switch. At other times you may

post a helper at the machine or start and stop the recorder by removing and replacing the power line plug at the wall socket.

The point of all this is not so much to belabor the obvious as to suggest that there are few "impossible" situations or problems; most can be overcome by a little original thought and ingenuity.

All right, you say, but how about those occasions when you'd like to record at locations where ordinary a-c power is not available; maybe at the beach, or at a picnic. What do you do then, you ask? Well, one good way to get around this is to use your car battery as the power supply.

For this purpose you will need a device called an inverter, which changes your 6 or 12 volt car battery current to the proper voltage for operating your recorder. One excellent device which I have tried in my own car and found thoroughly satisfactory in every respect is the A.T.R. Inverter. It is compact, attractive, easy to install and may be left in the car permanently, if you wish. For those who wish a rotary type converter we suggest the Carter.

With the inverter installed you may make recordings en route, while the car is in motion over the road. This is a feature which makes the inverter of great value to reporters, salesmen, physicians and all who dictate reports while traveling from one call to the next. Of course, you may record with the car stopped and the engine turned off, too; in which case the battery drain is small for short periods of intermittent use.

For the ultimate in convenience and complete freedom from the restrictions imposed by the lack of available electrical current, you may want to investigate the advantages of one of the lightweight portable recorders with self-contained power supply. There are a number of these on the market. Obviously it would have been impossible for me to investigate all of them thoroughly. However, I have tested



In the great unfinished Basilica of Ste. Anne de Beupre in Quebec you can get very good sound of the choir by taking your recorder to the organ loft. It's always easiest and best in cases like this to check with authorities beforehand.



A color slide that shows the route you followed is an important part of your travel record because it helps your viewers to visualize the relationship of the different places. In copying the map, use two lights for even illumination and a meter to help you get correct exposures.



You can splice in all manner of special effects on your travel tape after you get home and before you do the editing. Rain dripping on a tin roof can be simulated as shown here. Almost any special sound you want can be had on records.

two of them (Bell Cub-Corder and Vu Magnemite) under the severest conditions I could devise. It was my thought that any readers who contemplated the purchase of this type of tape recorder might be interested in the findings.

Both of these machines are small and lightweight. They feature modern design and look for all the world like pieces of smart luggage.

The Cub-Corder (shown in the accompanying illustrations) is fashioned in the new slim, tapered silhouette. Its case is of a plastic material of leatherlike color. It has a hinged door which may easily be removed if desired. This recorder is powered by two batteries: a 4 volt non-spill rechargeable wet battery and a 67½ volt dry battery.

There is not space here to go into all of the details of this machine. But I would emphasize that all controls are handy and easy to use; the mike is equipped with a switch button that starts and stops the recorder; recording may be done at 3¾ or 7½ i.p.s. tape speeds. The machine may be had with either dual or single track heads.

Among the many nice features of the Cub Corder are the monitor built into the microphone for play back-listening; a built-in transmitter which allows you to play the recording through a radio set without making any kind of connection to the set itself; and its extremely light weight.

The other very excellent portable recorder which I have tested personally is the Vu Magnemite. This, too, is compact, attractive and capable of producing excellent sound quality under even the most trying conditions.

The Magnemite uses three 1½ volt dry cells as "A" batteries and one 90 volt "B" battery as the source of current for its electronic system. These have an operating life of about one hundred hours. The tape transport mechanism is powered by a Swiss steel spring motor, which is crank wound. At first I was a bit doubtful of this arrangement but my experience with the recorder under actual recording conditions quickly changed my mind. The Magnemite runs for about six minutes on a single winding. A warning light goes on automatically to indicate the need for rewinding. Rewinding may be done at any time—even during actual recording.

Neither of these recorders is exactly cheap, but they are the quality products of reliable makers; they should give lifetime satisfaction and, on that basis, are certainly priced fairly.

After you've returned from your trip and you've had an opportunity to select the color slides you want for your tapelogue, you'll probably discover spots where a particular bit of added sound could be used to advantage. Perhaps there was no electrical power available at the picnic spot where you cooked breakfast and now you'd like to have a bit of sound to simulate the cracking of fire or the frying of bacon. Maybe you would like to add the gentle swish of waves lapping a sandy beach or the roaring crescendo of angry breakers crashing against a rocky coast.

Some of these may be simulated; the crackling fire by crumpling a sheet of cellophane; the rushing water by stroking a drum head with a whisk broom; thunder by shaking a square of flexible sheet metal, and so on. Other sound effects as well as mood music may be obtained on special tapes, or phonograph records. Bits of music from symphonies are excellent for creating moods.

If you have a record player and amplifier, or know someone who does, you can easily transfer sound directly from the record by running a connecting cord from amplifier output to the input of your recorder. Or you may transfer sound from one tape to another by connecting the input of the "receiving" recorder to the output of the "transmitting" recorder.

When it comes to the final showing of your tapelogue you sit back, relaxed, in your living room, surrounded by your friends and change the slides on the screen according to your pre-arranged sound cues.

I hope you'll decide to make your next trip a "sight and sound" vacation. The added pleasure you'll have will make the trip itself much more memorable. And the applause and plaudits you'll receive the first (and every) time you show the final result to your friends will make you feel only slightly less of a colossal impresario than Toscanini, Lowell Thomas and Cecil DeMille all rolled into one. Have fun!

Taping Beethoven's Sixth

by Jack E. Gieck

*. . . . backstage at a
Mercury Records
recording session*

Paul Paray and the Detroit Symphony Orchestra as seen from the recording director's booth. Only one microphone was used for the recording session but it took a day of listening to put it in the right spot.



WHEN the telephone rang the other evening the voice on the other end was Arthur Perkins, assistant manager of the Detroit Symphony Orchestra. He wanted to know whether I would like to attend the orchestra's fall recording session with Mercury Records. Putting such a question to an inveterate audiophile and amateur recordist is, of course, roughly equivalent to asking a rabbit whether he would care to visit a cole slaw factory. I told him I would.

The session was to be held in Detroit's old Orchestra Hall, which is no longer used for public concerts but the acoustics of the place are ideal for recording. On the appointed morning I parked my car beside the auditorium and walked around the back to the stage entrance where I found Arthur. Parked in the alley near the door was the portable sound truck of Fine Sound, Inc., of New York, which firm does all the recording and engineering for Mercury.

Inside the truck, Art introduced me to recording engineer Aaron Nathanson who was busy unpacking fresh boxes of Audiotape. Only virgin tape, he explained, is used for recording.

Aaron presides over some \$60,000 worth of equipment on the truck. Lining one wall are two massive Fairchild tape recorders which operate at 15 inches per second and employ 10-inch aluminum reels holding 2500 feet of 1/4-inch magnetic tape. Both are single track machines and they have three separate heads for recording, playback, and erasure, respectively. This permits monitoring the tape off the playback head while recording.

Next to the Fairchilds near the back doors of the vehicle is a small desk bearing an intercom; this is used to communicate with the recording director and the conductor inside the auditorium. Opposite the desk on the other side of the

truck is an amplifier panel whose face is a maze of dials, meters, jacks, and patch-cords. Inside are two modified Altec Model 322T amplifiers (though Fine Sound sometimes employs McIntosh units). Adjacent to this panel is a cabinet containing tape, several models of Telefunken microphones, spare amplifiers, tubes, and other spare parts.

The truck has been all over the world on recording missions. To reduce freight costs the body is made entirely of aluminum. Although it was drawing its line current from the City of Detroit on this assignment, the truck is equipped with its own motor-generator set so that it can operate independently if necessary. This is a big advantage in Europe where the voltages and cyclic rates of local power houses often vary with the whims of the city fathers.

While we talked one of the tape recorders was turning and music was filtering out of the intercom speaker. The back door of the truck suddenly opened and David Hall stuck his head inside. Dave is recording director of Mercury Records' Classical Division and, despite his youth, is a well known authority on recorded music and a writer on musical subjects.

"How are you doing, Aaron?" he wanted to know.

"All set," was the answer. "How's the monitor?"

"Good," Dave replied, "neat but not gaudy."

Thus assured, Aaron stopped the recorder and began threading in a new reel of tape.

We had a few minutes before the session was scheduled to begin and I followed Art and Dave into the auditorium along the stream of cables which flowed through the stage door. Dave ducked through a small door off the corridor into the cramped, cluttered director's booth which looked out on the auditorium through a double plate glass window.



Recording Director David Hall watches the conductor intently as he follows the symphony score inside the soundproof booth. After the music had been taped it was immediately played back and the marks made on the score were used for critical listening.

Inside the room, which serves as a janitor's closet most of the time, were a small table, three folding chairs, and the huge Altec monitor speaker consisting of a 15-inch woofer with a coaxially mounted exponential tweeter. On the table were an intercom and a book of symphony scores.

Through the glass I could see the orchestra gathering on the stage. Conductor Paul Paray was bent over a score on his music stand. Fifteen feet above his head and a few feet out into the auditorium a single microphone was suspended. Out of the monitor poured a pandemonium of tuning sounds and the nameless warmup passages to which musicians are addicted.

To create as relaxed an atmosphere as possible, Mercury uses none of the lights, buzzers, or other signalling paraphernalia which are so popular in some recording studios. An intercom speaker near the conductor (connecting him with the sound truck) was the only equipment in evidence besides the microphone.

At last conductor Paray mounted the podium and the orchestra became silent. Except for a few instrument cases and the musicians' coats and hats, the auditorium seats were empty—people not only make little noises that would be picked up by the microphone but, as I learned later, they soak up desirable reverberation.

Glancing at his watch, Dave Hall opened his score to the beginning of Beethoven's Sixth Symphony and sat down at the table. Then, with almost disappointingly little ceremony, the recording session got underway.

"Give him a 'stand-by', Aaron," Dave said into the intercom.

"Are you ready, Mr. Paray?" Aaron's voice came out of the stage intercom (which I could hear over the monitor).

"Yes," said the conductor.

"Stand by, please."

Out in the truck Aaron started both tape recorders (simultaneous tapes are always taken for safety) and waited six seconds for them to come up to speed. Then he depressed the intercom key again.

"Speed," he announced.

This was Paul Paray's cue to start time he felt like it. He wasn't rushed—there was plenty of tape. Then the baton came down and the director's booth was suddenly inundated in the first movement of the *Pastoral*.

Dave bent over his music, following carefully all twelve lines of the score as he seemed to absorb every note that poured out of the monitor. Occasionally he made pencil marks on the score: an arrow—a question mark—the scribbled word, "noise."

Orchestra manager Howard Harrington slipped into the room and sat down beside him. A reed solo was issuing from the monitor.

"He's a good oboe player," said Dave appreciatively. Harrington nodded.

"Now we're getting into this rough section," Hall noted, glancing ahead to more than a page of sixteenth notes in the string section.

"Nice playing job—very good texture," he declared exuberantly as the violins ate their way through the passage.

When the movement had concluded Dave asked Aaron to rewind for playback and Paray came into the booth to listen with him. Together they would follow the score, listening especially critically at all of the points Dave had marked, to determine whether any of the music would have to be repeated. Then, back in New York, the final master copy would be edited.

I went out to the truck to ask questions while Aaron played back the tape.

"I notice you use only one microphone," I said. "Is that the *Telefunken* job I've heard about?"

For answer he opened the cabinet and removed a duplicate Telefunken from its plush-lined case and handed it to me. I fingered the microphone gingerly (they cost around \$600 apiece). The business end was about the size of a plum on the end of a handle perhaps six inches long and less than an inch in diameter.

"There is a preamplifier built into the handle," Aaron explained. "The output of the mike is down about 60 db and the preamp raises it to—20 db."

"Do they use printed circuits?"

"No, just a lot of very fine wiring. No transistors either—there's a miniature vacuum tube inside."

"I understand it has an extremely high signal-to-noise ratio," I remarked, returning the mike to its case.

"Noise is about 70 db below signal output," he replied.

"What principle does it operate on?"

"It's a two-condenser microphone—it has two different pickup patterns: 'omni-directional' which is essentially spherical, and 'cardioid' or heart-shaped. But we calibrate every one we get."

"Which pattern are you using in this auditorium?"

"'Omni-directional'—to pick up as much reverberation as we can."

I had noticed inside that no draperies or other deadening material had been hung in the auditorium. In fact, a hinged plywood reflector had been erected behind the orchestra to "hide" the stage curtains acoustically. Reverberation had been measured previously at roughly 1½ seconds (this figure varies, of course, with the frequency and the volume of the sound source).

Since a single microphone is used, its placement, as might be expected, is quite critical. Moving it just a few inches from its preferred position will, Aaron pointed out, seriously alter the balance between the strings and woodwinds. The latter may become over-prominent, or the necessary presence of string tone may be altogether lost.

Because the ideal microphone location can only be found by trial and error, the recording crew had come in during an orchestra rehearsal earlier in the week and had spent the entire day finding the optimum spot. Once this location is established, the mike is never moved.

Nor is the volume dial ever changed during a recording. Before the session begins, the orchestra is requested to play the loudest passages in the score and the gain is adjusted so that the tubes are not overloaded under these conditions. Thereafter, no one touches the controls. And when the tape

signal is transferred to the master disc it receives no compensation other than the addition of the RIAA curve.

Fine Sound and Mercury feel there is a strong case for the single microphone. Not only does it provide the equivalent of "concert hall listening" (avoiding the artificiality of suddenly emphasizing the horn section, for example, by dropping a boom mike practically down the throat of a baritone euphonium) but, they point out, there are electronic advantages that result in higher recording quality.

Fine Sound avoids both mixer stages plus the booster amplifier. The output from the microphone preamp goes directly into the line amplifier (which provides 68 db gain) before entering the Fairchild recording amplifier.

A more subtle disadvantage of multiple mikes, Fine Sound explains, is the occasional reinforcement and cancellation of certain frequencies which occur when the same sound is picked up at more than one point in an auditorium—where it may be exactly out of phase or exactly in phase with the sound entering another microphone. Furthermore, there is frequently a difference in perspective, or presence, between the several microphones because of the variation in pickup distance with respect to the instrument groups.

Finally, Mercury and Fine Sound feel that there is a fundamental difference between their philosophy of recording and that of the multiple-mike advocates. They feel that the *conductor*, not the engineer, should be master of the situation. Since it is the conductor's interpretation of the music that they wish to record, he, not the recording technician, should balance the orchestra.

I suppose it depends on what you like to listen to. I have friends who boost the bass in their home systems to a level that would make a contrabassoon player run away and hide. But no orchestra, praise Euterpe, ever sounded that way.

When Aaron switched his monitor back and forth between the microphone and the tape output I couldn't detect any difference between them. Either one sounded like the best seat in the house to me.



Left: the portable sound recording truck of Fine Sound, Inc. is loaded with equipment. Here it is parked in an alley behind Detroit's old Orchestra Hall ready to record the music from inside. Above: recording engineer Aaron Nathanson checks one of the Fairchilds inside the truck. The monitor speaker is above the recorder.

How To Record Woodwind Instruments

by

L. L. Farkas



Photo Courtesy CBS

John Wummer, the New York Philharmonic Symphony's solo flutist, owns three flutes for concert work, one each of gold, silver and platinum. The oboists are seated next to him. Because the oboe retains better pitch than any other orchestral instrument, it is the job of the solo oboist to give the correct pitch to all the other instruments before a concert.

WOODWIND instruments, such as the clarinet, the flute, the piccolo, the oboe, and the bassoon form not only an important part of symphonic orchestras, but they are also popular as solo instruments. It is to our interest therefore to record their tones as well as possible.

In line with the general rule of examining the construction of the instrument as an aid to making the pick-up, let us begin with the clarinet and see how it produces its tones.

It consists of a cylindrical tube along whose length are located holes which can be opened and closed at will by means of stops and keys. A tone is produced by blowing air past a thin, flat, wooden reed set on the underside of the mouthpiece. The reed vibrates and in turn sets up vibrations within the cylindrical tube, thus creating the sound. By opening and closing different stops along the tube, the relative length of the cylinder is changed, producing different tones.

When the clarinet is being played a great deal of the

sound comes out through whatever holes are left open. This means that the sound waves will emerge from different spots along the length of the tube. Theoretically then, in order to pick up the tones to best advantage, either the microphone or the instrument should be shifted so that the sound will always emerge directly in the center of the pick-up beam.

However, this is far from practical. Instead the clarinet is held so that the midpoint along its row of stops is approximately opposite the center of the microphone beam. In this way the tones reach the microphone with about the same intensity. Then if some of the lower tones do not have enough volume, the clarinet can be shifted so that the particular spot producing the sound is closer to the microphone. Actually this is not required for normal playing, but when subtone effects are used, then it is important to shift the clarinet so that all the tones will be heard.

For the normal solo, the clarinet should be held about two feet from the microphone, with the tube in a horizontal position across the pick-up beam. When the clarinet is used for hot, swing type music then its tones have greater volume and the general staccato effect of the music gives the high pitched tones greater intensity. To obtain a good pick-up in this case the microphone should be moved back, to five or six feet. Of course when soft passages come along the player will have to move in and this is an inconvenience, but it is better to do so than to have low passages of good quality and the other parts distorted. With this type of playing the instrument does not have to be held in a horizontal position; the bell can be raised only slightly and can be facing directly toward the center of the microphone beam.

Subtone effects on the clarinet must be played very close to the microphone. This is necessary because the notes produced by a combination of lip movement and damped reed vibrations are very low in intensity. The instrument should be held in a horizontal position within the beam and about six inches from the microphone. If you have a chance to make a trial recording, you can easily tell if the clarinet is too far away by the loss of tone definition. When it is too near the microphone the tones will vary quite a bit in volume; those emerging directly in front of the microphone will be so intense that they will distort and blur, while those that originate outside the pick-up beam will be very low in volume and may be lost completely. Remember that the microphone pick-up beam generally narrows as you come closer to the microphone; hence the possibility of easily falling outside of it. For best results, start at six inches and move closer if you wish, but stay beyond the point where the tones will distort. And when you play, you will have to weave back and forth in front of the microphone so that

Top: the correct position for an accordion pick-up. The keyboard should be held toward the microphone. This permits the bass to record even though the higher notes are favored by this position. The distance from the mike is about four feet. Charles W. Smith, who plays all the instruments shown here posed for the pictures. Upper center: the microphone here is a bit low but should be satisfactory for a jazz pick-up for the clarinet. The normal position is about two feet from the mike with instrument horizontal and across the pick-up beam. Lower center: this is a good position to record the flute as the air flutter will be above the microphone and will be subdued. A minimum distance of two feet from the mike should be maintained. Lower: a distant type pick-up on a piccolo.



the hole emitting the lead tone is always in the center of the microphone beam. It takes a little practice to do this smoothly, but the results are well worth the effort.

In bands and orchestras, different clarinets play their part in different tonal ranges to create the desired chord. The lead instrument is then placed directly in front of the microphone, while the accompanying clarinets are set on either side. By setting these three clarinets about three to five feet away from the microphone, their tones can be balanced with the lead voice slightly predominating to accentuate the melody.

The bass clarinet, also called the basset horn, belongs to the same family as the concert clarinet, but it is larger and plays an octave lower in tone. It still has the long cylindrical tube, but the top end is slightly curved and leads to the mouthpiece, while the lower part is turned up into a bell-like opening. It actually looks like an overgrown saxophone.

Solos from the bass clarinet should be played without raising the bell and from a position at least two feet from the microphone. Do not come nearer than that or the bass notes will distort. Conversely do not stand farther away than approximately four feet for those same bass notes will not carry very far and will very quickly lose their fullness and definition as the distance is increased.

When this instrument is used in the orchestra, it is generally located on the side of the clarinets, at a distance of approximately five feet from the microphone. In this particular role, a solo tone is not required; hence the bass clarinet can be placed farther back than on the solo position and still produce sufficient volume for its notes to effect the required blend of tones with the other instruments.



Quartet with Elliott Lawrence at the piano supported by an oboe, a bassoon and a French horn. The tones of the bassoon are relatively low and it should be closer to the microphone than the piano or horns. The tones of the oboe are loud and have a thin, penetrating quality. It may be positioned from two to five feet from the mike without affecting the tone quality.

Now let us examine another important woodwind instrument: the flute. It consists of a narrow cylindrical tube of wood or metal, jointed in several sections. Along its length are located apertures which can be opened and closed by keyed stops. The flute has no mouthpiece. Sound is produced by blowing across a mouth opening. The column of air produced by the lips, known as the air reed, breaks across the sharp outer edge of the opening, setting up an air flutter which is transmitted to the air inside the tube, thus producing sound.

The tones of the flute are fairly high and have a penetrating quality. These high-pitched notes and their harmonics thus have a tendency to cause distortion when produced too close to the microphone. To prevent this you should keep the flute at least two feet away from the microphone. If the instrument is held too close to the pick-up unit, the distortion will be characterized by a pronounced reinforcement of certain notes. In addition the rushing sound of the air blown past the mouth aperture will be emphasized and will thus mar the overall quality of the tones.

Although the flute has piercing tones in its solos, the actual volume is not very high and therefore its tones can be easily covered up by the tones of other instruments. To overcome this when the flute is used in an orchestra, it is placed in the direct beam of the microphone, at times right in the midst of the clarinets. The correct position will be found when the tones of the flute are heard but do not predominate.

The piccolo is built along the same lines as the flute, but it is smaller in size and consequently is pitched an octave higher.

The tones of the piccolo have quite a few overtones. This, plus the fact that its tones are already high, make it necessary to keep it a good distance from the microphone. On a close perspective solo, you should place the piccolo at least three feet away. A closer position would produce the type of distortion noted when the flute is in too close.

In the orchestra the piccolo is generally located next to the flute. This slightly off-center position compensates for its higher intensity and produces a good blend when the two instruments are played in a duet.

Another well known woodwind instrument is the oboe. While similar to the clarinet, its construction is more complicated. It consists of a short metal tube which has finger holes along its length, a set of keys used as in the clarinet, plus two automatic octave keys to assist in reaching the higher notes. Two thin pieces of cane forming the mouthpiece are bound to the metal tube by many turns of waxed silk. Blowing past these reeds sets up the vibrations which are amplified by the column of air in the metal tube and in turn creates the sound emanating from the bell and holes of the instrument.

The tones of the oboe are not only loud, but they have a thin, penetrating and somewhat nasal quality. As a result the close pick-up distance is not critical. For a solo the microphone can be placed only three feet away; it can also be as far back as five feet without affecting the tone quality. While playing, the oboe should be held with the cylinder slightly inclined, the bell down, and the holes facing directly toward the center of the pick-up beam.

For a distant perspective, the oboe should be placed from ten to twenty feet away from the microphone. In the orchestra it generally takes its place on the extreme end of the woodwind section, from which position enough of its tones can still be heard to produce the desired effect.

The bass clarinet (center left) set next to the clarinets and behind the fife and flutes. This instrument plays an octave lower than the concert clarinet. It should be positioned, for solo recording, not closer than two feet nor farther than four feet from the microphone. If too close the bass notes will distort, if too far, the bass tones will fall off and not record well.



NBC Photo

A variation of the oboe is the English horn. It is actually the same instrument but with its tones pitched an octave lower. The same method is used in the pick-up except that the distance from the microphone is decreased to compensate for its lower volume.

The next instrument to be considered is frequently called the oboe's big brother. This is the bassoon. Basically the construction of the oboe and the bassoon is about the same, with the exception that in the bassoon, the tube to which the double reed is attached is curved and the instrument is much larger in size. The low notes that it produces fulfill the same purpose in the woodwind section as the bass viol does for the strings. Its peculiarity of tone also makes it useful for creating grotesque effects.

The volume of sound produced by the bassoon is fairly low. For that reason, when the bassoon is used for solos, it should be played about two feet from the microphone. With the orchestra, it is usually placed behind the clarinet section. Then, as a solid rather than a loud tone is required, it produces sufficient sound from that position to form the required background for the woodwind section.

The last instrument to be considered is the accordion. While not a woodwind instrument in the strict sense of the word, it is nevertheless a reed instrument. Air is forced against free reeds of different thickness by the pressure of the bellows to produce sound. Stops on each hole where the reeds are located are controlled by the action of keys on the accordion keyboard. These select the particular reed to be used and hence the tone to be produced.

Now most of the tones of the accordion come through the openings above the keyboard, so naturally when recording its tones, this part of the instrument should face

the microphone. However the bass notes of the accordion come out from the other side of the bellows, through stops located there, so that to pick them up directly would be impossible without also losing the melody. Fortunately, enough of the bass tones are heard, even when the higher notes are favored, to furnish the necessary background and accompaniment without changing the initial position of the instrument in relation to the microphone.

The distance that you should use for accordion solos is approximately four feet. Any performance closer to the microphone than that will have a tendency to blast and thus produce distortion in the recording. You should also be careful, when working the bellows, that you do not bring the high keyboard end of the instrument too close or again blasting would result. You can recognize the condition on a monitor speaker by a distinct rise in volume each time the bellows are expanded.

On the average orchestra set-up, the accordion is placed in a fairly close position but slightly off-mike so that its tones do not blast. For longer perspective it can be placed as far as twenty feet from the microphone, depending of course on the acoustics of the room. At that distance, however, a slight shift either forward or back will change the quality of the tones picked up and recorded. In such a case a test recording is useful to set the position of the accordion for the desired results.

There are of course other woodwind instruments, but their construction and operation is sufficiently similar to those described that you should, by comparing the methods of pick-up indicated, be able to derive the correct set-up and obtain a recording of good quality. By making a few test recordings you should be able to get good results.



Build this Tape Recorder Center

by L. Stephan Girsch

The finished cabinet housing the recorder, external speakers and storage space. The recorder can be removed for portable operation.

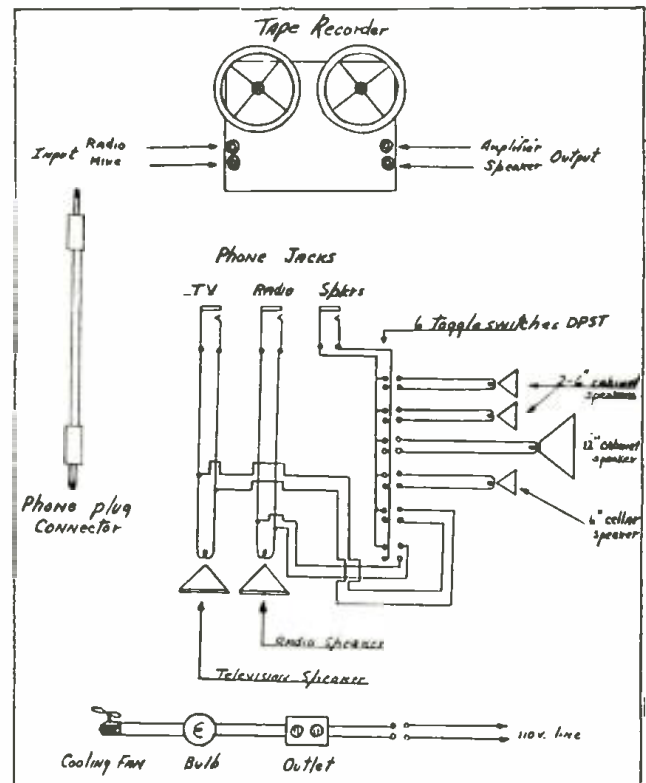
IN the beginning, our tape recorder was a source of pleasure. Especially when we discovered we could connect the input of the recorder to the TV speaker and record some of the fine music such as the Firestone Hour and other programs. We could also connect the TV speaker to the recorder output and enjoy programs long after the initial programs were history.

However, the Lady of the household did not appreciate the wires strung on her living room floor or the tape recorder perched on her precious coffee table. If the recorder was abandoned for a few minutes, the Lady of the household would disconnect everything and pack the recorder away into the closet. This could lead to marital trouble and something had to be done! But what?

The problem had some interesting facets. 1—the recorder had to become an inconspicuous part of the home. 2—the wiring to TV set and radio set had to disappear. 3—the portability of the recorder had to be maintained. 4—the recorder had to be instantly available for recording. This was quite an order, but in searching the deep recesses of the brain and our cellar, a 1923 Edison phonograph lowboy was discovered gathering dust. This antique was inherited from a neighbor who was moving and did not want to cart it to his new home. Thirty years of existence and countless coats of varnish had made it into a very dark unbeautiful black. Knowing that Friend Wife would not tolerate this cabinet in its present condition, the reconditioning work was started.

The cabinet had three compartments, the top of the center section opened up and the two smaller sections held records. The entire phonograph and large speaker horn was removed from the center section, and a recorder shelf installed eleven inches from the top level. A ten inch hole was cut into the bottom of the center section and two four inch holes were cut in the end panels. After countless hours of lathering with varnish remover and sanding operations the original walnut wood of the cabinet began to emerge. The front center grill was removed and a new speaker grill cloth was installed backed by a screen wire to give it strength.

Since this particular recorder comes in its own case and can be portable as long as 110v. is available, it was felt that this was a very desirable characteristic and should be maintained. Therefore it was necessary to install a series of phone jacks in the recorder shelf. By using a simple con-



The switching hookup installed in the cabinet which permits recording from TV or radio or playing through external speakers. A patch cord is used to make the connection from the jacks to the recorder. The toggle switches determine which circuit will be picked up for recording or for playback. The cooling fan and pilot light are connected to the 110 volt supply.

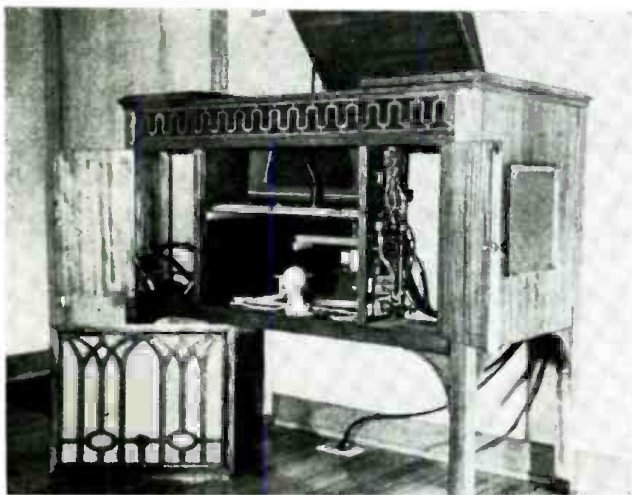
nectors with male phone plugs at each end any possible combination could be made between the twin inputs and twin outputs of the recorder and the speakers, the TV set and the radio set. Referring to the schematic diagram, it will be seen that a variety of combinations is possible. For example, with the plug connector connected to the radio input of the tape recorder and the other end connected to the TV speaker phone jack it is possible to tape any program on the air. With the TV set turned off and the phone plug lead connected to the output of the recorder, it is possible to play the program over the TV speaker. The same wiring applies to the phone jack connected to the radio speaker.

The recorder cabinet has its own set of three speakers, by connecting the speaker output into the speakers jack it is possible to hear the taped material with great fidelity because of the juxtaposition of the cabinet speakers and because the wood of the cabinet has greater resonance than the recorder itself.

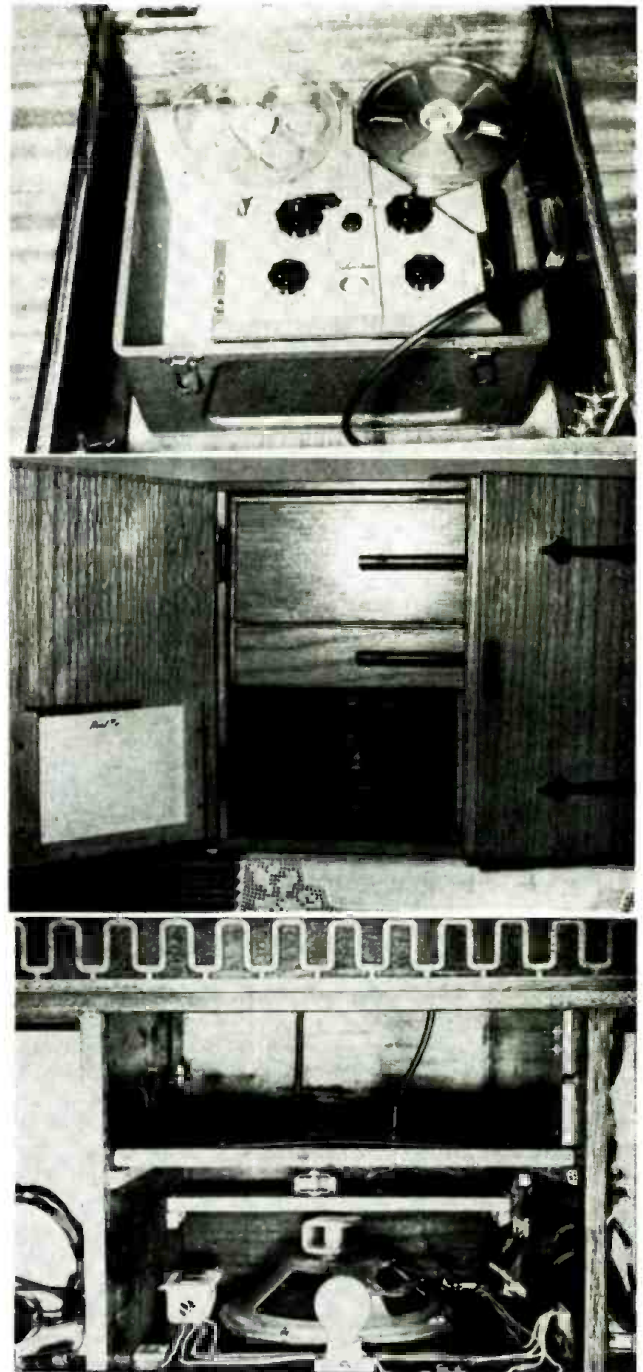
The switching system uses seven toggle switches; six in series (DPST) and the other which cuts in the 110 volt line. With the speaker toggles in series it is possible to activate any one speaker, any combination of speakers or all the speakers at once. When the entire complement of six speakers is used we really have a home that is filled with music.

A hole was bored in the floor behind the TV set and the speaker leads were run through and underneath the floor to the next room where the recorder cabinet is located and up through another small hole in the floor to the cabinet. The connections to the cellar speaker and the upstairs radio were made in much the same manner. As can be seen from the photograph, the only lines coming out of the recorder cabinet are the 110 volt line, and the lines to the TV speaker, radio speaker and cellar speaker. (The latter three are taped together to form an inconspicuous cable.)

The tape recorder is completely enclosed in the cabinet with the cabinet top down, however, it was felt that this might lead to very hot operation. This problem was solved by installing a small cooling fan below the recorder shelf with its own switch. A yellow small-wattage bulb was installed right behind the grill of the cabinet connected in series with the outlet box and power switch so that when the power was in the "on" position, the grill was lighted. A



The cabinet completely opened. Side speaker, bottom speaker and wiring in right hand cubicle, monitor earphones in left-hand cubicle. Any part of cabinet is easy to reach for inspection or repair.



Top: view of recorder with lid of cabinet in up position. Toggle switches and double phone plug connector for connecting input-output of recorder to line jacks. Lid is closed when playing recorder. Center: tape storage cabinet with index file on inside of door. Lower: view with grille off and recorder removed from shelf. Note small motor fan in center of lower section below three inch hole cut in shelf to cool recorder motor. Note also outlet box installed for recorder power.

word of caution, at this point, to the tape recording fans who might like to adopt some of the ideas herein discussed: Please do not bore holes in the floor unless you have the landlord's approval; do not bore holes in the floor if you live in an apartment high in the stratosphere or bore holes in the floor if you live in a boat. With this set-up, we no longer have to unpack the recorder, string lines all over the living room floor or meet the disdainful looks of the Lady of the house. We open the lid of the cabinet, flip the toggle switch for power and we are in the recording business for fun.

TAPE CLUB NEWS



A group of Voicesspondence Club members attending the Club's Ohio-Michigan Tape-vention held in Williams Park, Gibsonburg, Ohio.

The second annual Ohio-Michigan Tape-vention of the Voicesspondence Club was held in Gibsonburg, Ohio on June 9. Planned and conducted by Ohio District Deputy, Dan Moran, and Michigan District Deputy, Fred Potts, the gathering was attended by more than 75 members, their families and guests, from five states. There was a goodly attendance of sightless members. Voicesspondence Secretary, Charles Owen, and his wife, Melva, were on hand to greet everyone and conduct the question and answer period. Among the day's events were short talks on various phases of recording, a binaural demonstration, interesting tapes, and a picture-taking session. These, together with friendly conversation and two excellent picnic meals, combined to make the day most enjoyable for everyone.

Voicesspondent Vic Wagner of Pennsylvania recently received a tape from a fellow club member by the name of Ed Hotchkiss of Fairfield, Alabama, which brought with it special pleasure. Vic and Ed had been boyhood chums and schoolmates, and had not seen or heard from each other since 1923. Vic is one of the many blind Voicesspondence Club members, and both he and Ed are bachelors. They are indebted to the club which brought together two old friends after such a long lapse of time.

During World War II, Voicesspondent Carl Williams of Amsterdam, N.Y. was stationed for a while near Venice, California. It was here that he met a pleasant, motherly woman who was working in the U.S.O. and who originally also came from Amsterdam. They found they knew many of the same people. A deep friendship developed and they have kept in touch via letters in the ensuing years. When Carl joined The Voicesspondence Club, he contacted another member, Vic Goss, who lives in Venice and asked if he would be willing to take his recorder to the friend's home and play a message for her. Vic agreed and Carl prepared an interesting tape, including conversations from mutual friends in Amsterdam, which we are sure was a great delight to the woman.

Candian World Tape Pal, Ray Lewis, has a noteworthy hobby. He has a collection of about 5000 records, which he dubs on tape and plays at teen age dances. Among his recording equipment is a professional model Berlant BRX1 recorder, a Rek-O-Kut variable speed professional record player, and a Stromberg PA system, which includes amplifier and two 12-inch speakers. Ray is the local postman in the Town of Trail, British Columbia.

According to World Tape Pal, Arthur E. Ouellette of Van Dyke, Michigan, who is a U. S. Customs Inspector, the 10 or 15 cents U. S. members pay on tape recordings received from overseas is not a duty charge, but a handling or inspection fee. The recordings are free if the tape recordings are of U. S. origin and are being returned to this country, or if they are recordings for a radio or TV broadcast in the U. S. Otherwise, they are subject to duty at the rate of 13-3/4 per cent, as parts of tape recorders, and if the duty amounts to less than \$1.00, the collection of same may be waived. Duty is not usually collected on tape packages valued at less than \$7.00. Many thanks to Arthur for clarifying this situation for fellow WTP members.

The students in the sixth grade of the Jefferson Davis School recently made a tape recording, the theme of which is Dallas, Texas. Under the direction of their teacher, Miss Pearl Baker, the children recorded a history and description of Dallas, of school life there, and of the United States in general. The tape will be forwarded to World Tape Pals participants in the World Tapes for Education program.

T-R-I member Paul Stillwell was delighted with an oil painting given to him

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Tape Respondents, International member, Paul Stillwell, Wash., D. C., admires painting presented to him by fellow member.

recently by his friend and fellow club member, Mrs. Jackie Swartz of Little Rock, Ark. The painting is of Paul seated before his recording equipment. It was done from a photograph and bits of advice from Mrs. Swartz' son, Bill, who had visited Paul and was familiar with the scene depicted in the painting.

Paul refers to himself as "the key station of the T-R-I tape network in the East." His tapes have the format of a radio program, and he uses the call letters W-T-R-I.

T-R-I member Russell Austin of Washington State would like to contact fellow members interested in barbershop quartets. Russell has been experimenting quite a bit with sound-on-sound, and has made some pretty good recordings, with himself taking all four parts.



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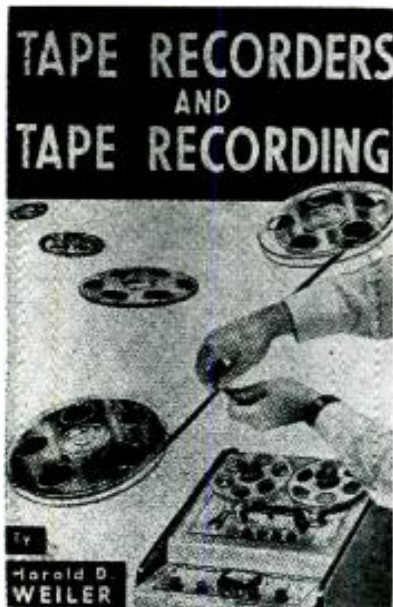
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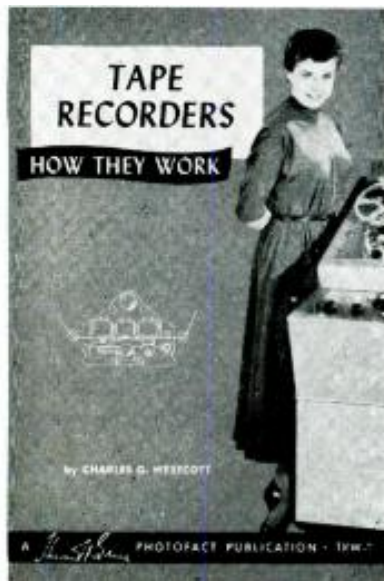
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The Tandberg Model 2 recorder is an astonishingly fine little instrument and does very well at both speeds, 1-7/8 inches per second and 3-3/4 inches per second.

The frequency response is exceptionally good. At the slower speed we found the response to be from 70 to 5,000 cycles with a limit of 6500 cycles. The listening quality was excellent.

At the 3-3/4 inch per second speed, the response is well within the 3 db variation from 60 to 7500 cycles. At about 8000 cycles the response was about 10 db above the response at 1000 cycles. There have been reports of recordings made on this machine with a range of 28 to 10,000 cycles at the 3-3/4 ips speed.

Considering the low speeds, the response gotten from this small unit is more than surprising.

The wow and flutter, even at the 1-7/8 ips speed were extremely low, approaching that of professional equipment. The signal to noise ratio is better than program requirements of 30 db down at zero level.

While this machine is an import from Norway, it is standardized for use in the United States. It uses the standard recording practice in regard to tracks, operates on 110 volt AC, 60 cycle current and the models now being received have the markings in English. The unit we tested, one of the first to be imported, had Norwegian markings.

Mechanically, the tape transport is of excellent quality and very quiet. The output level of the amplifier and speaker is about 2 watts with less than 5% distortion. This is quite sufficient for average home use. For greater volume the recorder may be hooked to an external speaker or amplifier.

The modulation recording control is a magic eye. Electronically, the circuit used is soundly engineered and performs very nicely. It uses the latest type of selenium rectification and the tubes are standard, although given in foreign classifications in the manual. All the tubes used in it have American counterparts.

The body of the recorder is finished in beautifully grained wood. The tape

Product: Tandberg Recorder
Model 2

Distributor: Tandberg
10 E 52nd St., New York 22, NY

Price: \$249.50

transport and top plate is of metal, finished to match the case. It is quiet, light and may be removed from the attractive luggage-type carrying case for use in living room or office. Tape threading is straight line and the controls are simple and easy to operate.

The outstanding arrangement on this machine, other than the things that are more or less common to all recorders is the ability to switch the outputs. A small lever located above the speed change lever does the trick.

In the first position the loudspeaker in the recorder is operative plus a separate loudspeaker. In the second position, only the separate speaker or earphones are in use and in the third position the sound reproduction is from the recorder speaker only. The small loudspeaker in the recorder cannot handle all the range of which their recorder is capable and the owner may connect the recorder to a good external speaker for maximum results. The speaker in the recorder is more than adequate for ordinary usage.

Monitoring of the program being recorded may be done by connecting



The recorder is housed in this attractive traveling case. The recorder is not attached to it and may easily be removed.

a headset to the recorder and the machine may also be used as an amplifier or as a PA system.

It is also possible to mix music with speech by feeding the music from a radio or phono into the machine and speaking into the microphone at the same time. The volume of the background music source must be independently controlled as the volume setting of the tape recorder control must be adjusted to take care of the microphone.

The recorder is very light and compact. The cabinet measures 15 inches x 11-5/8 inches by 6-3/4 inches and weighs only 21 pounds, 6 oz. It comes in a luggage type case which has sponge rubber pads in the lid to hold the reels in place while being carried about. The maximum reel size is 7".

Because of its small size, light weight and small power requirements, this recorder should prove very suitable for operation in cars or boats with an inverter or converter to supply the current. The low power consumption of the recorder means lower battery drain.

The recorder shows evidence of old world craftsmanship as it is well made and neatly finished. The brown wood case and ivory controls make it visually attractive and the design makes it easy to operate.

One of the many little features on the recorders are the wells in the side and back which provide space for the power and attachment cords as well as for the mike. The gear may be quickly stowed away or brought out.

The microphone has a twelve foot cable on it, another touch which is nice. The microphone response is from 50 to 10000 cycles per second, essentially flat. The mike is only about two inches in diameter and has a sponge rubber pad on the back to prevent it from slipping should it be placed on a desk or table top. The



The connection block on the rear of the recorder. A cord is furnished which fits into the holes.



Top: the left side of the top showing the magic eye, volume control and mode selection lever. Center: the function selector in play or record position and the on-off switch. Lower: the mike and cords fits in a side well.

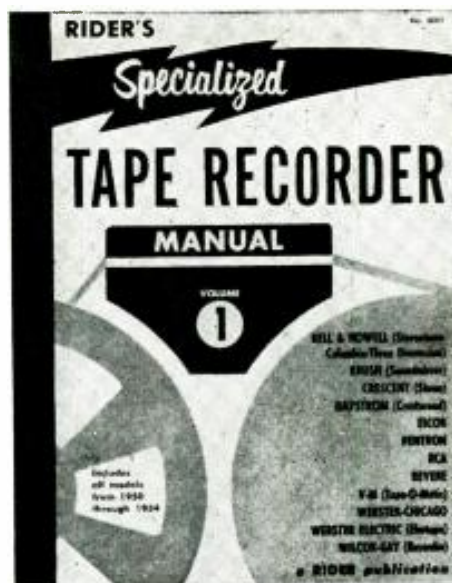
element is mounted in a foam plastic housing to prevent shock damage.

A groove around the rim of the mike makes it easy to tie on a string or ribbon for suspension around the neck.

Tape travel is standard, from left to right and the fast forward or rewind will handle a 7" 1200 foot roll of tape in 2-1/2 minutes. The playing or recording speed may be changed while the recorder is in operation. The magic eye recording level meter operates during recording only.

Shielded twin leads and a ground connecting cord are furnished. The connections are made on a bar at the rear of the recorder.

We feel that this recorder is worth the price asked and is worthy of consideration. The Tandberg Model 3 recorder, just announced is basically the same as the Model 2 except that it is three speeds. Another model with foot control is also available. This will be known as the Model 2F.



The Only Recorder Service Manual

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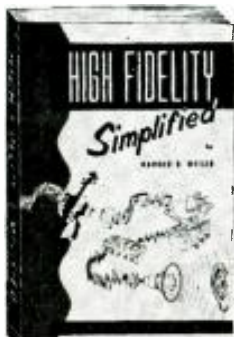
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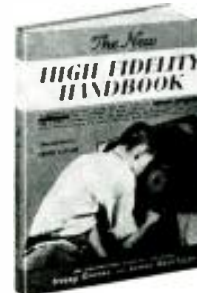
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Education

(Continued from page 15)

and they cannot hear only their mistakes, but their steady improvement.

In shorthand, putting the dictation on tape is effective, because a student cannot request that I go slower or faster to accommodate them. It is on tape, and they must learn to keep up.

In typing, I have a rather unique use of tape. Not having a time clock, and not wishing to pay out the money for one, I took a spare piece of tape that was left over from something or other and recorded ten minutes of silence (well, near-silence) followed by the sound of my alarm clock bell. On the other side are two similar five-minute periods. This is as effective as a timing clock, much less expensive, and considerably less wearing than timing each individual speed test.

I could be modest and say that these are but a few of the ways tape has helped me in my teaching, but to tell the truth, as far as I can recall, these are *all* the ways to date that tape has helped me, but you can be sure that before my career has ended, there will be many more of them, and all of them prompted by my great desire to—well, to tell you the truth—all of them prompted by my great laziness.

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OFF THE REEL

How Loud Can You Get?

We've heard of wives who have complained of the level at which the man of the house runs the recorder on playback but now the Air Force has found out that jet engines make too much noise for the electrical components.

Armour Research Foundation engineers have developed a small test chamber in which tubes, etc. can be subjected to the same amount of noise they would encounter in service.

Jet noise will run as high as 150 db. (a hard working boiler factory only registers 100 db.) With 0 db as the lowest level of human hearing, 150 db is 100,000 times more intense than the boiler factory and will actually cause pain in the human ear, according to Fred Mintz and Marvin B. Levine of the foundation.

The chamber is the size of a six-inch cube and makes a useful laboratory tool. While tape recordings of actual jet noise could be played into the chamber it was found not to be necessary as a random noise generator will do just as well.

Fooling the Fish

Fish are noisy, this has been known for some time but now scientific fishermen with tapes made of the sounds of small fishes fool the big ones. By means of a tape recorder they play the small fish sounds into the water. The big fish hearing the noises make for the spot in anticipation of a big feed only to find its all a snare and a delusion—and that they're hooked.

Stock Exchange Lectures Via Tape

A major attraction at the newly built visitors' gallery of the American Stock Exchange in New York, is a novel means of describing the action taking place on the trading floor to the public via tape recorders. This is done in six languages, and many visitors from foreign countries have expressed delight at having the trading operations explained to them in their native tongue.

The method used provides a taped lecture to anyone who picks up one of the sixty telephone handsets located in the gallery over the main trading floor. Commentator John Daly records the English language talk, which starts at 10 every weekday morning and is repeated every fifteen minutes until 3:30 P. M. It lasts for nine minutes, the remaining six minutes being set aside for answering visitors' questions. Queries, and replies are directed into special plug-in microphones and are heard by all visitors using individual telephones. Foreign language tapes run from twelve to fourteen minutes each. These are played whenever requested.

The taped lecture system basically consists of two Presto SR-27 tape recording units, one which plays back the English lecture continuously and automatically, and the other which is set aside for the foreign tapes. These tapes are mounted in the unit and played as required. During the first month of its operation, the Exchange played host to an average of 250 visitors daily.

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DISCS FROM your tape, \$1.00 up. Send stamped envelope for free list of services. Sales Recording Service, 3540 W. Jackson Blvd., Chicago 24, Ill.

PRECISION MAGNETIC heads. Erase-Record-Playback. Stancil-Hoffman Corporation, Hollywood 38, California.

TAPE RECORDERS, tapes and accessories, nationally advertised brands. Free catalog upon request. Satisfaction guaranteed. Dressner, 69-02 A, 174 St., Flushing 65, New York.

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

NOW YOU can make \$100 weekly spare time with your tape recorder. Send 25c refundable. LP discs made from tapes. 24 hour service guaranteed. 10 inch—30 minutes, \$4.25; 12 inch—45 minutes, \$5.75. Write for other speeds. Artistic Sound, 24110 Rensselaer, Oak Park, Michigan.

WORLD TRANSCRIPTIONS, 16 inch vertical cut like new by such artists like Harry Herlick-Ray Bloch Swing Fourteen and others \$5.00 each. RCA transcription arm, equalizer-filter and cartridge with diamond needle, which will reproduce vertical and lateral records and transcriptions, in perfect condition and like new appearance \$55.00, extra cartridge with diamond needle recently reconditioned and not used \$20.00; GE variable reluctance phono preamp new \$5.00; Equalizer-filter for GE cartridges new \$5.00; Amperite velocity type microphone good condition \$15.00; large stock of new professional Mylar base recording tape for sale in lengths of 1800 and 3600 feet. All prices FOB. Write to V. Maycher, Box 128, Garfield, N. J.

MUST SELL! Pentron T-90 recorder—\$129. Bell RT-75—\$145. Brand New. Factory sealed carton. FOB. Merlin Anderson, 959 Ashbury, San Francisco, Calif.

WANTED: Used recording tape, any amount, any condition, give full details and price. Write: R. Lackner, 2029 Bradley, Chicago 18, Illinois.

FOR SALE: Used tape recorders. Mostly trade-ins. \$50 and up. Contact High Fidelity House, 5123 Roland Avenue, Baltimore 10, Maryland.

PICTAPE: "A true picture fidelity" recording tape. Broadcast-Telemetering-Computer quality. Sample 1800 ft. reel \$5.75. Guaranteed. Pictape Products Corporation, 152 West 42nd St., New York 36.

SALE OR TRADE: Betlant BR-1 recorder. Want Ampex 600 or 612. Parrott, 2224 Beaumont Street, Washington 21, D. C.

WILL BUY Thesaurus NBC transcriptions of Xavier Cugat Orchestra. Also any Latin American vocal or band music on transcription made prior to 1946. Mail offerings together with price to Sam Kiamic, 930 Grant Ave., Pelham 65, N. Y.

WECOR tape recorder, model 2130, three speakers Hi-Fi, used only two months, A-1 condition guaranteed. Cost \$249.95. Only \$150. Jack Fives, 2916 Rockrose Avenue, Baltimore 15, Maryland.

HI-FI recording tape. Timpani brand. State make of your recorder—receive free sample. Bob Freund, 56-D Bennett Avenue, New York 33, N. Y.

LEARN HYPNOTISM from tape. Complete course, \$4.00. Free information. Drawer 697, Ruidoso, New Mexico.

WANTED: Territory open in some areas for full or part time distributor of "talking greeting card" records. Tape recorder required. Memory Recording Studios, 2647 Middle Road, Davenport, Iowa.

FOR SALE: Magnecord Model PR63AH-PT63J, 3-speed, 3-head recorder. Immaculate condition, used very little. Complete in portable cases, also contains playback amplifier and speaker. Full track heads. Over \$800 value, a bargain for \$500. Also, Concertone 1502, 7½ and 15 ips hysteresis motor complete in carrying case and with half-track heads. Over \$500 of almost new recorder for only \$300. This equipment now replaced with stereophonic. Contact Arthur Cunliffe, 1800 Roland Avenue, Ruxton 4, Maryland.

BRAND NEW 5" reel of plastic recording tape only \$2.00. Michael Norris, 223 North 41st St., Camden 5, New Jersey.

PUT YOUR recorder to work, connected with established studio, \$1.00 refundable. Chardon Recording, Box 141, Chardon, Ohio.

STEREO MIKES AND PREAMP: Two Shure #55-S matched mikes and Pentron mixer; used as binaural mixer with two double channels, or as four channel monaural mixer. Mikes list \$76.50 each, mixer list \$47.50; total price, \$95.00. R. P. Barton, 509 S.W. Oak St., Portland 4, Oregon.

BULK TAPE erasure, Jiffy-Rase, new in factory carton. Cost \$36.00, sell \$18.00. Witmer, 90 W. Winspear Ave., Buffalo, N. Y.

BRUSH SOUNDMIRROR, Broadcast model professional carrying case. Two absolutely new heads, three motors. Pushbutton, relay operation. Custom amplifier needs reworking. Complete, best offer takes as is. Include payment; money returned if already sold. Oliver Berliner, 1007 N. Roxbury Drive, Beverly Hills, California.

FOR SALE: Walkie Recordall, Model CCB, complete with following accessories: (1) External Jack, (2) External Switch, (3) External Loudspeaker, (4) Ear Phones, (5) Telemike, (6) Lapel Mike, (7) Switchbox, and (8) 100 Sonabands. Only 1 year old, used very little for medical lectures. Excellent buy. Cost when purchased \$573—will sell for \$400 or best offer. Write to Dr. Torcivia, 312 E. Wisconsin Ave., Milwaukee 2, Wisconsin.

SACRIFICE—VM-700 tape recorder. Used only by myself personally; absolutely perfect. Will ship in original carton, exactly half-price (\$89.97). Wellmaker, 1053 East 13 St., Brooklyn 30, N. Y.

FOR SALE: Magnemite briefcase tape recorder in excellent condition. 3¼ ips and 1½ ips, \$200. John A. Cramer, Apr. 2, 2941 State St., Santa Barbara, California.

WANTED: Tape pals. All tapes answered immediately. Ernest B. Aiosa, 948 Palmyra Road, S.W., Warren, Ohio.

SELL—Jensen Tri Plex 3 way speaker system (TP-200). Fentone "Brenell" tape deck, 3 speeds, matching PRO-2 preamp, VU meter. Fairchild 215A diamond cartridge, matching step-up transformer. For prices and complete details, write: G. Feld, 238 Naples Terrace, Bronx 63, N. Y.

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WANTED—Model TR-4 Pentron recorder. Must be in excellent condition and working properly. Write and give details about yours. Box 5033, Farley Station, Oklahoma City 7, Okla.

FOR SALE: Cub-Corder, almost new, price \$100, single track. Miriam Rogers, 71 Williston Rd., Brookline, Mass.

MAGNECORDETTE, almost new, mahogany cabinet, \$250. New 10½" plus-50 Mylar tapes, \$7.00 each. J. Brown, 410 State, Kansas City, Kansas.

GE PORTABLE radio, battery, like new, \$15. DeJur Magazine 8mm movie F 1.9 EC, like new, Hallicrafter SX-62, excellent, \$115. Dr. Unger, 400 Forest Ave., Buffalo, N. Y.

WANTED: World transcriptions; early popular series. Also address of party in Chicago who wrote regarding same. James Orlando, Dickerson Run, Pa.

WANT—2 popular type tape recorders, will pay cash. Also used type A plastic tape. Geo. Bischof, Fort Worth 4, Texas.

WISH to tape-respond with persons having a Working Knowledge of Hypnosis or Sleep-Learning, give details. Herman Bary, 11116¼ Camarillo St., North Hollywood, Calif.

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FOR SALE: Battery operated, fully complete, Magnemite, dual track, speed—1⅞, 2 hour recording, new. Best offer gets it. Geo. M. Coleman, 4871 Broadway, New York 34.

CONCERTONE Stereo Model STW-4 bought new in February 1956. Used three months. Must sacrifice. \$550, or best offer. Contact Lt. Colonel William McClanahan, 6228 30th Street, N.W., Washington 15, D. C.

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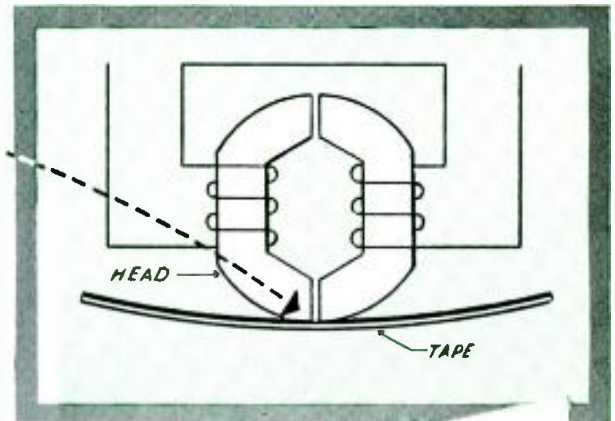
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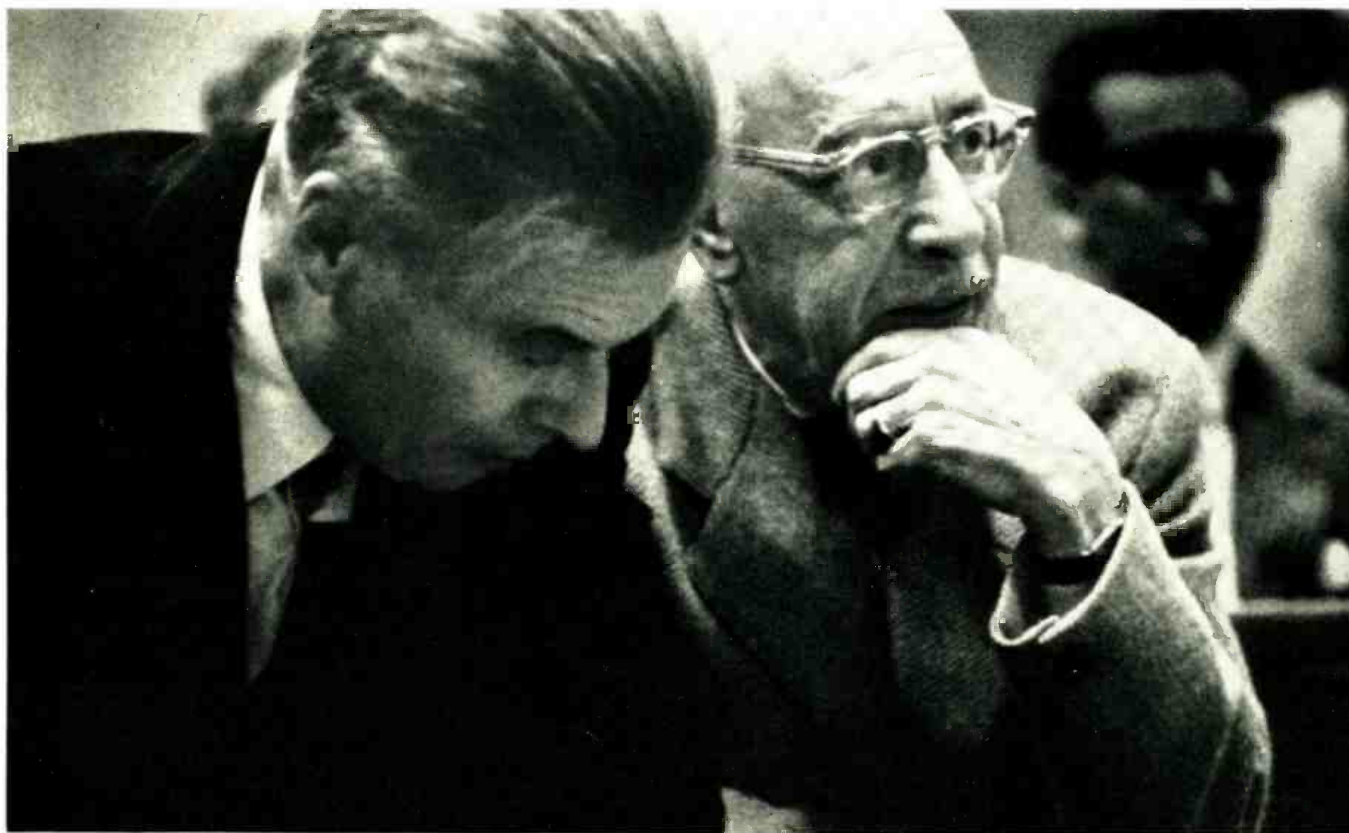
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ALDOUS HUXLEY AND IGOR STRAVINSKY at the Gesualdo madrigals recording session.



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