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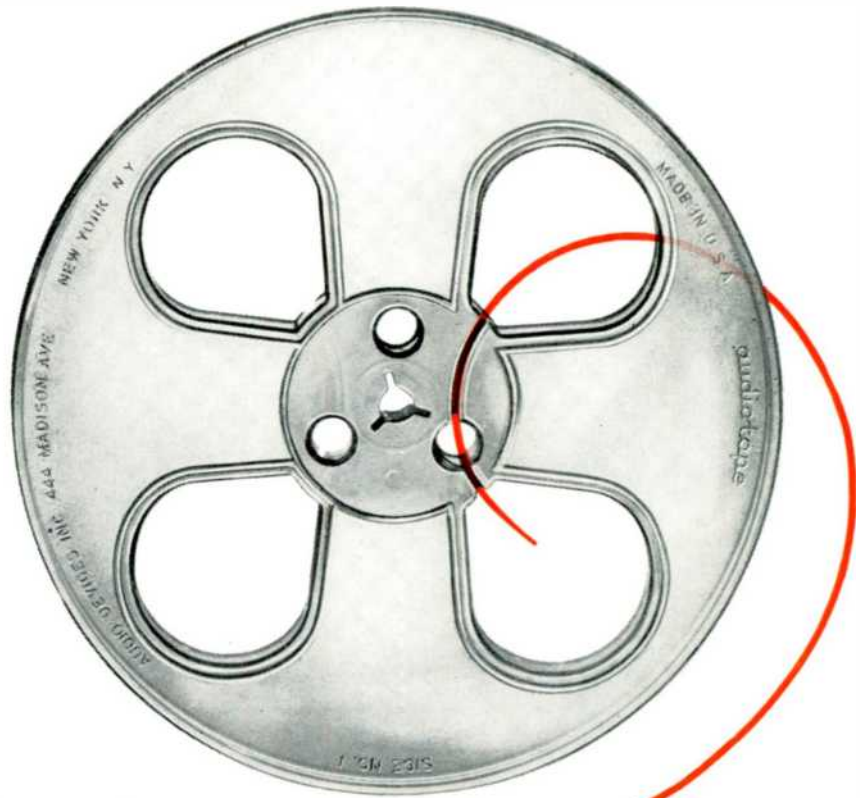
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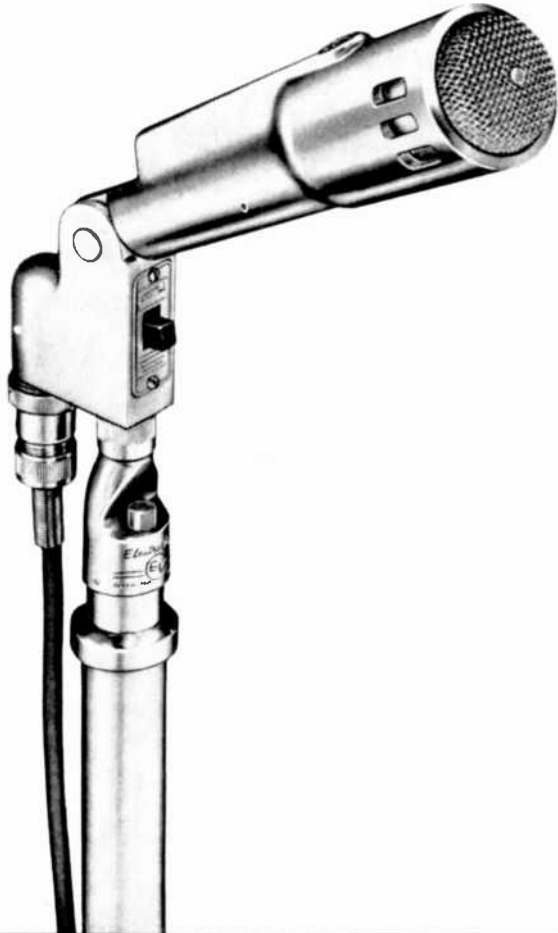
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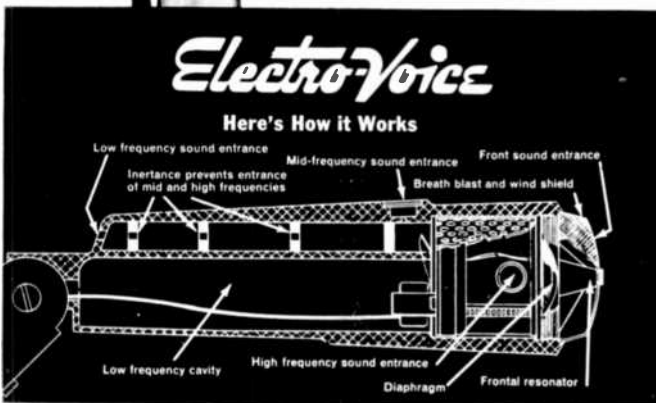
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HI-FI

TAPE RECORDING

VOL. 4 No. 7

JUNE, 1957

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HI-FI TAPE RECORDING is published monthly by Mooney-Rowan Publications, Inc., Severna Park, Md. (Severna Park 548). Entered as second class matter January 7, 1954 at the Postoffice, Severna Park, Md., under the Act of March 3, 1879. National Advertising Representative: J-V Associates, 274 Madison Ave., New York 16, N. Y. (ORegon 9-0030). Subscriptions, U. S. and Possessions, \$3.75 for one year, Canada and Mexico add \$.50 a year; all others add \$1.00 a year. Two years \$7.00. Contents copyrighted by Mooney-Rowan Publications, Inc., 1957. Printed in U. S. A.

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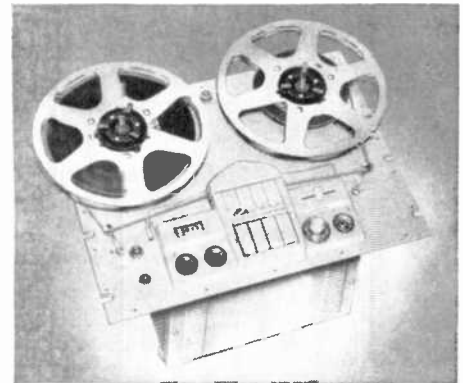
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NEW TAPES

By Georgie Sigsbee

WITH spring arrived the annual sight of new flora and fauna along with a large batch of new tape releases and news of four companies entering the tape field.

Verve is producing a line called "Reel O' Gold." Included in their packages will be such artists as Ella Fitzgerald, Bing Crosby and Count Basie. Recotape of Los Angeles, Klipschtape of Hope, Arkansas and Urania of New York round out the list.

Sonotape now has on the market a stereo alignment tape which will help determine the proper distances of your speakers from each other; check each channel to see if correctly arranged, equalized and in level; determine if your system is reproducing all essential frequencies, etc. Contained on the tape are selections from Westminster releases which demonstrate points and facilitate the determination of these factors by ear. Cost is \$11.95.

Sonotape also welcomed spring by raising the prices of their tapes. Their stereo SWB series is up \$2; monaural SW series, up \$1. Demo tapes remain the same. Alignment tape as quoted above.

CLASSICAL CONCERTO LISZT

Concerto No. 1
Artur Rubinstein, Pianist
Alfred Wallenstein, Conductor

RCA Victor Symphony Orchestra
RCA BCS-31
7 1/2 Stereo, Inline ... \$8.95

This composition was dubbed "The Triangle Concerto." Liszt bravely defied musical conformity of his time, and subsequent criticism, by using this "canaille" among the percussion. His purpose in utilizing this instrument was for the effect of contrast and enhancement of rhythmic elements.

This concerto consists of four major sections which merge freely. There exists a serene partnership between orchestra and piano with the various themes handed back and forth with apparent ease. The recording is filled with singing strings, resonant brass and woodwinds and the deep-timbre of double basses, not to mention the magnificent piano (yes, and triangle) work.

Mr. Rubinstein plays with great control and strength showing a true feel for delicate gradation of tonal textures. His performance of this work is piercingly effective.

Having recently reviewed (March 1957) the Phonotapes monaural PM 128 with Frugoni as soloist backed by the Pro Musica Symphony of Vienna under Swarowsky, I feel both men have infinite proficiency. Frugoni gives a brisk, forceful reading while Rubinstein takes a slower pace at times, gathering with precise, but

sensitive touch, all the beauty available. They are both fine artists.

In comparing, I used two separate systems—the complete Ampex stereo outfit for the RCA and the Viking deck through our high-fidelity system, thus enabling a good "point by point" check. The RCA takes top award for aural brilliance. The perspicuous tones of the piano, and all the other instruments, demonstrates excellent engineering work on the part of RCA.

Paraphrasing Liszt's works relative to the fourth "movement" and applying in relation to all four, Rubinstein and Wallenstein "bind together and round off the whole piece" with distinction.

CONCERTO TCHAIKOVSKY

Violin Concerto in D Major, Op. 35
Erica Morini, violin
Philharmonic Symphony Orchestra of London
Artur Rodzinski, conductor
SONOTAPE SWB 8016

7 1/2, Stereo, Stacked or Staggered \$11.95

The renown Viennese critic of Tchaikovsky's time, Eduard Hanslick, branded this concerto with as many uncomplimentary adjectives as he could summon. Further, it was considered an impossible task to perform in the opinion of one Leopold Auer, the Czar's court violinist, to whom the work was originally dedicated. Three years after it was completed, Adolf Brodsky, called forth his talent and courage and gave the concerto its first public airing. The dedication was rightly changed in his favor as it was through his tireless efforts that the concerto began to take its permanent place in the music world.

One of the most technically forbidding of all violin concertos, this work calls for the highest calibre of virtuosity. In the *allegro moderato* Miss Morini proves she is more than capable of meeting this demand. She executes elaborate patterns of arpeggios, rapid double-stopped chords and the intricate cadenza with brilliance. To the Second Movement she imparts all the tender, plaintive quality desired and in the Finale builds to a resounding, vivacious climax the typical Russian themes and rhythms.

The score is most difficult but as effectively played in the effortless style rendered by Miss Morini one does not totally sense the complexity of techniques involved. Under her skilled touch the violin emanates radiant sounds.

Good orchestra support lending compliment to soloist. Fine reproduction.

ORCHESTRAL

DUKAS:
Sorcerer's Apprentice
PFITZNER:

Little Symphony, Opus 44
Vittorio Gui, Conductor
Florence May Festival Orchestra
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gician, a broom and water, is given animated treatment by Mr. Gui. Thanks to school concerts, as well as Walt Disney's "Fantasia," this delightful bagatelle which brought Dukas lasting recognition is well-known and liked by our children and still manages to excite the fancy and imagination of many adults.

From an audio standpoint, it is beautifully recorded and runs the gamut of instruments making it a good showpiece for your stereo hi-fi system.

Hans Pfitzner was born of German parents in Moscow. Raised in Germany, he became active as an opera conductor and composer; i.e., his opera "Palestrina." He was quite a prolific composer in various fields of music and at the age of 64 produced his first symphony.

An antagonist of "modernism" in music, his "Little Symphony" is styled in a rather archaic mode. Possessing a pastorate quality, the composition expresses idyllic simplicity through the broad use of strings. He uses the horn and flute to inject sudden color. The finale has a theme which is like a short, lilting song. Not being very familiar with Mr. Pfitzner's works, I intend to give this one further attention.

Mr. Gui conducts these selections with spirit and discernment.

BALLET MENOTTI

Sebastian Ballet Suite
Leopold Stokowski, Conductor
Members of the NBC Symphony Orchestra
RCA CCS-29
7 1/2, Stereo, Inline ... \$10.95

The Italian-American composer, Gian-Carlo Menotti, will be 46 years old this July 7. Coming from a family of musicians, he turned toward self-expression through composition and at age 11 had composed his first opera.

This suite stems from the score of his ballet, "Sebastian." The former was first performed at a concert at Lewisohn Stadium in the summer of 1945; the latter was first produced in the winter of 1944 by the Ballet International in New York.

The ballet unfolds the tale of two sisters who try to keep their brother, a Prince, from becoming allied with his loved one. Using witchcraft, they make an effigy of the woman and thus try to kill her. Sebastian, a Moorish slave who is also in love with the heroine, takes the place of the image and his self-sacrifice breaks the sister's power and the lovers are reunited.

Combining both traditional and modern styles, the suite is filled with tuneful, vivid music. The melodious "Barcarolle" is a very pleasing piece. The energetic fugato accomplished in "Street Fight" is well done.

The suite is composed of five sections: *Adagio, Barcarolle, Street Fight, Cortège,* and *Pavane* to which Mr. Stokowski has added *Sebastian's Dance* and *The Courtisan's Dance*. Mr. Stokowski shows his usual skill at conducting.

I found the strings and brass tended to have a rough edge, particularly in the high register, and predominately in the "Cortège" and "Sebastian's Dance." This



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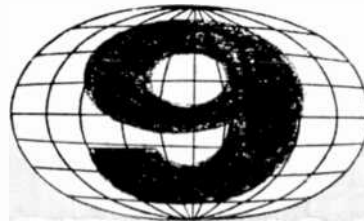
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Piano Concerto in F—Gershwin:
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Valse Triste (Sibelius), Marco Gregory and his Orchestra. BN-34, 1200'.

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Symphony No. 4 in B Flat—Beethoven:
Frankfurt Opera Orchestra, Walter Goehr, Cond. BN-36, 1200'.

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may be the result of a smaller group of instruments recorded in not too large a studio with the mikes picking up too closely at intervals. It is not disconcerting but my ears persisted in sensing this on each hearing.

The reproduction is one of "live" presence.

BALLET
DELIBES
SYLVIA and COPPELIA

Pierre Monteux and Members of the Boston Symphony Orchestra
RCA CC-30
7 1/2, Dual ... \$10.95

With these delightful ballets, Leo Delibes (1836-1891) achieved the title "the father of modern ballet music" paving the way for the great ballets of Tchaikovsky, Stravinsky, etc. Music for the dance was no longer dependent upon seeing the performers; it stood on its own as concert repertoire.

At the present time, with so many spectacular ballets available, "Sylvia" is seldom performed. However, the familiar "Pizzicati Polka" and "Cortege de Bacchus" are often found as part of the light concert program. The ballet reveals the mythological story of Amintas, a shepherd who is in love with the beautiful nymph, Sylvia. With the aid of Eros, the God of Love, their story comes to a triumphant ending.

Pierre Monteux conducts these enchanting excerpts with a sensitive, vibrant touch, weaving the charming, delicate airs into rich patterns, building colorful orchestration with the strings, and achieving fine dramatic effect with the brass and percussion. The reading accorded the "Intermezzo and Valse lente" is quite lovely. Taking his time to subtly sketch variations of tempo and tone, Monteux draws out all the beauty within the score.

Included on this tape are two brief numbers not often recorded, the "Pas des Ethiopiens" and the "Chant Bachique." Between the short "Pizzicato" and the "Cortege" there is a beautiful number played on the violin by Alfred Krips.

Another tape recording of this ballet with the London Pro Musica Orchestra under Sheldon Burton (Omegatape 8002, "The Ballet," reviewed in June 1956) is not as polished either in performance or fidelity.

In the plot for "Coppelia" the toymaker and magician, Coppelius, makes a doll. Frantz falls in love with it much to the chagrin of Swanilda, his sweetheart. Swanilda takes the place of the doll and all ends happily. The more frequently performed of the two ballets, "Coppelia" contains gay, sprightly music, such as the Hungarian folk dance, the Czardas, and the waltz of the doll. Manuel Valerio performs a brief clarinet solo at the opening of the "Valse de Swanhilde" and Alfred Krips will again be found doing a violin solo, during the sweet "Ballade."

Beautifully executed and recorded.

OVERTURE
TCHAIKOVSKY
Romeo and Juliet
Charles Munch, Conductor

Boston Symphony Orchestra
RCA BCS-22

7 1/2, Stereo, Inline... \$8.95

As interpreted by Munch, this poignant love music conveys quite an emotional impact. Taking baton in hand, as an artist with a brush, he mixes musical pigments in bright, intense colors, painting with vigorous, sweeping strokes upon this musical palette. Building slowly, he fills the canvas with rich tones reaching an impassioned sonic climax. Insofar as fidelity is concerned, this release rates at the top; as to interpretation, Munch gives a stimulating performance.

Perlea (Phonotapes PM 112, including "1812 Overture," "Capriccio Italien," and "Marche Slave," reviewed August 1956) achieves a lyrical picture in soft pastels. The fidelity is not as keen and, therefore, the recording does not possess as strong an effect as the Munch offering.

This RCA tape provides a sonically superb reading; after living for ten years with the RCA 78 version of the Boston Symphony under Koussevitzky, I would use the word "perfect" pertaining to Koussevitzky's ability to derive the ultimate depth of expression and passion embodied in this eloquent score. At the risk of sounding like a traitor to the cause, I would say that this 78 rpm outrates the Perlea tape for brilliancy of sound reproduction but certainly not for overall fidelity as the disc contains the ever-present distraction of surface noise.

In the Munch tape you may notice a slight muddy effect to the bass drum but unless your ears are highly sensitive you will not be bothered by this small imperfection.

OVERTURE
MOZART OVERTURES

Titus
Marriage of Figaro
Il Re Pastore
Bastien and Bastienne
The Impresario
Cosi Fan Tutte
The Magic Flute
Abduction from the Seraglio
Don Giovanni
Idomeneo

Jonel Perlea, Conductor
Pro Musica Symphony, Vienna
PHONOTAPES-SONORE PM 155
7 1/2, Dual ... \$8.95

This is a fine musical package containing ten charming gifts wrapped in bright ribbon. The recipient will have brief, but lasting, examples of the various operatic forms, from opera seria to opera buffa, employed by the Viennese Master.

The arrangement of numbers in the recording is well presented. Track I opens



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with the colorful musical prologue to "La Clemenza di Tito" and is followed by five light, gay overtures. On Track II are heard the four of more intense, dramatic nature. All afford excellent insight into the wealth of Mozart's musical imagination and genius.

Mr. Perlea's conducting deserves commendation. He gives a crisp, sparkling performance throughout. His delivery of the "Don Giovanni" and "Idomeno" is both powerfully and vividly expressed. The string work is accomplished with facility; in "The Magic Flute" their lyrical quality reaches the heights during the brilliant fugue. The clarity and rich tones of the wind instruments are most impressive, particularly in the "Cose," "The Magic Flute," and "Seraglio."

Conducted with address, this tape is sonically superior.

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JULIUS LA ROSA

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I Love My Bed

RCA BP-44

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

This amiable young man delivers his songs in an informal, comfortable manner and is given fine backing by Joe Reisman's orchestra and the Ray Charles vocal group. Equipped with a capable, pleasant voice La Rosa glides through such numbers as "If I Had You" and "I Hadn't Anyone Till You" proving his ability to execute these standard tunes with sleek technique. He puts on his infectious grin and bounces through "How About You?" wherein he adds a homey touch by including Mrs. La Rosa in the lyrics.

Employment of the close miking causes occasional sibilation with the "s" and "f" consonants and at the end of "But Not for Me" the trumpets are a bit harsh at the high end, but otherwise this is a good, clear job of reproduction.

HARRY BELAFONTE CALYPSO

Day O
I Do Adore Her
Jamaica Farewell
Man Smart
Dolly Dawn
Star O

The Jackass Song

Hosanna
Come Back Liza
Brown Skin Girl
"Will His Love Be Like His Rum?"

RCA BP 48

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

Following the current popular trend toward calypso, RCA offers this Belafonte recording of exceedingly polished translations of West Indian music.

In my opinion, the outstanding number is the haunting "Jamaica Farewell" which Belafonte sings with intimacy and sensitivity.

You'll hear Millard Thomas playing guitar, good drum and bass work and a tin penny-whistle played as you may never

have heard it before. Tony Scott's orchestra and Norman Luboff's chorus lend backing to Belafonte's fine vocalizing.

I feel the song "Hosanna" would have come off better as a whole if the female voices had been deleted as they tend to inject a shrill, discordant note.

If you like calypso-type music, here are fresh, glossy arrangements sung by a man who delivers each song with expert touch.

Fine reproduction.

MUSIC FOR BACHELORS

Dinner for One Please, James
I'm Confessin'
I'll See You in My Dreams
Comme ci, comme Ca

EXPERTS PICKED ASTATIC VOGUE 988

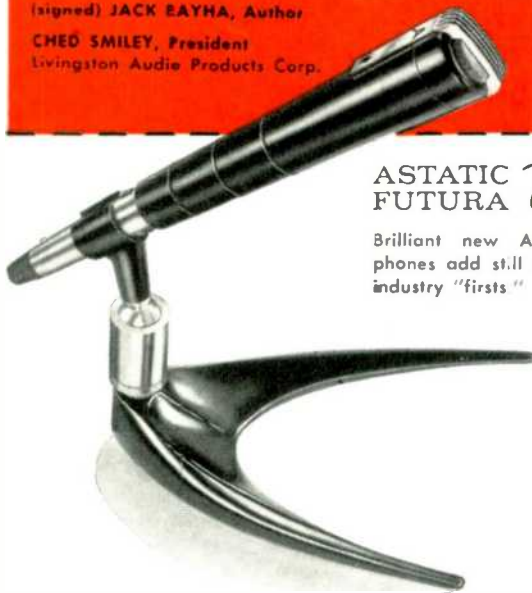
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"The author selected the Astatic 988 for the job due to its extreme frequency response and particularly fine sound of the human voice. On a dollar-per-cycle basis it represented a best buy for high fidelity tape recording work.

"Livingston Audio Products Corp. recognized the 988's fine performance, as well, and by joint agreement we selected the 988."

(signed) JACK BAYHA, Author
CHED SMILEY, President
Livingston Audio Products Corp.

*Narrated by Ed Condit
Duplicated by Livingston Audio Products Corp.
Published by Tape Recording Magazine, Severna Park, Md.



ASTATIC Futura "988"

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FOR COMPLETE INFORMATION on all Futura series microphones, write for Catalog No. S-438.



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in STEREO

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Be My Love
Yearning
Easy to Love
For the Very First Time
I Cried for You
Time on My Hands
La Vie en Rose
Somebody's Wrong
Henri Rene and His Orchestra
RCA AP-43
7½, Dual, 5"... \$6.95

This is not beamed at the bachelor happy in his "status quo" but for the man who might need a musical assist to catch his woman. The notes suggest the use of such added props as soft lights, rare drinks, etc., to help create the proper atmosphere. However, for the bachelor who does not desire female intrusion into his blissful life, here are some svelte arrangements of ballads, sans vocals, which should be pleasant to hear while, say, catching up with the dishes, ironing, cleaning or any odd jobs.

Using the lilting strings to advantage, Rene and his men present sophisticated versions of the selections. Guitar solos are by Barney Kessel and quite well done they are as you will hear; i.e., "Easy to Love." Piano solos executed by Buddy Cole are another added attraction. As a good example listen to "For the Very First Time."

Fine recording for anyone... including bachelors.

JAZZ

STRING BAND MUSIC OF NEW ORLEANS
Medley: Winter Nights—Stumbling
Original Dixieland Jazz Band One-Step
When the Saints Go Marching In
Medley in "D"—Hawaiian Guitar Solo
Old Green River
My Josephine
Seven-Eighths String Band
Phonotapes—Cameo Series PMC 1008
7½, Dual... \$2.88

This is not classic New Orleans jazz as delivered by King Oliver, Kid Ory, Sidney Bechet or George Lewis and, as you will observe from the title, there isn't a trombone, clarinet, trumpet or drum in the picture.

This small group is comparatively unknown having played on an amateur basis from 1913 until 1949 when two recordings were privately issued. They do not attempt to recreate New Orleans music; they simply get together for their own pleasure and string along with their interpretations of some of the better-known jazz tunes.

Composed of Bill Kleppinger playing mandolin, Bernie Shields, steel guitar, Edmond Souchon, M.D., guitar, and Frank "Red" Mackie, bass, the band plays in a loose, relaxed fashion. These are not particularly enthusiastic, foot-tapping renditions and I found myself wanting to hear the potent style of George Lewis (Jazztape 4005) or Wilbur de Paris' well-blown version (Atlantic AT 5-5) of "When the Saints Go Marchin' In."

You may recognize the name of Souchon as he has done some vocalizing and guitar work with Johnny Wiggs' band on Commodore label. He starts to sing in the "Saints" but gets as far as the first three

words and that is that until he reaches the "Old Green River."

The bass reproduction is a bit heavy in all but the first selection. In #1 you are right there hearing fingers sliding over strings, etc. In my opinion, this is the best number on the tape.

Somehow I can't seem to adjust to a Hawaiian guitar in music even remotely connected with New Orleans jazz.

If you don't have any string band work, then here is a small dose which, according to your own taste, you may, or may not, like.

FLEM FERGUSON AND HIS DIXIELAND JAZZ, Vol. 1

Lady Be Good
"Way Down Yonder in New Orleans"
Tin Roof Blues
Muskrat Ramble
Flem Ferguson, piano
George Ives, clarinet
Don Course, bass
Bill Manning, drums
Preston McNeely, trumpet
Bob Cargile, trombone
KLIPSCHTAPE KST-1001
Stereo, Inline, 15 IPS

We received word in early March from John Fargle, Manager of the Klipsch Tape Division, that by mid-April they would have available six stereo releases designed to meet the demands of those individuals who own professional 15-ips stereo playback equipment. Each copy is made directly from the master tape at original recording speed to preserve the overall response and signal-to-noise-ratio.

These, and future 15 IPS, releases are for a limited market, but for those who do own professional equipment, we hereby submit a "partial" review of a Klipsch Tape. We were limited as we did not have the stereo hookup available for the Ampex professional equipment used and so had to take "half the cake" by listening monaurally through one Altec speaker.

According to the information sheet this group was recorded in a small studio with one mike recording predominantly the piano and string bass; the other, the drums and solo instruments.

This is a good "Dixieland" assemblage. Their rhythms, improvisations and solo work are fine. They perform equally well in both fast and slow numbers as is readily heard in the quick tempo of "Way Down Yonder in New Orleans" and the languid rendition of "Tin Roof Blues."

Perhaps Mr. Klipsch will see fit to sacrifice a bit of recording perfection and release tapes at 7½ ips for the consumption of the majority.



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Vocal Group
in STEREO

Omegatape

FOLK

COUNTRY SQUARE DANCE TUNES

Cindy
Bottle Up and Go
Cripple Creek
John Henry
Old Joe Clark
Skip to My Lou
Green Corn

Country Washboard Band
PHONOTAPES-SONORE PM 5013
7 1/2, Dual...\$6.95

This band is composed of William E. Cook at the washboard, Sonny Terry playing harmonica, Brownie McGhee strumming guitar, Frank Robertson hitting the bass and Pete Seeger performing on the 5-string banjo.

The group cuts loose at a fast clip and with apparently tireless energy maintains a rapid pace throughout the recording. They show plenty of get up and go in "Bottle Up and Go" and "Green Corn."

They rend the air with their vociferous renditions of these folk airs. This is for fans of the square dance, hoe-down or whing-ding country music. The tempo throughout is bound to exhaust anyone, no matter how young, who may attempt to dance through to the final number.

Recorded under the supervision of Pete Seeger the fidelity is loud and clear.

NOVELTY

BRASS & PERCUSSION

Stars and Stripes Forever
Parade

On Parade
Semper Fidelis
Jubilee
Fourth of July
Hands Across the Sea
Battle Hymn
National Emblem

Morton Gould and His Symphonic Band
RCA CCS-30
7 1/2, Stereo, Inline...\$10.95

If need be, this tape will unquestionably revitalize your nationalistic pride. Upholding the standards of the best in band music, Morton Gould, composer, highly-skilled arranger, adapter and conductor, creates a program of American band music which is irresistible. If you want to show off your hi-fi rig, if you love band music effectively produced and engineered, then this is a tape you will definitely want to own.

There are four numbers by Sousa the "March King," one of Goldman's, one of Bagley's and three by the gifted Mr. Gould. I was quite taken with Mr. Gould's compositions and especially liked his short "Parade" for percussion. His self-styled "razzle dazzle" march "Fourth of July" is quite modern; he has even integrated in the score instrumentation simulating the sound of fireworks.

High quality all the way.

Here is the American side of the picture: coupled with the Omegatape ST 2006 of Austro-German military marches reviewed in April 1956 you who love march music can really climb aboard the bandwagon.

HEAR-SEE TAPE TV PLAYER NEXT STEP

Just as you now can buy recorded tapes to furnish music in your home, you will be able to buy recorded TV shows which will give both picture and sound when played through the home TV set.

Only in a prototype stage in the labs at present, this RCA development, using regular 1/4 inch tape running at a speed of 10 feet per second, heralds the day when musical comedies or stage productions can be bought on tape and played at home.

This development also can lead to the production of home movies on tape instead of film and the filming of action for news-

reels which can be played over the air as soon as the tape reaches the studio.

Techniques are now being developed which will permit dual track operation and double the length of program material on a reel.

According to RCA, who developed the device, recorded tapes for the television tape player can be produced easily by techniques already proven in the RCA television tape system for broadcast use and they can be marketed in the same fashion as standard phonograph records and sound tapes.



Shown at left in a home setting is the RCA television tape player. The unit, now in the prototype stage in the lab, will play tapes recorded with picture and sound through the home TV receiver. Electronic home movies, using lightweight, transistorized cameras is also a future possibility based on this device.

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a **Tandberg**
could you receive
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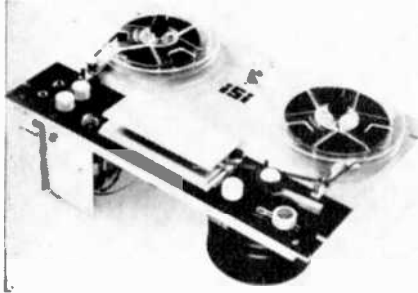


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NEW PRODUCTS

ISI RECORDER



International Scientific Industries Corp., 2374 East Hiway 24, Colorado Springs, Colo., has introduced the ISI Model 100 tape recorder. According to the manufacturer, this is the first tape transport mechanism to utilize a magnetic differential clutch and brake system; it has been conceived and created to operate for life without adjustment; and the use of a mechanical servo-feed-back system with magnetic differential applies the correct torque to the supply and take-up spindles, maintaining constant tape tension and stability, whether in play-record position, fast forward, or rewind. The recorder has a two-speed synchronous hysteresis motor and is available in either 3 $\frac{3}{4}$ and 7 $\frac{1}{2}$; or 7 $\frac{1}{2}$ and 15 ips. Positions for six heads permit any combination the user desires. The deck is of anodized aluminum and is simple and straight-forward in design. For price and complete details, contact the manufacturer.

TERADO CONVERTER



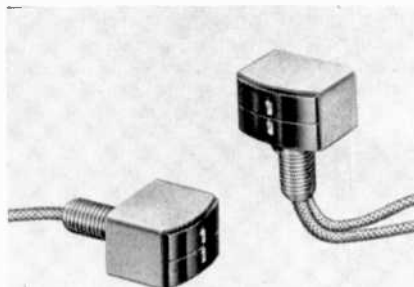
Terado Company, 1068 Raymond Ave., St. Paul 14, Minn., is marketing the Trav-Electric "Automatic". The "Automatic" is a dual voltage converter which operates on either 6 or 12 volt battery in a car, truck, boat or plane, and changes this battery voltage to 110 volts AC for the operation of small appliances such as an electric shaver, tape recorder, portable TV, etc. It requires no switching to change voltage. The "Automatic" is simple to install, just plug it into the cigarette lighter and then plug in the desired electrical appliance. For price and additional details, write to the manufacturer.

STEREO LISTENING CHAIR



Chesapeake Stereo Products Company, Severna Park, Maryland, has introduced a stereophonic listening chair, the first of its kind. For the first time, a person may comfortably enjoy the wonder of stereo sound with near headphone clarity and brilliance. You simply turn on the recorder, sit back, relax, and let yourself be surrounded by stereo sound. The wing-back chair has speakers built into its wings. It may be combined with a variety of hi-fi equipment to complement its listening pleasure, and its attractiveness is sure to delight the lady of the house. In addition to its use in the home, it proved to be the hit of the Baltimore and Philadelphia Hi-Fi Shows, and proved its excellence as a demonstration unit for stereo sound. For additional information and price, write to Chesapeake Stereo Products Company.

DYNAMU BISONIC HEAD



A new Bisonic stereophonic record-playback head, Model 8031, has been announced by Dynamu Magnetronics Corp. A frequency response of 70 to 12,000 cps is obtainable at 7 $\frac{1}{2}$ ips, with the maximum total deviation of plus or minus 4 db. The gap length of these heads measures a remarkable .00015", with both gaps precisely aligned for exact coincidence. Mumetal shielding is used and each unit

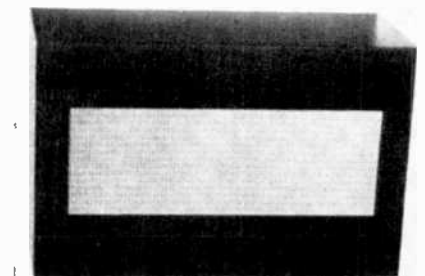
is supplied with shielded conductors. It is readily adaptable for installation in existing tape transports, or recorders. Detailed specifications and price may be secured by writing Dynamu Magnetronics Corp., Div. of the Maico Co., Inc., 21 North 3rd Street, Minneapolis 1, Minn.

GERMAN BUTOBA



Audio-Master Corp., 17 East 45th Street, New York City 17, will merchandise a new portable battery operated tape recorder, dubbed the BUTOBA. This machine is an import from Germany, manufactured in the Black Forest. It requires no electrical connection and is ideal for out-of-doors recording. It has speeds of 1 $\frac{7}{8}$ and 3 $\frac{3}{4}$ ips, frequency response of 50-9000 cps plus or minus 3 db, and a precision hand wound motor, which is spring-powered and of special construction. It also features a recording time indicator, magic eye control of recording level, simple push button operation, and in addition to recording with the microphone, it is also possible to record telephone conversations and radio programs through a special input. For complete details, specifications, and price of the BUTOBA, contact Audio-Master Corp.

ISI SPEAKER



International Scientific Industries Corp., 2374 East Hiway 24, Colorado Springs, Colo., has introduced the ISI speaker system. According to the manufacturer, the ISI enclosure differs fundamentally from previous systems and obtains excellent base response without resorting to resonant devices or horn loading. It also features small dimensions (14" x 9 $\frac{3}{4}$ " x 22"), and the manufacturer claims it will handle 50 watts of program material through its full frequency range. When used in pairs, these speakers are excellent for stereophonic reproduction. For additional information and price, write to the manufacturer.

TAPE CLUB NEWS

Solomon Kessler of Portland, Maine, has been named chairman of the Charitable Contributions Committee of Tape-Respondents, International. The purpose of the C-C-C is to permit members to donate regularly through the club to any of the nationwide foundations which raises money to fight the various dread diseases. A most worthy committee indeed T-R-I.

T-R-I members in Europe are anxiously awaiting the outcome of the European Tape Recording Competition conducted recently, with Giorgio Rosazza of Italy in charge of arrangements. The competitors are doing the judging themselves, but they are permitted to vote only on the entries of their opponents. The current competition is entitled "How I Record Music" and includes live recordings, dubs and recordings from the air.

The Blind Services Committee of Tape-Respondents, International is progressing rapidly. A condensed edition of the club's directory is now available on tape for blind members as well as a complete edition of the last issue of Talking Letters, the club's bulletin. The format of the directory follows that of the regular directory, except that it contains only the names of the B-S-C members. G. H. D. Moore, Jr., of Jackson, Miss., is the reader for Talking Letters. When the reading was completed, both master tapes went to Carl Slavens in Kansas City who is making dubbed copies for distribution to the blind. Blind members desiring dubs may send their own blank tapes to Carl. The dubs will be made at any speed desired, either dual or full track. In either case, enough tape should be sent for a 60-minute recording of each item.

JOIN A CLUB

TAPE RESPONDENTS INTERNATIONAL

Jim Greene, Secretary
P. O. Box 125, Dept. T., Little Rock, Ark.

THE VOICESPONDENCE CLUB

Charles Owen, Secretary
Noel, Virginia

WORLD TAPE PALS, Inc.

Marjorie Matthew, Secretary
P. O. Box 9211, Dallas 15, Texas

INTERNATIONAL TAPE WORMS

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

AUSTRALIAN TAPE RECORDISTS ASSOC.

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

UNITED RECORDING CLUB

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

THE NATIONAL TAPESPINNERS

Carl Lotz, Secretary
Box 148, Paoli, Pa.

THE BRITISH AMATEUR TAPE RECORDING SOCIETY

210 Stamford Road
Blacon, Chester, U. K.



John Berridge, pictured above, is a television technician for the Canadian Broadcasting Company in Toronto, Canada. John has just been elected Canadian Special Deputy for The Voicesspondence Club by our northern members. In this position he will represent the members in his country on the Club's Board of Advisors. John plans a special Canadian news bulletin for the Canadian members which will be distributed to them along with their regular mailings from VS headquarters in Noel.

Members of the Pacific District of The Voicesspondence Club met at Garvey, California, on February 17. The meeting was organized and conducted by VS-er Roy Howard. In spite of bad weather, it was attended by about 50 recordists. The program consisted largely of short recordings sent in by other members from all over the world. The entire meeting, including invocations by Catholic, Protestant, and Jewish ministers, was conducted by tape.

We are happy to include in our tape clubs listing The British Amateur Tape Recording Society. This organization does not print a bulletin for its members, but rather circulates a monthly bulletin on tape. Members in the U.S.A. do not have this circulated to them, but may obtain a dubbed copy by forwarding their own tape and a combined postage and dubbing fee of one dollar. The magazine plays for one hour. At present, the over-seas subscription to this organization is \$2.00 per annum. Membership to blind and infirm persons is free on application.

This Society is Britain's first national tape recording organization. It was established in October, 1956, from the old A.T.R.S. which was a Society of under 50 members. Since it became active on the 1st of January last they have appointed officers in over 10 area regions throughout the United Kingdom, as well as having obtained a membership of over 200. Over-seas members are welcomed.

A new tape club, dubbed the American Tape Exchange, has been organized. Although this organization already has members all over this country, as well as abroad, it would welcome more western pals. Anyone interested may contact Stuart Crouner, 181 East Main St., Gouverneur, New York, by sending him a 3" or 4" reel, recorded at 3 3/4 ips.

Official moniker of the Australian Tape Recordists Association club bulletin is "Resound." We have received some back issues of this bulletin which we read with great interest. We note in one issue that the club offers its members a special technical assistance service. Arrangements were made whereby members of the South Australian Branch answer inquiries or give advice to those club members who find themselves confronted with some particularly troublesome recording difficulty. Queries may either be written or taped.

World Tape Pal Virgil C. Nickerson of San Francisco is credited with enrolling approximately 25 men and women in the Tape Recording Club of Senior Citizens Center, Maritime Museum, Aquatic Park, San Francisco. This Center is a social center providing recreation and instruction for persons from 60 to 90 years of age. Among its other activities, it offers classes in Spanish, ceramics, hobbies of all sorts, and folk dancing. Congratulations Virgil, for such worthy effort.

One of the newer tape-sponding clubs, The National Tapespinners, recently welcomed its first member outside the United States. He is Cyril H. Jervis of Puntas Arenas, Chile. Shortly thereafter, tapespinners from Japan and India also joined. Carl Lotz, National Tapespinners secretary, remarked that the club is looking forward to members in many other countries.

Wayne Wilson of 1616 No. 52nd St., Omaha, Nebraska, is president of the Omaha Tape Club. Anyone in the area who wishes to join may contact him at the above address or call WA. 1368.

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ISSUE HIGHLIGHTS

Volume 2, No. 1: Radio Tape Network, Choosing a Mike—Part II, How to Erase Tapes.

Volume 2, No. 2: Building an Electronic Mixer, Mike Stands, Orchestra Recording.

Volume 2, No. 3: Music Can Make Your Mood, School Use of Recorder, Orchestra Recording, Tape Recording Glossary, Volume 2, No. 5A: Sounds to Keep Your Trip Alive, Recording Bands Outdoors, Capturing Insect Songs.

Volume 2, No. 6: Recording Radio and TV Bloopers, Automatic Slide Shows, Beautify Your Recorder, Tape Filing System, Stereophonic Tape.

Volume 3, No. 1: How Tony Martin Uses Recorders, Joining a Tape Club, Tape For Folk Dancing, Recording Xmas Music.

Volume 3, No. 2: Converting to Stereo Sound, Meet "The Monster," Make This Mike Stand, Tape Teaches Speech, Make Money With Your Own Radio Show.

Volume 3, No. 3: Recording Bird Songs, Tape Splicing and Splicers, Stereo Soundorama, Recording String Instruments, Build This Sound Equipment Case.

Volume 3, No. 4: Using A Sound Screen, Recording "Strange to Your Ears," Using Low Impedance Mikes, Can You Sell Off-The-Air Recordings?, Theater Sound on Tape.

Volume 3, No. 5: Take A Slight & Sound Vacation, Recording the Woodwinds, Taping Beethoven's Sixth, Recorder Control Center.

Volume 3, No. 6: Tape Covers the Conventions, Show Off Your Tapes, Recording Brass Instruments, Tape on the North Atlantic.

Volume 4, No. 1: Special Stereo Issue: 10 Ways to Enjoy Stereo Sound, Sound In The Round, Stereo—Why Bother? Directory of Stereo Equipment, Catalog of Recorded Stereophonic Tapes.

Volume 4, No. 2: Beat The Horses, What You Can Do About Magnetic Head Wear, Six Tricks For The Tape Fan, How You Hear Audio Perspective, Viny, Twisty-Twiny . . . Oh Nuts!, Stereo Recording Session, 1956 Roundup.

Volume 4, No. 3: Stereo Unlimited, Print Through, Fact or Fable?, You Can Build It Yourself, Improve Your Audio Album.

Volume 4, No. 4: Stereophonic Recording Tricks, Students Tape It Easy, Build This Portable Mixing Console, New Tape Cartridge Developed.

Volume 4, No. 5: Sounds of Mexico, Extra Income From a Recorder, Add Sound to Your Movies, Questions on Stereo.

Volume 4, No. 6: Big Brain in a Box, Part I, Operation Moonwatch, Placing E-V Speakers for Stereo, Sound in the Round—Part II.

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Severna Park, Maryland

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HI-FI TAPE RECORDING
Severna Park, Md.

TAPE IN EDUCATION

By JOHN J. GRADY, JR.



THE greatest reservoir of potential tape recorder purchasers consists of students, especially those who have been in classes of alert instructors using audio equipment. Every curricular subject, which provides students with the opportunity to check their individual progress, because of the availability of tape recordings, is due to become a popular elective in the selection of major and minor courses. Audible proof of advancement encourages an ambition to excel. And ambitious students with a definite objective in life are the inspiring scholastic pace-setters, who provide the most satisfying reward to educators. For it's the students with ambition who make up that noble brigade, which insures permanence and continuing progress to all traditional arts and sciences. Such students are the ones who carry on into posterity.

For instance, take the case of Frederick W. Schaupp as a splendid illustration. Bill Schaupp, as he is known to his schoolmates, is a senior at Inglewood High School, in California. Coming from a musical family, Bill is majoring in music. His primary objective is to become a musical instructor. That's the practical feature of his ambition. But way beyond the practical angle, there's a greater goal for this ambitious student. There's a desire to create. And pointing at the satisfaction of this desire, Bill Schaupp is carefully planning his education.

The music department at Inglewood High School has tape recording equipment. The use of this equipment naturally inspires the desire for ownership. With the school having tape recorders, and with teachers also having them as personal educational tools, Bill Schaupp decided he needed a tape recorder to aid his progress in music. So last summer, during vacation, he got a job with an electronics distributor. As a result of the friendly interest of the distributor—and employee's discount—Bill bought an expensive professional-type tape recorder. It is an important unit in Bill's own private well-equipped music laboratory, a separate structure in the rear of his parents' home. It is here that the ambitious student retires for study and experimentation.

At the recent ALL SOUTHERN CALIFORNIA BAND AND ORCHESTRA FESTIVAL, at El Segundo High School Auditorium, Bill Schaupp and his tape recorder were kept busy. During the competitive auditions, Bill made 30 recordings for school bands and orchestras entered in the contest. These are the recordings that music instructors will play back for their units, so that all participating students can audition and appraise their own efforts. It is such contact with efficient tape recordings which is making stu-

dents and parents audio conscious, and is building up the home market for tape recorders. And it's the interest of music instructors, parents and students in his recordings, which confirms Bill Schaupp's belief that a tape recorder is a necessary implement in modern music instruction.

This fall, Bill plans to enroll at the University of Redlands. After thoughtful investigation, he selected what is termed a smaller college, but one which offers excellent instruction in music. There can be no doubt that this ambitious student will secure maximum benefits at the college of his choice. And in return, it seems a certainty that his expert knowledge of music recording will provide a worthy contribution to the student activities at the beautiful college in the heart of the California orange groves. TAPE IN EDUCATION extends congratulations and best wishes to student Bill Schaupp. He exemplifies the youthful enthusiasm for knowledge that assures to our country another generation of useful and competent citizens, the well-prepared ones, who will be fully equipped to instruct those who, later, will become students. Bill Schaupp will be a welcome addition to the teaching profession. After all, there can be no more worthwhile career than training others in the arts of civilization.

TAPE IN EDUCATION invites educators to supply inspirational information about students, who have been encouraged to develop an ability to express themselves, as the result of PROOF of ability—or talent—through contact with educational tape recording. Many students, after listening to a tape playback of some vocal effort of theirs, have been sparked to attain proficiency in speech, music or drama. Details of such scholastic developments will be welcome. And the publishing of them will help to inspire other students. Please address any such material to TAPE IN EDUCATION, HI-FI TAPE RECORDING, Severna Park, Maryland.

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TEEN TAPERS

BY JERRY HEISLER, National President



BY using an inexpensive device known as an inverter, all recordists can broaden the use of their recording equipment by having a remote recording set up using an inverter in their automobiles.

An inverter is an instrument which converts the 6 or 12 volts of the automobile electrical system into regular house current sufficient to operate tape recorders, phonographs, and other audio equipment in an automobile.

I have been doing some experimenting with a typical unit loaned to me by the American Radio and Television Corporation of Saint Paul, Minnesota. The inverter unit is mounted in the trunk of my car and I have cables running under the rugs to the battery and back to the remote control box mounted on my dashboard. The remote control box contains an ON-OFF switch and a regular outlet to which my Revere tape recorder is plugged into when I operate "mobile." It's as simple as that and the setting up of the recording system involves merely plugging in the recorder. Installation of the unit itself is easy and I accomplished it with only a screwdriver and pliers in less than an hour. The main unit was placed in the trunk and the cables were run under the back seat and fished under the rugs. No rugs were removed. The cables were run to the battery through the regular wire hole in the firewall of the car. The remote cables were run from the dash to the trunk under the rugs also. A gas station attendant drilled holes in the trunk and the unit was mounted down with brackets provided for that purpose with the unit. Thus the installation is complete. Now what can be done with such a set-up? I set out to experiment.

One evening I put my recorder on the seat beside me, placed a microphone on a neck attachment, and drove off to seek my fortune. Many recordists are interested

in gathering interesting sounds. I got some traffic noises, voices outside of the neighborhood theatre, and then I went over to the local drive-in ice cream stand where all of the kids hang out. Everyone had tremendous fun talking into the recorder, and the sounds of a busy food dispensing operation were taped. The kids also enjoyed some hi-fi music which I brought along on another tape. On my way home, I found it entertaining to enjoy some of my favorite records which I had prerecorded, without the commercials and other annoying interruptions provided by the radio. I stopped on the overpass of a superhighway and got some sounds of fast moving cars. Thus concluded one night with the inverter. This gives just a brief idea of some of the fun you can have. I began doing a lot of thinking on the matter, and can see the many other purposes that such a unit can be put to.

The Teen-Tapers clubs in the high schools can put these units to great use. Those clubs working on the sound archive idea, can now make recordings of homecoming celebrations, football festivities, street dances, and all other events taking place outside of the school. The "mobile unit" can also be used to play back tapes thus providing music for outdoor dances. If the club operates in the capacity of a radio station, remote broadcasts can be added to the agenda with the unit recording interviews, local events, on the spot reports of accidents and many other events. The facilities of a mobile unit will also provide the club with interesting material to include in tapes that they plan to exchange with other schools. The addition of an inverter to the equipment of a school tape club would make the club able to operate in any situation and to provide additional valuable services to the school while having much fun in doing it.

Individuals can have tremendous fun with a remote recording system in a number of ways. Imagine having hi-fi music in your car. Your favorite recordings can accompany you on picnics or on drives. If you enjoy musicals, why not attend the local drive-in theatre and capture the complete sound track on your tape?

Do you like snooping around for news? Make arrangements with a radio station to obtain on the spot items for them, or aid the police with on the spot accident reports.

If you enjoy exploring nature, or are interested in natural common sounds, see what sounds can be found in your community. A school could develop quite a sound effects library in this manner.

One use that particularly appealed to me is the element of exploring human nature and studying different people. In my particular remote set up, my recorder can be electrically controlled by extension

cables. This makes it possible to put my unit in the trunk. Doing this, and using a small lapel microphone, you can make recordings of people unknown to them. This can be very interesting and very amusing. Sort of on the idea of the "candid camera" which appeared on T.V. for some time. This use is not at all intended to be unethical and sneaky, and to provide people with embarrassing moments. Most people are microphone conscious and tend to become "hammy" when confronted with one. A hidden mike lets you capture people in their real way of life. It can be quite interesting.

On the practical side of things, such a set up might enable the user to earn money by conducting surveys for people. For example, gas station chains have been known to conduct surveys of personnel by seeing how courteously they treated customers. This and any type of survey could greatly be aided by a mobile recording system which could capture conversations and statistics anywhere at anytime.

Yes, teens, there are many, many projects and certainly a tremendous amount of fun for you with a mobile system. All that is required, in addition to your present recording equipment, is an automobile inverter such as the ATR unit mentioned here. Various models are available with the cost averaging about \$50. This would certainly be a worthwhile investment for a school club or an individual, and would make the recording equipment of the user much more versatile, while providing great opportunity for profit or fun with the equipment. It's something to look into, and to plan for, in my opinion.



The inverter may be mounted in the trunk of the car, with wires leading to the dashboard or may be mounted under the dash itself.

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TAPES TO THE EDITOR

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

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

To the Editor:

There is no doubt in my mind that video tape recording will develop into the ultimate in the reproduction of sight and sound.

Being extremely interested in electronic development, especially as applied to television, I would appreciate it if you can tell me where I might obtain all possible information concerning the statistics, specifications, theory, etc., of video tape recording.

If there are any 16mm amateur cinematographers like myself who agree on the eventual superiority of video tape recording over film, I would very much like to correspond with them via tape. It will certainly be interesting to see what happens as video tape recording advances and motion-picture film becomes a poor second best.—*Christopher Mohr, 103 Van Siclen Ave., Brooklyn 7, N. Y.*

We would suggest that you contact the Ampex Corp., 934 Charter St., Redwood City, Calif. This company produced the first commercially available video recorder, which utilizes a revolving head, and runs at a speed of 15 ips. Other video recorders using ordinary heads run at a speed of 120-180 ips.

To the Editor:

This is in rebuttal to the suggestion of Lee and Lorraine Ellis whose letter appeared in this section March 1957. As the director of the Blind Services Committee of Tape-Respondents, International, I find the suggestion that the tape clubs unite highly against my liking. It is because T-R-I stands alone that the uniqueness of its many fine services are so apparent.

And while I'm at it, I would like to raise a question and any help which the reader can send me will be much appreciated. Is there a recording head which is narrower than the standard dual track recording head? Would it be possible to design a recording head which records a track .01 inch wide? I am in correspondence with certain blind persons overseas who are vitally interested in designing and constructing their own tape recorders and any suggestions pertaining to this project would be most appreciated and will be forwarded in their entirety to my overseas tape-respondents.—*Victor M. Torrey, P. O. Box 136, Phoenix, Arizona.*

There are specially made heads available which will record less than ½ track but we doubt that you can get down to .01 of an inch.

To the Editor:

While not casting any aspersions whatsoever on the technique and artistic abilities of Mr. Jordan and Mr. Cunningham, who are obviously recognized leaders in their field, I think it is unfortunate indeed that the "How You Hear Audio Perspective" article appearing in the January '57 issue

was colored by so many unnecessary references to the controversial and (many would say) outmoded Theory of the Evolution of Man. I refer to such statements as "It all began a long time ago and lies deep in the origin of man as an evolved animal" and some eleven similar statements. While this kind of thinking affords an easy "explanation" of certain phenomena and a sop to those who deny the existence of God and therefore their own responsibility to Him, it does not make a scientific article sound either more "academic" or "scholarly." It is not necessary to the meaning or clarity of this article; and after all, there are many eminent physicians, anthropologists, biologists, physicists and other scientists who would totally disagree with the authors' premises. I believe that it would be unfortunate indeed if such statements should be allowed to color your excellent magazine in the future.

Keep Hi-Fi TAPE RECORDING coming! It's a wonderful help to us and virtually our only source of reference and contact with current developments in the tape recording field.—*Edwin B. McDaniel, M.D., Chiangmai, Thailand.*

To the Editor:

Could you please define "high fidelity." I have heard of recorders and record playbacks selling anywhere from \$39.95 to \$1,000, records from 79¢ to \$4.95. Surely they are not all hi-fi! Where does the term "hi-fi" begin and end?—*Burns L. Dunford, Salt Lake City, Utah.*

The term "hi-fi" originally meant "high fidelity," which in turn means the close approximation of the sound as originally recorded. Once the term became popular, it was latched onto by the advertising men and now we even have "Hi-Fi" lipstick. The only criteria for judging whether the fi is hi, is how it sounds to you. In general, the term was originally restricted to good quality units capable of reproducing the full range of sound.

To the Editor:

Thanks for the very enlightening article by Geoffrey Grant exploding current myths about print through (Feb. '57 issue). May I call attention, however, to the picture, lower right, page 21. The only purpose it serves is to show tape left on the takeup reel. Unfortunately, this picture also shows the recorder (a V-M Tape-O-Matic) improperly set up for operation. With the A.C. cord leading directly out of the machine, as shown, there is danger that it will interfere with the free movement of the supply reel. In the center of the back panel is a little V clamp. The A.C. cord should always be led out through this clamp, which is clearly visible in the picture.—*Karl A. Windesheim, Urbana, Ill.*

Our thanks for calling this to our attention.

QUESTIONS & ANSWERS

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

Q—At this time I have two dual track tape recorders and really enjoy them. I am very interested in tape recording and obtaining tapes of pre-recorded music and sounds. My question is: Am I wrong not to have a recorder for stereo tapes and recording? Also, is there any way to convert these recorders to stereo—they are a Revere and a Knight. I plan on obtaining another recorder in the future. Would I be wise to obtain a stereo recorder at this time?—A. W. M., APO, New York.

A—We believe that stereo is the very best way to hear and enjoy music. In fact, the appearance of stereo on the market has made every hi-fi outfit obsolete. We think you should definitely plan to convert to stereo sound. In the near future, Revere will make available a conversion kit so you will be able to convert your present machine to stereo. You then can use your other recorder as the second playback channel. The conversion will enable you to play back stereo but not record it. In order to record you must add another recording amplifier.

Q—I am interested in playing my recorder through an extra speaker. I have made one hook-up but could not get any volume. There are some settings on the speaker with which I am not familiar and perhaps they are not set right, although I did experiment and still no luck. It is a 12 inch public address speaker and has settings for 500, 1000, 1500 and 2000 Ohms. For input there is a "Line" and "Voice Coil." The outlet for the input is a 4 prong plug.—J. A. K., Cleveland, Ohio.

A—The output from your recorder is in the neighborhood of from 4 to 8 ohms—the input on your speaker is 500 up. You will need a transformer, the 8 ohm side of which is connected to the output of your recorder and the high side (to match one of the inputs on the speaker) connected to the speaker. Your description of the speaker is not full enough for us to determine properly the whole story. It sounds as though you might have a dynamic speaker on your hands. If so, current must be supplied to the field coil in addition to the current from the recorder to the voice coil. Any kind of wire (ordinary house cord is good) may be used to connect the output of the recorder to the speaker. You may hook up as many speakers as your recorder will power.

Q—I have been taking your magazine for a year and have not found answers to the following questions. First, what causes tape to stick and how to prevent it.

Secondly, I would like to know the proper way of demagnetizing heads. There have been articles in *The Voicerespondent* and Hi-Fi TAPE RECORDING, but they do not explain how you can get the Audio head demagnetizer, or the EZ-Rase bulk eraser, both of which I have, down into that slot close enough to demagnetize the heads without taking the machine apart to get to the heads. Is it necessary that the demagnetizer come in direct contact with the working points of the heads in order to demagnetize them? Most of the time I have been rubbing them over the top and I am wondering if that does any good. Also, I would like to know who makes the rotary field or Dynamotor converters. I would like to know the names of the companies who make these converters for use in automobiles.

While I do not want to criticize, I believe a mistake was made twice in those two articles on field recordings by the authors who state that they made the last recording of the last steam locomotive in the Middle West. That is pretty far-fetched, because there are quite a few steam locomotives operating in the Middle West. They may not all be in active operation at the moment, but at least half are in operation at any given time. The roads you'll find them on are the Pennsylvania, some B & O, operating between Willard and Chicago; the Nickelplate must have about 75 big Berkshires in operation between Chicago and Buffalo, and at the time the article first came out, the CB&Q had 20 heavy freight locomotives in service between Chicago, Galesville and Council Bluffs. Also, the Union Pacific is operating a few steam locomotives out of Omaha.—L. E. G., Sanduich, Ill.

A—Tape sticking usually is the result of an accumulation of dirt or particles worn from the tape on guides and heads. Usually a good cleaning of those parts will stop the sticking. The pressure pads, which hold the tape against the heads should also be cleaned or replaced as a waxy accumulation sometimes builds up on them and causes sticking and squeal. The head demagnetizer works by shooting an alternating magnetic field through the core of the head. The unit is applied to the head then removed slowly to a distance of about three feet before the current is cut off. It will be effective if placed in close proximity to the head provided the head is not thoroughly shielded with metal. While it is better to get the demagnetizer right against the head, you are still demagnetizing it when a powerful AC magnet is brought close to it. Regarding rotary type converters, write to the Carter Motor Company, 2755 W. George Street, Chicago 18, Ill.

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Photo by Salmon Studios

The producer gives point cue following "be ready" signal (arm extended, palm facing outward) in studio. A copy of the dialogue must be written matching that of the taped performer to be erased. The last words, or "cue out" of the dialogue preceding it should be added, so that the person who substitutes will work on "cue." The stand-in covers taped pause with copy matched to the original.

Tape Spectacular

by **Sheldon O'Connell**

... put yourself in the picture with an all-star cast.

YOUR friends can trade comedy lines with Bob Hope, banter with Bing, play lead or supporting roles in headline dramas boasting an all-star cast. With a radio and a tape recorder you can use *Dragnet*, *Inner Sanctum Mysteries*, *Radio Theatre*, and a host of other top network dramas as vehicles for your own radio production.

It's easy if you're handy with a stopwatch or splicing block and it can be a lot of fun. For every part you'd like to use simply delete one of the original performers from a recorded play. This calls for some very close listening and a sure hand with the erase switch, but the results make the finished product worthwhile. There's an unlimited choice of program material, just consult your newspaper's program listing for the half hour or quarter hour show to be broadcast at a time convenient for recording. The more name stars or celebrities it features the better, it won't cost anything extra in time, and will give an added boost to your tape spectacular.

Radio material is more suitable than television sound. Dialogue in the audio-visual medium is inclined to sketchy. When listening to a drama recorded direct from

television you'll notice frequent pauses, scene changes without bridges or introduction, audience reaction to visual effects where sound is secondary or absent. Almost any radio drama, however, is at once a skillfully produced source of material for this purpose. The opening theme, announcements, dialogue, transitions, bridges, effects, they're all there, contrived to develop and sustain atmosphere, perhaps suspense, comedy or excitement all in sound.

When recording the original performance you may take a direct feed from the voice coil or speaker leads in the radio, or simply place the microphone in front of the radio speaker. A full recording level will assure that the playback volume will be strong without introducing line noise, and it will need a firm high volume on playback so everyone can follow along.

One half hour reel of tape should be enough. Radio programs run under that length from thirty seconds to a minute. When ready to tape, wait for the network sign-off of the preceding program, then a few more seconds for local station identification and start the tape.

Local station identifications usually end with about three seconds to spare before the network is rejoined. In this way there'll be a "clean" opening on the tape. While the program is being recorded you might save time by listening carefully as the performers struggle on, beset by one calamity after another, never dreaming that some of their careers are to be spliced short. Following the story line closely will make editing easier and help you observe many production hints, useful during preparation of the script and actual production of the spectacular itself. One audiophile went at the project with too much enthusiasm, and instead of doing the later editing one phase at a time, tacked up pieces and bits of dialogue in a circle on the workbench, planning to assemble it another day by guess and instinct. It was quite a production, the hero shot the townspeople, the villain eloped with the sheriff, and the horse won the girl. When the program has been recorded, the next step is to run the completed tape back into playback position.

The machine might be placed comfortably close, so you'll be able to reach the stop switch easily, while making notes. Once you've decided on the performers to be retained, and depending on the size of the planned spectacular, the one or two or three to be dropped, it's time to make notes.

A copy of the dialogue must be written matching that of the taped performer to be erased, plus an important addition, the last words, or "cue out" of the dialogue preceding it. In this way the person who substitutes for the original will work on "Cue." It isn't necessary to make a complete copy of what went before, just the final few words, so the stand-in will recognize it as a signal to step into the taped pause following each cue.

A sound effect is often a cue and can be written as such when it comes time to prepare the stand-in's script. Preparing a script isn't as formidable as it may sound, considering that a major share of the material plus supporting players will be on the tape, it's just a matter of copying the roles to be deleted.

Before altering the original tape in any way, you'll first need to make a written copy of all dialogue in the roles you plan to use, also the names of the characters in the drama, in the order of their appearance, just the name will be sufficient. In the case where their part leads into a cue for the stand-in, then add the final words of the cue opposite the name of the character who speaks them.

When preparing the final script, the words should be printed clearly and distinctly. A generous space between the lines will make them easier to read. Names of the characters printed in capital letters and underlined.

Now we come to edit the tape. There are two methods, both of which will take time, with one, however, you won't have to cut and splice the tape, and in this way may put two half hour extravaganzas on dual track tape but it requires the coordination of a jet fighter pilot. The other method involves cutting into the tape and while surer, doesn't allow use of the second track.

An easy feature in editing a radio show is that "cross-talk" is rare. One person reads his lines, the other comes in quickly makes a response, the first picks it up again. Crosstalk is frequent in television because the eye can identify the speaker. Your task now will be to magnetically erase those unwanted sections of dialogue in varying lengths. This can be done by cutting the tape after

the last word of a section you want to erase . . . then running the tape back to the start of that dialogue and just before, switching to erase after you hear the cue, which is marked on your work script also, and letting the tape run through the guides, past the erase head and free.

The tape can be joined again at exactly the same place it was cut. The other method will save you a lot of splicing but carries a higher mortality rate. The casualty risk lies in erasing too much at one fell swoop. With this second method you work by a stop watch, or sweep second hand of a wrist watch. With the indicator on playback, start the machine at a section you plan to erase and time it, then run the tape back to where the erasure's to begin, the record level is turned to zero, the indicator then turned to erase or avoid or minimize the slight record start sound. The tape is then run past the erase head for a period determined by the earlier time check, minus a second or so, switch quickly to playback and it should be right.

Another procedure similar to the second one will serve as well without the stopwatch. A placar or light marker placed one full reel turn before the dialogue you want to keep will fall just at the time you should switch to play. A few experiments with other material will shorten the margin of chance and allow full use of a dual track tape.

Once you've edited the material and prepared script you'll discover that the work that went into it was well worthwhile. You and your friends will get real enjoyment out of taking part in headline dramas along with seasoned professionals. There can be a lot of laughs too, when someone kicks a line, misses a cue, or runs headlong into a taped performer coming from the other direction.

If there's a record player handy, the original edited tape might be dubbed or copied onto a single record. In this way the tape recorder can be used to record the augmented performance, allowing the stand-ins to hear themselves portraying some of the characters in an action-

A stop watch is useful in gauging time of inserts and erasures, and it allows full use of dual track tape without splicing, but requires greater care to avoid "cut starts" or runover, so that you don't end up erasing more than intended.





Major radio productions like this one are a gift wrapped source of material for home tape spectaculars, complete with introductions, musical bridges, sound effects and fast, paced action.

packed radio play. Cost of dubbing the edited tape to disc is reasonable, and shouldn't require more than both sides of a single disc at slow speed. Even better, however, would be two tape recorders; one playing the edited tape, with the second recording the output of the first, together with the stand-ins' parts, thus producing the finished program.

The skillfully produced radio story can be likened to a sleek diesel train, whoever climbs aboard, will go right along with it. Nothing will ruffle the composure of these performers, gales of unscripted laughter, ad lib remarks, fluffed lines, all are met by professionally spoken dialogue delivered straight, unwittingly adding to the merriment.

Apart from the free as air use of regularly broadcast dramatic stories, quiz shows, audience participation and the like, there are the seasonal programs that can form treasured additions to your family library of recorded tape. Plays at Easter, Christmas, Thanksgiving, dramas with a deep moral or spiritual significance that benefit young people of the family who need no encouragement to take part.

On holidays and many special occasions through the year, broadcast stations schedule large portions of entertainment fare in keeping with whatever observance is due. St. Patrick's Day for example is often prefaced with a broadcast of "The Informer" as well as traditional plays about the Leprechaun and his pot o' gold associated with folk lore of the Emerald Isle. Easter often includes a few revivals or re-enactments of great stories from the past. October 31st ushers in a variety of Poe's Hallowe'en chillers. Dicken's Christmas Story, too, might be worth jotting down as well worth catching the next time around.

While television dramas aren't readily adaptable to use on tape, a lot of the quiz shows are. They're easy to edit, loaded with pauses to give the contestants time to come up with the right answer, and alive with audience reaction. A few magnetic erasures from a taped copy of "Do You Trust Your Wife," "Name That Tune" and "Guess the Sound" can provide house party fun and keep them guessing.

Comedy shows with their rapid exchange of patter can carry a double barreled effect, especially if the punch lines aren't delivered quickly enough, a situation where the audience laughs before the joke is told, or for no apparent reason half way through it.

Open political forums and panels offer many opportunities for revamping those carefully phrased questions asked the venerable Mr. Congressman by a dignified moderator.

Launching into this job of unpaid independent producer brings with it a large share of responsibility both to the cast and the refreshment committee, but it has a compensating feature, too, the producer gives the "stand-by" signal to performers, hand held up, palm out, followed by a pointed cue when it's time for the stand-in to read his lines. The producer should wear earphones when recording stand-ins along with the original edited tape to maintain realism and a good sound balance.

No matter what material forms the framework of your tape spectacular, or the glitter of its radio, film and television co-stars it's our hope that editing and revisions meet with greater success than those of the audiophile we met earlier. His most recent epic started out as a straightforward tape copy of Conan Doyle's "Hound of the Baskervilles" starring Basil Rathbone as the inimitable Sherlock Holmes. Very little editing was required to convert it; however, given a set of circumstances that turned some sections back to front, miscalculated timings and a ringing doorbell during a crucial splice it developed into a mystery that could well challenge the perception of the great Doyle himself.

Starting with "Well, goodnight, folks, we're late!" the plot quickly thickens, after some back to front gibberish that doesn't offer a single clue it seems Sherlock Holmes is arrested for baying at the moon, the hound dog puts Watson's notes together and solves the mystery and "Elementary" is marched off to jail. The really singular thing about it, however, is that the horse wins the girl and he wasn't even in the show!

Tape Goes to a Folksong Festival

by Edward L. Buchanan

... numerous jaunts into the mountains of Kentucky
with a tape recorder provide this woman
folksong collector with authentic ballads.

TAPE recorders had a field-day recently at the twenty-sixth annual American Folk Song Festival. On June 10th a large crowd of folk song enthusiasts gathered at the "Wee House in the Wood" in Ashland, Kentucky to witness this annual event. Under the firm leadership of Miss Jean Thomas, the Trapsin' Woman, the Festival has gained nationwide recognition.

The event was covered by press, radio, tv and a recording company. With all this coverage, tape recorders were much in evidence. This writer, head of the recording company, can remember the day not too long ago that Miss Thomas employed his sister to accompany her into the hills and mountains of Kentucky and take down on manuscript paper the ballads and songs of the mountain folk. It was a tough assignment because the singers would always manage to vary the songs a little each time they sung them. Tape recording has obviously solved this problem in that the singers need only to perform once and the music put on paper from the recording.

How Miss Jean Thomas started collecting folk songs is quite a story in itself.

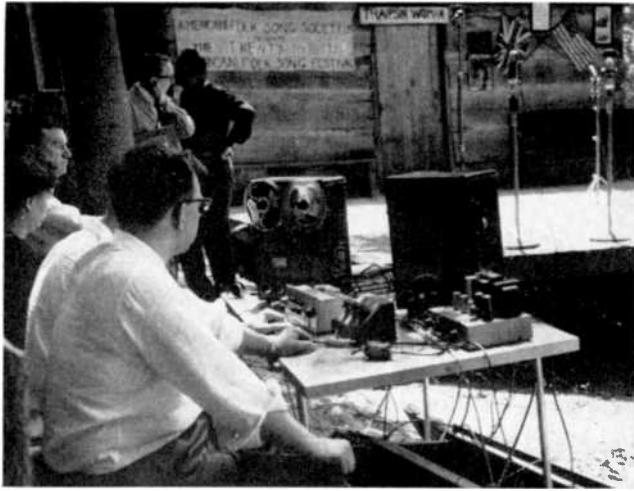
It all started many years ago when she first went into the mountains of Kentucky as a court stenographer, traveling in a jolt wagon over creek bed roads, "with the judge and a passel of lawyers," she heard first hand the music of the mountains from the lips of mountain singers. Her limited background of voice lessons with a Franciscan Nun in her home town, caused her to recognize at a mountain Foot Washin' the singing of traditional mountain words of hymns set to the music of Gregorian Chant of the Sixth Century. She recognized too that the ballads her new found mountain friends sang were those gathered by our Anglo-Saxon forebearers from the wandering minstrels of Shakespeare's time and handed down by word-of-mouth from generation to generation.

Miss Thomas' own words will give us a colorful picture of her beginning experience. . . .

"It so happened that the first ballad I heard sung in a (then) most isolated region of the Judge's far-flung bailiwick, came from the lips of a mountain boy just sixteen years old. He was to be tried for murder and the night before the trial I heard the sweet, boyish voice off in the



The American Folk Song Society performs during its annual Festival, held in Ashland, Kentucky. The young lady standing at the mike is about to render the "Wassail Song." She carries the traditional tray containing a doll, which represents the Infant Christ, an apple and an orange, the symbolism of which is obscure. Seated at the right is Miss Jean Thomas, under whose leadership the Festival has gained nationwide recognition.



After obtaining permission to record the twenty-sixth annual folksong festival, the author set about finding the best set-up for his equipment. Shown above is the position of the equipment chosen in relation to the platform on which the program was presented, arrangement being dependent upon the type of units used.

distance. He was singing an Elizabethan ballad—a wistful tale of a man of high degree who risked his life for a lady fair—a lady fair of beauty bright.

“Breathlessly I seized my notebook and began taking down his words (that was simple—in shorthand). But the music? There was certainly no organ or piano in the ramshackle boarding house where I was staying. So I proceeded in a crude fashion of my own to take down on my typewriter—of all things—the notes of the music the boy was singing. As he sang I struck the keys like this—g g f e g. It gave me the rhythm of his song. I marked off the measures with this sign (/), and after the stanza was completed, I indicated the time. In this it was $\frac{3}{4}$. So now my typewriter recording looked like this (I’m using a simpler song for illustration—The Cherry Tree Carol).

When Joseph was an old man an old man was he
 $\frac{3}{4}$ # g/h.f e g/fe d b/ c b ac/ b b b
 married Virgin Ma-ry t-he Queen of Gal-li lee
 a a gb/ af d gb/ a gf ef/ g
 “When I would get back from the mountains after
 court adjourned I’d hasten to a piano and transcribe my
 typed recording.

“I have been asked how I recognized the notes quickly enough to get them down on the typewriter. The stenographer’s ear is trained to catch sound and transform it instantly into a symbol or character. When a ballad singer sings a note, it is a simple matter for a stenographer, with only a slight knowledge of voice and piano, to transform the note sung into the corresponding letter of the scale.

“All through those early years when I was ‘sharply in my teens’ I carried my portable typewriter wherever I went and I never missed an ‘occasion’ such as a play party, a frolic, a box supper at the school house—where always there was singing—and I took down on my portable every ballad that was sung.

“In time when I forsook the vocation of court reporting for the delightful avocation of ballad hunting in the mountains of Kentucky I brought the centuries-old Singin’ Gatherin’, which I discovered in a remote pocket of the Cumberlands, down into the foothills. Here I found, also in due time, a capable musician who also loved mountain ballads. She very efficiently took down for me in proper

musical notation the ballads as my mountain minstrels sang them, also many rare fiddle tunes.”

The musician referred to by Miss Thomas is this writer’s sister, Glenda Buchanan Mossman. As mentioned before, trips were made into the hills to take down the ballad, but Miss Thomas also brought the mountain and hill folk into to her home, ‘Wee House In the Wood,’ for the same purpose.

Mrs. Mossman’s story of her experiences there is quite interesting. . . .

“When I called at ‘Wee House In the Wood’ I opened the gate and walked along the winding stone pathway to the house that was not tiny at all, but right good sized. It is a most unusual house. To reach the upstairs one had to come outside and go up an outside stairway. And what a paradise for the antique enthusiast!”

“From the big old square piano in the living room downstairs (it really played) to the trundle bed that slid under the big bed upstairs everything was a treasure with a story all its own.

“Small, vivacious, and with energy that knew no bounds, Miss Thomas gathered her friends from the mountains around her, and using their own manner of speech and colloquialisms they were soon at ease as she urged them to sing or play just like they did back home. They would sing their song several times as I wrote it down and played it back to them; but sometimes after the second time some of them would make a slight change, I would make the change too, but then they would be confused as to which it was they sang first. So, we would go on to

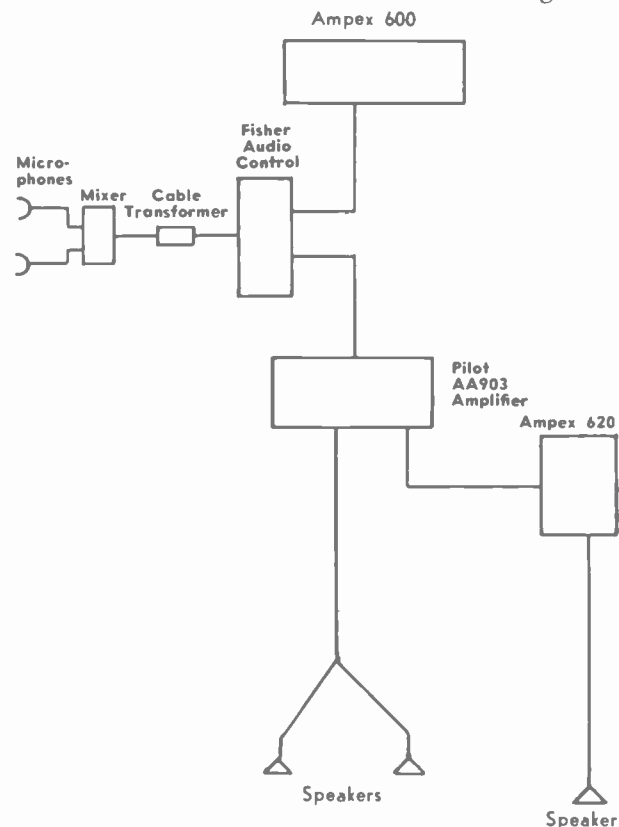


Figure 1: Set-up for recording festival program. Two microphones, a Shure 55eS and Electro-Voice 654, were fed through a mixer into the Fisher 80C audio control. Tape output of this control was connected to an Ampex 600 recorder, while the main output went to a Pilot AA903 10 watt amplifier. This amplifier drove two Electro-Voice SP12-B speakers. A tape recorder take-off, incorporated in the Pilot amplifier, was connected to an Ampex 620 speaker-amplifier, which drove a third speaker.

another song and after a bit return to the first. Being relaxed they would sing it the original way, and then they could tell if I had written it correctly.

"All the while, Miss Thomas kept urging that 'we must get that little inflection of the voice in,' a quaint manner they have of ending a phrase with a sharp, quick lifting of the pitch, and sometimes the same thing in going from high to low notes. But that is rather awkward to do with just cold paper and pencil. Grace notes on staff paper do not come out exactly like those little graces in the style of singing that they have done for generations and handed down from family to family.

"The most difficult piece proved to be a fiddlin' tune played by an old fiddler with a saucy twinkle in his eye, a fast bow on the strings and who called me 'sissy.' No matter how many times he played, it was always the same and no matter how fast I played it back on the piano, he could detect the slightest error."

After the organization and presentation of the American Folk Song Festival which grew from the centuries-old Singin' Gatherin', folk song festivals sprang up like mushrooms all over the nation. The Asheville, North Carolina Folk Festival is to be recommended for its authentic, old time ballad singers and authentic tunes. State tourist bureaus can furnish information as to the various folk song activities in their respective state. *Holiday* magazine frequently lists folk-song festivals.

If one has an appetite for roughing it, he can provide himself with battery-operated equipment and travel the mountain and hill areas as Miss Thomas did. With the proper approach, people will be found to be very cooperative.

In this article we wish to discuss the recording set-up we used. In addition to recording the Festival we also furnished the PA system, so we had the problem of performing both functions with one set of microphones—it being desirable to keep the number on the platform to a minimum.

Figure 1 shows the set-up we used. The two microphones, a Shure 556S and an Electro-Voice 654, fed through a mixer into the Fisher 80C audio control. A Shure A86A cable transformer was used to match the 50 ohm mikes to the audio control high impedance input. The tape output of this audio control was connected to the Ampex 600 recorder. The main output of the control went to a Pilot AA903 10 watt amplifier. This amplifier drove two speakers, one covering one side of the platform and the other high in a tree to cover the crowd on the slope a good distance from the platform. A tape recorder take-off incorporated in the Pilot amplifier was connected to the Ampex 620 speaker-amplifier which drove another speaker on the other side of the platform. The speakers covering the platform sides were Electro-Voice SP12-B's mounted in Cabinart Rebel V enclosures. The speaker in the tree was an 8" unit mounted in an open baffle giving coverage on both sides of it. Using separate amplifiers on the speakers gave us individual control of the speaker outputs, this being desirable because the heavily wooded area caused the crowd density to vary and feed-back howl was easily eliminated. Using the two amplifiers instead of one large unit may seem needless, but furnishing PA systems is not part of our service so we had to utilize what audio equipment we had available that would do the job.

The tape used on the Ampex 600 was Irish double-play.

This kept the number of reel changes to a minimum and the results with this tape were very good. A copy of the Festival recording has been forwarded (at their request) to the Voice of America Agency of the government for its use in broadcasting to foreign countries.

The question that will naturally come to mind now is—What is the first step in preparing to record a festival or similar event? Without hesitation, the answer is—ask permission. Don't expect to walk into such an occasion and be able to set recording equipment where and as you please. Obtaining such permission will involve writing, telephoning, or asking in person the head of the festival activities and this should be done, if possible, some time in advance of the performance date. The people in charge of such events have enough to worry about without being bothered with recordist's problems on the performance day.

With permission obtained to do the recording, the problem of equipment set-up comes up. We've found that an inspection trip a day or so in advance of the performance is well worth the time and effort. The physical set-up of the place can be evaluated and AC outlets spotted. If such a trip is not practicable and most people will have this situation, give yourself as much time as possible to set up your equipment. Get there before the crowd.

Ease of equipment arrangement will of course vary with the type of units used. Low impedance microphones with the use of long cables naturally afford the easiest situation, but a high impedance on a six foot cord really causes trouble in setting up.

The physical arrangement of performance areas, usually a stage or platform, will probably vary some, but one is almost sure to find he can't stand up in front of the platform and hold his mike. We've seen this attempted. The area in front of the platform is usually kept clear for the benefit of the audience. That leaves about four solutions to the problem.

No. 1—If twenty feet of cable is sufficient for the occasion, an extension cable of this length can be added, through proper connectors, to the six-foot already on the mike without too much change in recorded quality.

No. 2—Obtain a low-impedance microphone and microphone cable transformer, such as we used. This will involve \$40-50 (at net prices).

No. 3—Use two microphone cable transformers "back to back." This will cost around \$24 or \$25—depending on how cable is used.

No. 4—Connect on to the output of another recorder that has proper mike facilities. This is a bit risky to depend on unless arranged for in advance.

Provide a stand for your mike, even if it is just a desk stand. Another item that is a must is a multiple AC outlet plug-in such as a rubber cube tap. AC outlets at these affairs are usually very scarce. An AC extension cord will come in handy also.

Collecting folk song material on tape can be a very satisfying experience. To the dyed-in-the-wool tape recorder enthusiast, the solving of difficult situations to get that prized recording makes it all the more interesting and exciting.

It's too bad that tape recorders were not in existence at the beginnings of our musical heritage because one wonders just how much time and events have changed the interpretation of the early ballads and hymns as they have been handed down through the ages.

Look Ma — No Wires



... with this wireless broadcast kit you can radio music to any receiver in the house or use a radio for the second stereo channel without physical connection to the recorder

by

Bart Pierson

BEING an inveterate tripper-over-extension cords, knocker-over-of-microphones-on-stands and general bull in the hi-fi shop type of guy we got to wondering if there was not some painless way to eliminate the connections between the stereo playback on one side of the room and the radio which we use as a second channel on the other.

The answer to all this we found in the shape of the Knight Wireless Broadcaster Kit put out by Allied Radio. This little device is actually a tiny broadcasting station with a very restricted range. Ordinarily such units are advertised under the heading "Amaze Your Friends and Family — Broadcast Your Voice Over Your Home Radio." You can do this, of course, but the gadget has a lot of other uses, as we found out.

The postman had only rung once when we snatched the kit out of his hand. The fact that we had never put a kit together before didn't slow us up. The instructions were full and complete and it was only a matter of a few hours of pleasant work with the soldering iron and we had the unit completed.

The operation of the unit is very simple. The 50C5 tube is an amplifier which is connected to an oscillator tuning circuit. When the unit is energized, an oscillation is set up which becomes the "carrier wave" just as in a regular broadcast station. Any receiving set in the house will pick up this carrier (it sounds like a soft hiss). The current from a tuner, tape recorder, microphone or phono pickup is fed into the Broadcaster through the jack provided. This is amplified and superimposed on the carrier, modulating it.

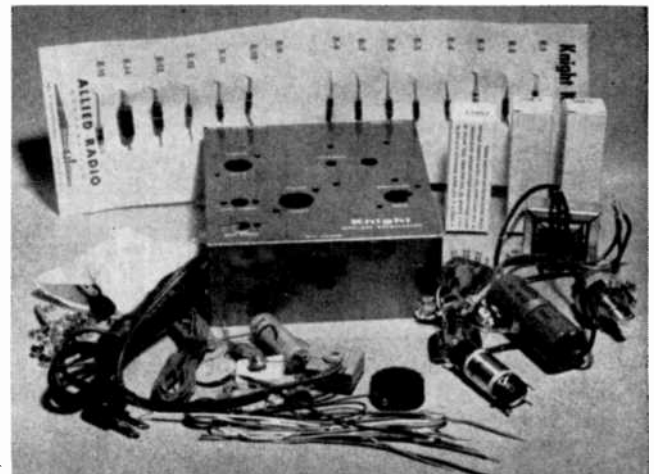
Some of the modulated power which the Broadcaster generates is fed to an external antenna and this radiates a radio field which is picked up by your radio just as any other broadcasting signal.

The Broadcaster is tuned by turning the frequency control with a screwdriver. Your radio is tuned to a dead spot

on the dial, where there are no local stations, and the Broadcaster tuned to this spot. When making this adjustment, have the Broadcaster near the radio so you won't have to run back and forth. If you set the radio dial to a dead spot too near a local station you may get a howl. If so, move to another spot on the dial. The unit can be tuned from 600 to 1600 kilocycles.

If your radio has push-button tuning, you may set one of the buttons to pick up your wireless broadcaster.

These flea-power transmitters are perfectly legal to operate provided the range does not exceed 100 feet at the high frequency end of the broadcast band and 300 feet at the low frequency end. You regulate the power by the length of antenna so don't use more than just enough to broadcast to the radio you want to reach. Too much radiated power will bring the FCC (Federal Communica-



The Allied Radio Wireless Broadcaster Kit as it comes from the package. The resistors are all marked and arranged on a card.

tions Commission) a-knocking on your door. Your neighbors might also object—or they might even eavesdrop on goings on in your house if you connect a microphone to the unit.

To tune the Broadcaster to the radio, first set the radio to the dead spot mentioned above. Then plug in a recorder or phono using the appropriate jack on the Broadcaster chassis. Turn the volume up all the way and turn on the recorder or the record player so a signal is fed into it. If you feed the Broadcaster from a radio tuner, tune in a station.

You then adjust the frequency control by turning it with the screwdriver. We found that this must be done slowly and carefully or you might whiz right by the spot you are looking for.

If there is excessive hum, reverse the plugs in their outlets until it disappears.

There is only one caution to be observed. Do not touch the parts or short them to ground while making adjustments on the Broadcaster. The voltages are not dangerous but they can be mighty uncomfortable . . . we found this out the hard way, too.

The jack farthest away from the front of the chassis is made for a crystal pickup or radio tuner. It has a 2.2 megohm resistor attached to the center pole. This may not provide enough volume to generate a good signal. If so, use a 100,000 ohm resistor in its place. The jack nearer the front is for any high impedance crystal or dynamic mike connections, or from a magnetic phono pickup. If used for a mike, the equalizer circuit (C-1 and R-3) should be unwired from between pins 1 and 8 of socket 1.

After we had completed the unit and tuned it to a dead spot on the radio dial, we plugged in the output from the second channel of a stereo playback recorder. The music was heard from the radio, clear and with good volume.

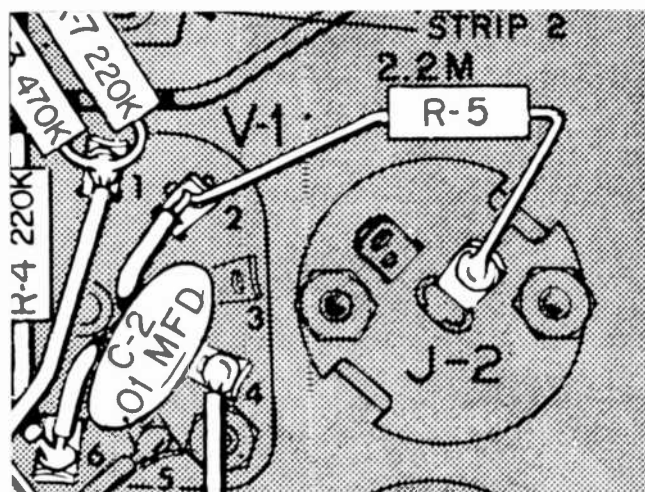
Then the fun began. Not only could we eliminate the wires between the recorder and the second stereo sound source but we even had one channel playing in one room and the second in another. All the radios in the house could pick up the second channel. With two Broadcasters you could broadcast both channels and have stereo in any room in the house that had two radios. Once you start playing with one of these things it grows on you.

But our original experiment, that of providing the second stereo channel without wires, worked very satisfactorily. The output from the second channel of the recorder was fed into the second jack and we did make the resistor change mentioned earlier, to get good volume.

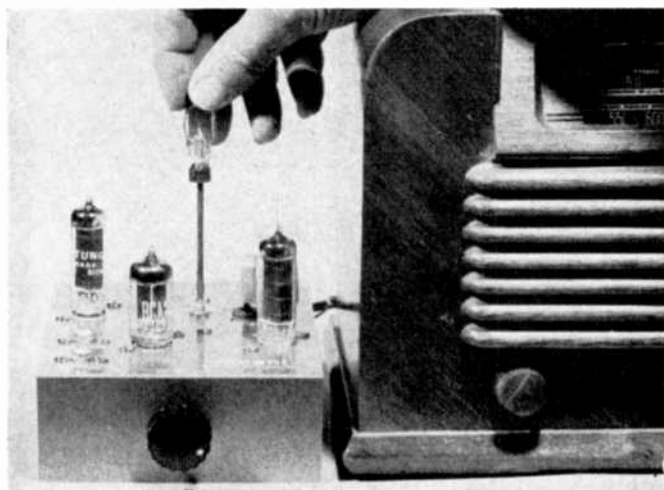
We don't go in for hidden mikes at parties because too many friendships have been broken by chance remarks recorded and then played back. If you do use your recorder in this fashion be sure to play the recording back to yourself before springing it on the group.

We mention this because you can connect the mike to the Broadcaster and broadcast what it picks up to another room in the house. There, you connect the recorder to the radio, using your accessory cord clipped to the speaker terminals and you can record what goes on in the room with the mike in it without any evidence of a recorder. Better check, too, that your transmitter is not going beyond the confines of your own premises or you might provide the neighbors with an interesting evening.

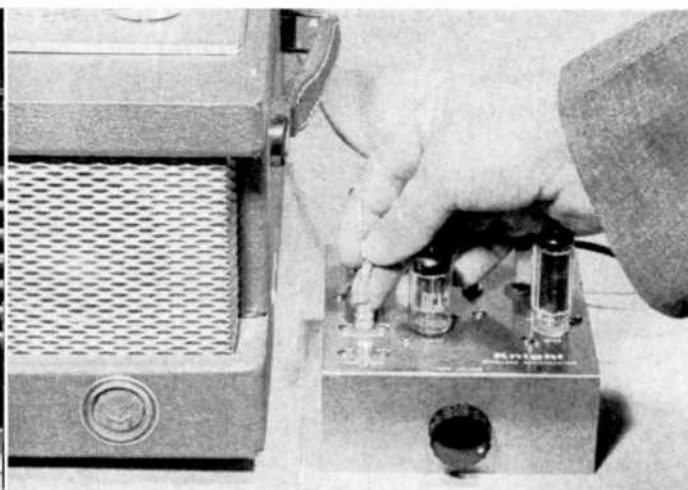
The kit will provide a few hours of pleasant activity in putting it together and more hours of fun after you have it in operation . . . and get rid of the wires, too!



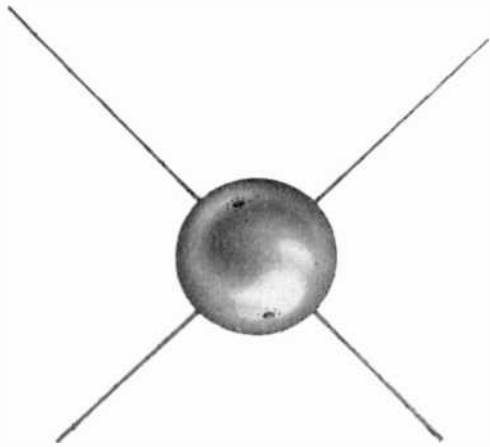
It may be necessary to change the resistor marked R-5 to a lower value if the volume obtained is not sufficient.



After the radio has been tuned to a dead spot on the dial, the Broadcaster is tuned to it by turning the frequency control.



The second channel from a recorder with stereo playback may be plugged into the unit for broadcast to a nearby radio.



BIG BRAIN in a BOX

by Marion Mitchell

PART II

Part I of this article described how the tape recorder has become one of the most efficient memory devices ever invented, and one of the most useful to man, especially in the industrial and scientific field. Part II discusses some of the actual applications of data recorders—as the saying goes—“on the land, on the sea and in the air.”

TAPE recorders can find you an oil well, bake a cake for the celebration, figure out the tax on your first million, and then answer the phone while you're out spending your loot.

They can “fly” an airplane or a guided missile, machine a metal casting, run off a government payroll, predict an election, or solve a math problem in minutes that would take a college prof months to work.

Then, too, tape recorders can operate typewriters, compose music, draw graphs, translate languages, take pictures and even think up names for soap.

Not only are they used “on the land, on the sea and in the air” but also to probe under water, underground and into outer space.

How? It isn't easy. A lot of additional equipment is required, but tape recording does it faster and better. Its memory is what counts.

Take the tape recorder that can make an oil baron out of you. It's called a geophysical, or seismic, recorder and it requires no less than a small earthquake to operate. Small earthquakes come easy though. Either a series of “shot holes” are drilled in the ground where oil is likely, then sticks of dynamite dropped in and set off, or, a large crane truck called a “thumper” drops a three-ton weight on the ground, producing the same earthquaking effect.

Both the “shot hole” method and the “thumper” create shock waves in the earth which reflect off hard strata down deep, then come bouncing back to the surface.

Geophones—several special microphones on stakes set in the ground—pick up the vibrations and send their electrical signals into the recorder which tapes them on the magnetic media. While conventional tape may be used, some seismic recorders use a magnetic oxide-coated sheet wrapped around a metal cylinder; others use an oxide-coated disc; and, still others use an endless belt, or loop, of tape 4” to 6” wide.

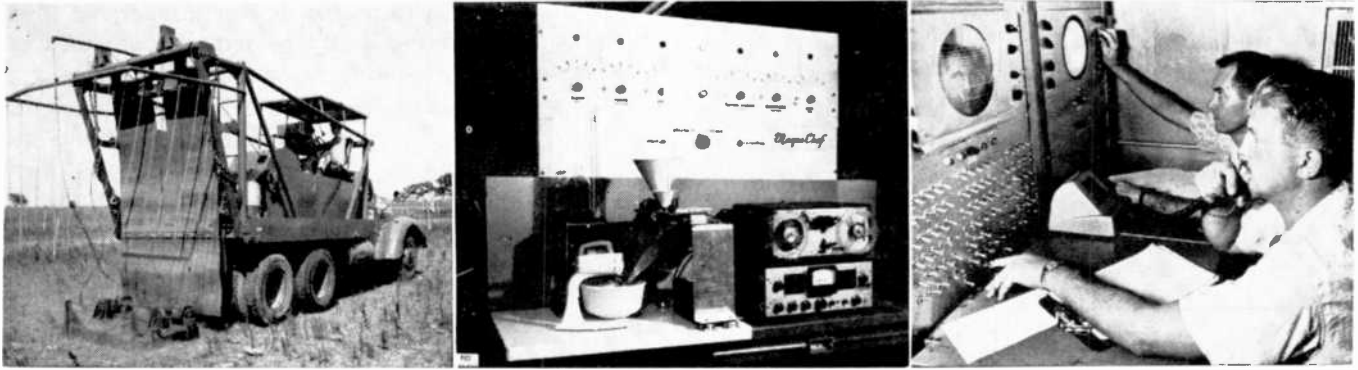
By comparing the recording with previous ones made



ARITHMETIC INPUT

CONTROL

TAPE



Left: This weight-drop truck, nicknamed "the thumper", drops a three ton weight on the ground to create a small "earthquake." The resultant earth tremors are recorded on a magnetic tape belt and analyzed to determine the likelihood of oil deposits. Center: To demonstrate principles of automation, this Magnecord tape recorder was equipped to automatically measure, add and mix the ingredients for cake batter. Right: Douglas aircraft test engineers receive data from an aircraft being test flown via FM radio. Maze of toggle switches on panel enables engineer to "tune in" on data from any one of several instruments or transducers aboard the panel and observe the voltage configuration on an oscilloscope. All voltages are recorded magnetically on tape.

in areas where oil has already been discovered, the geophysicists can tell whether oil is likely in the prospecting area.

When it comes to tape-baked cakes, it's still simpler. Even the lowly pancake has been made by magnetic tape. A magnetic tape recorder that measures, combines, and mixes ingredients in proper amounts—was demonstrated some time ago. Taking three minutes to perform the operation, the machine was built by Magnecord, Inc. to demonstrate principles of automation. The recipe is read to the tape recorder by the operator by setting all the indicators and switches to the desired quantities of each ingredient. One by one in correct amount and sequence, the ingredients are poured into the mixing bowl and the mixer turned on. When the ingredients are blended, the mixer shuts off and dough is ready for the oven.

Of course the tax on your first million could be computed in a wink by an electronic computer, and phone answering is no problem at all, what with the number of tape-using, phone-answering devices on the market.

When it comes to flying planes and guided missiles, tape recorders can do it right in the laboratory. Of course, you must actually fly the missile once—the first time—but by recording that flight on magnetic tape, it can be "re-

flown" for study and analysis time and time again simply by replaying the tape.

Recreating the flight is possible to the extent that all the instruments aboard the rocket or missile—many of them special test instruments to measure stress, vibration and other vital forces important in design and performance considerations—will, on playback of the tape, indicate the same readings as they did throughout the course of the test flight.

This makes it possible for the engineers to study carefully exactly what happened to a wingtip, perhaps, at the moment the speed of sound was reached.

Here's how the forces on a missile in flight are put on tape. A series of transducers convert each of the measured quantities such as airspeed, temperature and perhaps 150 others into electrical voltages which are transmitted by FM radio to the ground, a technique called "telemetry."

The signals are then picked up by a ground station radio receiver and recorded on tape at the rate of 3,000 or more

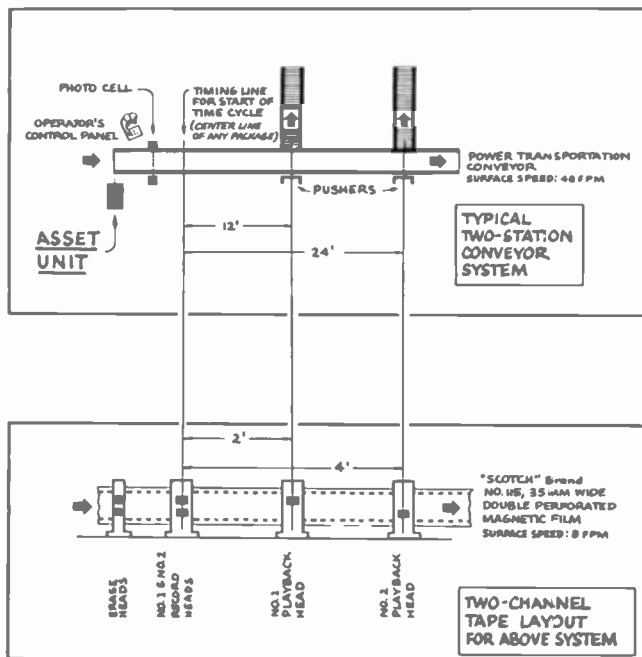
Below: Panoramic view of complete IBM "705" computer installation shows assortment of components which make up a typical electronic brain. It includes a control unit in foreground at left; and other sections, left to right, are punch card input, arithmetic section, magnetic tape storage section, and at far right, output section with automatic printers.



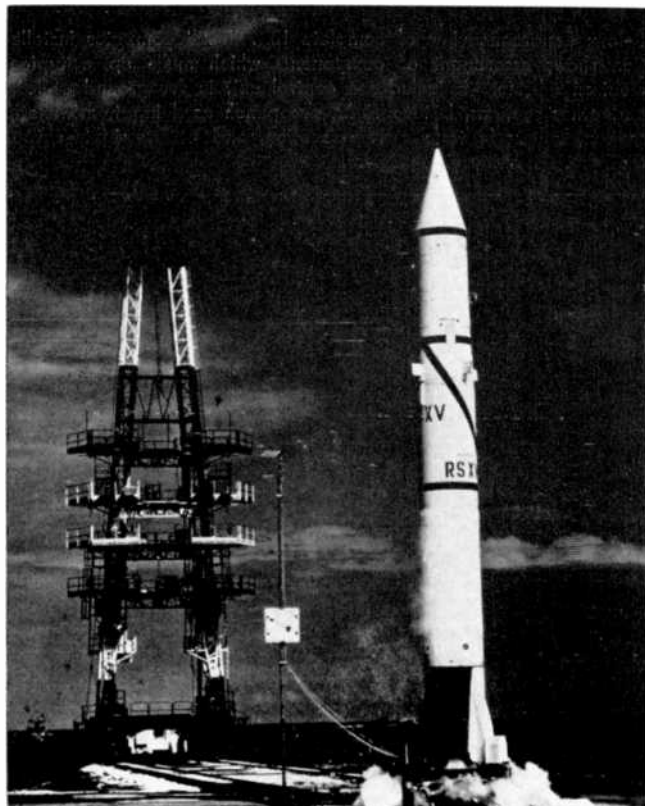
STORAGE

OUTPUT

AUTOMATIC PRINTERS



Above: Diagram showing comparison of conveyor layout with location of recording and playback heads indicates that magnetic film is an exact "scale model" of actual conveyor. Synchronized with the conveyor, tape moves at same relative speed. When operator pushes ASSET (see opposite page) button, signal is recorded on the tape channel corresponding to a specific conveyor. When tape signal reaches playback head in that channel, "pusher" ejects package. Below: Much of the test data from guided missiles such as this Redstone missile is radioed back to earth and recorded on magnetic tape. A total of 168 simultaneous signals from transducers aboard can be recorded at the missile range ground station. Data from each source is broadcast by the missile to the ground station over a different FM wavelength. Data from any one source can be isolated by "tuning" to its particular wavelength on playback of the tape.



bits of information each second. For this purpose precision-built telemetering data tape recorders are used together with highest quality instrumentation tape.

To recreate the flight at any time in the laboratory, the magnetic recording is played back and fed into visual indicators for direct reading, or into a device which plots the curves on paper.

Such magnetic tape information can also be automatically re-recorded in such a form that it can be fed directly into a computer, reducing the data reduction time from several weeks to a few hours. This is highly important since some flight tests may last for several hours and as many as 100 channels of information are gathered.

The latest method for learning the secrets of outer space is to launch satellites which will orbit the globe. Several such launchings are scheduled over the next several months. Some of the satellites, at least, will carry miniature tape recorders that will tape readings of the various instruments aboard. Then as the sphere passes over radio receiving stations spotted over the earth, it will play back those readings on the tape and transmit them to the ground.

On the sea, too, data recorders are making a name for themselves. Studies of the action of the tides have been greatly facilitated by recording the information on tape. Then, too, underwater noises—fish sounds as well as boat sounds—have been taped and analyzed.

But perhaps the widest application for the data recorder has been in electronic computer development.

As pointed out earlier, magnetic tape provides the best memory system yet devised. However a memory system is only part of a brain. But tie-in that memory system with some electronic counting devices and you come up with an electronic brain that has everything but initiative.

Electronic brains can't really think, but they can remember, read, write, add, subtract, multiply and divide like crazy, and do it faster than was ever before possible.

Since the first electronic computer was built in 1944, great progress has been made. Take a typical example—calculating the density of an electron field between two nuclei of the nitrogen molecule. You know, something you might whip out before breakfast. After all, it involves only 72 million mathematical operations.

With paper and pencil, friend, it would take 800 years—give or take a week. IBM's first calculator could have done the problem in only 10 years; its 1948 model, in 80 hours; and, its model 702 could toss it off in 120 minutes. At this rate next year's model may have it finished before it starts.

Companies are using electronic computers to run off payrolls, make inventory and distribution studies, or calculate the life expectancy of hundreds of thousands of insurance policy holders.

Others use them for engineering and research, calculating what might happen to be an airplane wing under hundreds of different stress situations. Other "brains" do such tasks as predicting results on the basis of past averages, or provide almost instantaneously such things as the number of people in the United States who are 21 years of age at the request of the Census Bureau.

An electronic computer is, basically, a device that helps solve problems involving numbers or quantities. The slide rule or the mechanical adding machine are computers, though primitive by comparison.

Electronic computers, on the other hand, are composed

of vacuum tubes, condensers, resistors, tape handling units and so forth. These conventional components are arranged in circuits to enable the machine to read and remember numbers or letters represented by coded signals on tape, to add, subtract, multiply, divide or write out the answer—even to check to see that the answer is correct.

Computers must be given proper instructions by operators however. They can only solve problems given to them in proper form.

Instructions or "programs," as they are called, tell the computer what information to pull out of its magnetic tape files. The program also tells the computer what to do with the information—whether to add, subtract, and so on.

The great value of the computer lies in its accuracy and its lightning like speed. Today problems in statistics which could never before be tackled because of the time and manpower involved can be solved post haste by these brains.

Although computers are generally not credited as being able to think, they can come up with some decisions in much the same manner as people do.

For example, if you were going to stake your fortune on which team might win the world series, you would undoubtedly take into consideration all the factors that might influence the outcome. In other words, you would figure the odds.

Trouble is, you probably wouldn't have all the necessary information to figure those odds accurately. Besides, it would take too long.

But a computer could be fed all the results of previous world series games, all the batting averages of the individual players, even such things as how a certain pitcher throws on Fridays as opposed to Thursdays—in other words, every conceivable fact and figure from past experience. Of course, that alone would take time, and it might be necessary for some human to tell the computer just how much relative importance to attach to each type of information.

Right: Magnetic tape in the form of 35mm film automatically controls conveyors at Air Force supply depots by means of this unit called ASSET—Automatic Selected Station Electronic Timer. Operator pushes a button indicating to which branch conveyor a package should be shunted; magnetic tape "remembers" the instruction, automatically ejects carton at right spot. Below: This data processing component is used in analyzing magnetic tape data recorded during flight tests. It enables aircraft engineers to "listen in" on signals from any one of several tracks and uses servo-mechanisms for precision speed control.

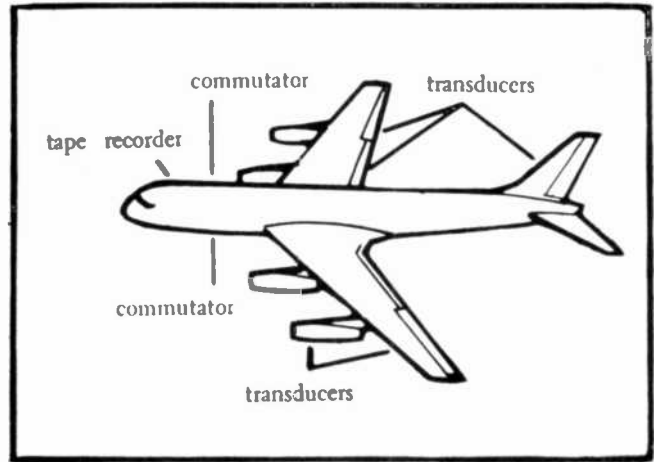
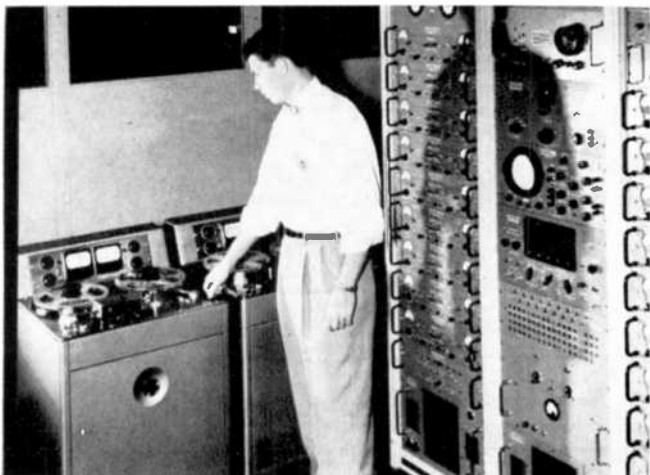
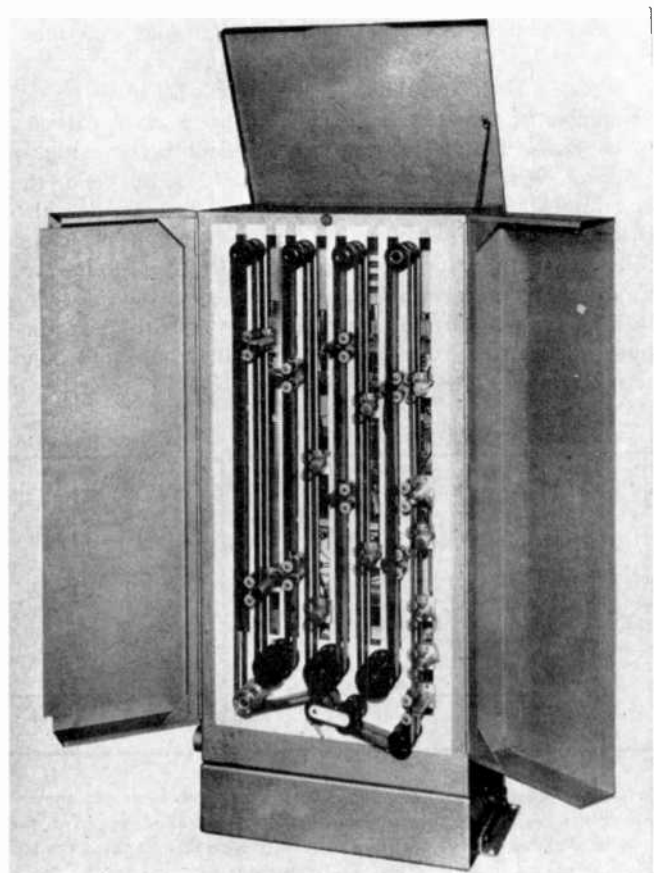


Diagram of jet transport shows typical locations of transducers at various points on the plane. Each set of transducers feeds signals to a rotating switch, or commutator, which samples each transducer in the set consecutively and in turn feeds the sampling to one of the channels on the tape.

But with that information the computer could come up with the result—based on the odds. It could be wrong, of course. Even a million to-one shot pays off occasionally. And it could always be fooled by feeding it faulty information.

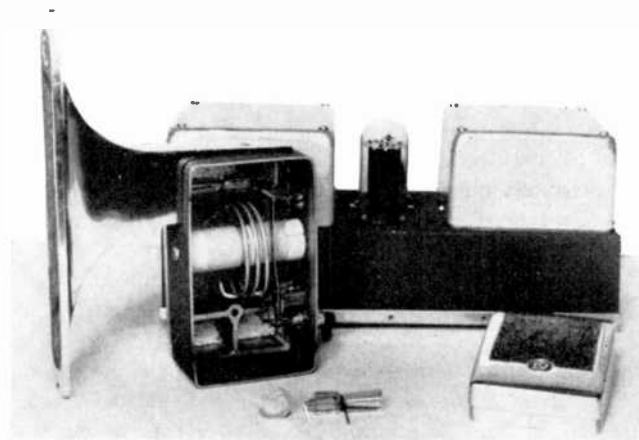
All in all, tape and the magnetic recorder look like they're here to stay. Science fiction writers are already weaving them into plots for their stories about the fabulous era of the future. What's more, so are the scientists.

So in the meantime, friends, next time you trip over the microphone cord strung across the floor, *don't* kick that recorder. Remember, there's quite a brain in that box.



The Ionovac

. . . new invention makes possible a loudspeaker without a diaphragm.



A LOUDSPEAKER without a diaphragm, long the dream of engineers, is now a reality. The DuKane Corporation of St. Charles, Illinois is now manufacturing the device which makes the first practical use of ionized air to replace diaphragms in loudspeakers.

While the product is being offered initially to the high-fidelity market as a loudspeaker for the more expensive record players, recorders and radios, its applications as a generator of ultra-sonic waves for use by a wide variety of industries is considered of even greater importance.

The heart of the new invention is a small, open-ended quartz cell the size of a peanut shell. Air is cupped in a chamber which narrows down to an aperture about the size of an automatic pencil lead. Within this small space air molecules are bombarded with a high frequency, high voltage current which literally bats millions of electrons out of their atomic orbits, ionizing the air.

The ionized cloud, which glows with a violet hue, functions in place of the traditional diaphragm.

William Torn, the senior engineer in charge of the development of the Ionovac, explained that ionized particles when exposed to an intense electric field become highly agitated. When we change the strength of the field, the breadth of the oscillations of each of the particles also changes. Each variation causes an expansion of the cloud followed by a contraction, thereby producing sound waves in any strength, form and frequency needed.

The moving parts in loudspeakers, the coils and diaphragms, are the weakest links in high fidelity sound reproduction. The finest diaphragms have their own

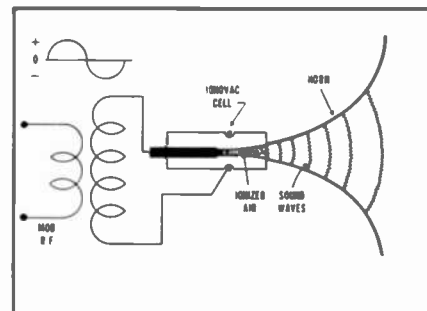
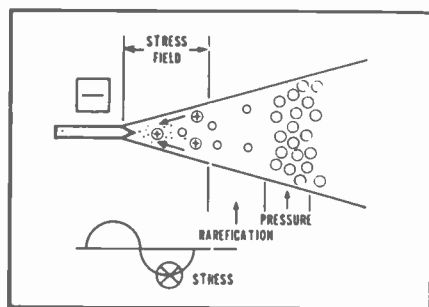
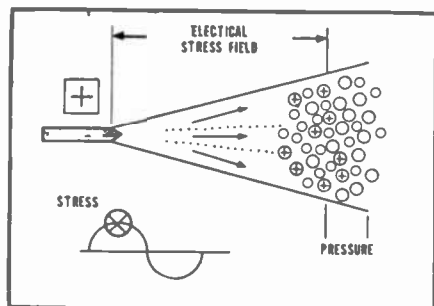
resonance or vibration characteristics and they cannot respond fast enough, because of their inertia, to accurately reproduce the wave combinations produced by vocal cords or musical instruments.

Thomas Edison tried to solve the problem with his Thermophone. This, and similar instruments tried to produce air expansion and contraction with heated wires. The temperature lag made it impossible to generate any but low frequencies and intensities.

Sigfried Klein, a French physicist who conducted many ionic cloud sound reproduction experiments invented the Ionophone six years ago. This was the first commercial use of the principle. The Ionovac is similar in principle to the Ionophone but is radically improved in design. It is at least six times more efficient in performance.

Primarily, the Ionovac was developed as a variable generator of both audible and ultra-sonic waves—from 1000 cycles to a million cycles. The higher frequencies have been put to use in industry and medicine. "Silent sound" is now available for removing particles from industrial parts, including radio-active materials, cleaning surgical instruments, aging wine, bonding hard-to-weld metals and similar applications. The principle is used by Royal Dutch Airlines for completely blind touch-down landings, filling in where radar becomes inaccurate—below 250 feet.

The Ionovac is capable of producing any desired silent sound frequency from a single electronic circuit. Present ultra-sonic wave producers have only a single frequency. The new unit should accelerate industrial use and speed up research.



When the pencil-like electrode is on the positive cycle, as shown in the first drawing, the ions are repelled and move forward creating a pressure wave. On the next cycle, when it switches to negative, the ions rush back creating a rarefaction in the air. This alternating pressure and rarefaction in time with the original vibrations recreates the sound. The drawing at right shows the high voltage transformer which supplies the voltage to ionize the air. The complete unit is shown at the top of the page.



The author found the tape-recorder-plus-a-watch method of preparation for his television shows, on which he teaches Shakespeare, to be invaluable. Allotted exactly 26 minutes of air time, he knows how long each part of his lecture will be ahead of time. While telecasting, his wife tapes the program at home, so that he may later check his actual performance against the original preparation.

PTA to TV via a Tape Recorder

by Norman Nathan, Ph. D.

. . . Utica College teacher discovers value of tape recorder in speech preparation.

WHEN I bought my tape recorder two years ago, I was unaware that it would soon become one of my important professional assets. My immediate object was to record the best in music heard over the local FM station.

But, in addition to my normal teaching duties at Utica College of Syracuse University, I am frequently called upon to make speeches before various groups. One day, pressed for time, I found myself expected to deliver a twenty minute talk on the literary qualities of the Bible.

My usual method of preparation was to make a brief outline and then spend quite a number of hours divided between daydreaming and thinking about what I was going to say. I have neither the time nor the inclination to write out a speech, particularly in view of the "canned" result.

Could I utilize my tape recorder? I began by turning the volume high. I tend to walk up and down a bit while getting ideas, and I didn't want to be hindered by a microphone. With a stop watch in front of me, I spoke for almost twenty-five minutes. Then I played back my speech. I was only partially satisfied and tried again. The second playback convinced me that I had enough cogent material at my fingertips.

Since then I've always used my tape recorder to pre-

pare speeches. My method includes taking a very few notes during the playback. These will fit on a 3x5 card, convenient and unobtrusive when addressing even a small group.

Generally speaking, in two hours (assuming that I am familiar with the subject matter) I can fully prepare a half hour speech. Equally important is that I don't have to start thinking about my talk days or weeks in advance. The morning of the speech is time enough. I just make sure to speak into the tape recorder a few minutes longer than my assignment. It's good to be able to cut a bit when the hour of presentation is at hand.

Frequently I find that only one trial and playback is necessary. On the other hand, when I had to address the graduating seniors of one of the local high schools, four attempts were required to satisfy myself that I had something appropriate for an audience that likes a fast-moving pace, humorous phrasing, and a serious message underneath it all. Listening to my first two trials left me as cold as the audience would probably be. The third attempt, taking a new tack, seemed fair. A fourth playback gave me enough confidence to enjoy the meal that preceded my presentation that evening. Since the organization of all these trials was adequate, I can visualize what would have happened without the recorder. It took an audio understanding of what

I had to say to show me the way to proceed.

Self-improvement may come by comparing the two or three versions of a speech as it developed. If the same speech is to be delivered at a future date, it's a good idea to file it with your tape library. Better yet, arrange for a recording of your actual delivery. Your family, who weren't invited to the lodge meeting, might like to hear your bright remarks. And of course, the recording adds another item to your collection of memories. P.S. Don't let your assistant turn off the recorder until the applause and the chairman's remarks are included.

If I were still a salesman, I'm sure I'd use the recorder to see how I sound when dealing with a customer. Maybe I'd discover why everybody liked to talk to me, while practically no one bought anything. Let your wife serve as prospective buyer. She'll be glad to prove to you that she has sales resistance.

On one occasion I found that the recorder could be useful even in panel discussions. Obviously, set speeches have no place here. But when a group of three or four individuals with diverse backgrounds are thrown together, what surety do they have that they will be able to develop a topic in a manner that will interest their audience?

When two friends and myself were to discuss a book before a local men's club, we spent part of an evening in my living room trying to decide on the general lines of what we would say. We weren't getting anywhere in particular, when someone suggested that we tape our conversations. Then we merely began to talk about the book. The playback convinced us that we had nothing to worry about. Even if the recording gave us no more than confidence in ourselves, it served a significant purpose. No doubt a few of the remarks were remembered and later introduced appropriately.

But my greatest need for a tape recorder came when I began to teach Shakespeare over television.

I surmised that I couldn't use classroom procedures. Within a leeway of perhaps fifteen seconds, each program had to be complete in itself. My audience would range (as some parents have since told me) from four-year-olds to those in their nineties. Interest levels would run the gamut from fellow teachers to soap opera addicts. There would be no opportunity for a viewer to question any unclear remarks. Speaking from notes would hardly be satisfactory, but no teleprompter was available. Besides, spontaneity is a real virtue, and a somewhat memorized program, like a memorized speech, might lack the crucial note of sincerity.

In short, the situation was like addressing a PTA group, a Kiwanis luncheon, a ladies' auxiliary, and a high school class all at once. In the empty studio no audience could tell me to modulate my voice, change my tempo, inject a bit of humor. I had to be aware of the cameraman, to move (but not too much), to consider visual aids. And there could be no pause—that wonderful chance to get second wind while the audience laughs at a joke.

Here, as with my speeches, I first note down the two or three major points I want to cover in the twenty-six minutes allotted me. Then I prepare my visual aids, something that I think could often be used effectively in speaking up at a sales meeting or even when one has to get together a report for business associates. A unique advantage on a TV program is that you can refer to notes unnoticed while the camera is focussed on a visual aid.

The tape-recorder-plus-a-watch method of preparation is invaluable in television where time is an absolute dictator. I know how long each part of my lecture is going to take, and I can condense or add accordingly as a commercial is added or eliminated without previous warning.

As a matter of fact, one afternoon I had about thirty-two minutes prepared, and was wondering how I was going to squeeze everything into twenty-six. Just before air time, a group of union leaders holding a convention in Utica were certified by the station for almost seven minutes of time that normally was mine. Could I condense thirty-two to less than twenty!

I had two points to make. Each was going to take approximately sixteen minutes. As I got underway I had to think fast. So I forgot about the second item and expanded my first point by an additional three minutes. That I can be so sure of how long it will take me to say things is all due to my tape recorder.

My recorder's usefulness doesn't end with the preparation. While I'm telecasting, my wife tapes the program at home. Thus, I have a check to see what happened to my ideas after the dress rehearsal. And if I should have to talk about the same play at some future date, I'll have a better starting off point than I originally did.

Actually, two recordings are made of the telecast. I'm part of the Martha Manners "May I Present" show, and she tapes the program at the station.

What are the advantages of using a tape recorder to prepare speeches? First, if my own experience is any guide, a great saving in time results.

Second, and probably most important, a man should learn to think on his feet. Thoughts grow when you try to express them. In the classroom I consider an exam, if properly given, as an opportunity for the student to develop and tie together the threads of his many ideas. Unfortunately, thinking on one's feet results in errors humorous only if kept private on the recorder. But, having had a couple of chances to go over the ground of my speech, the possibility of my making a superficial remark is not great.

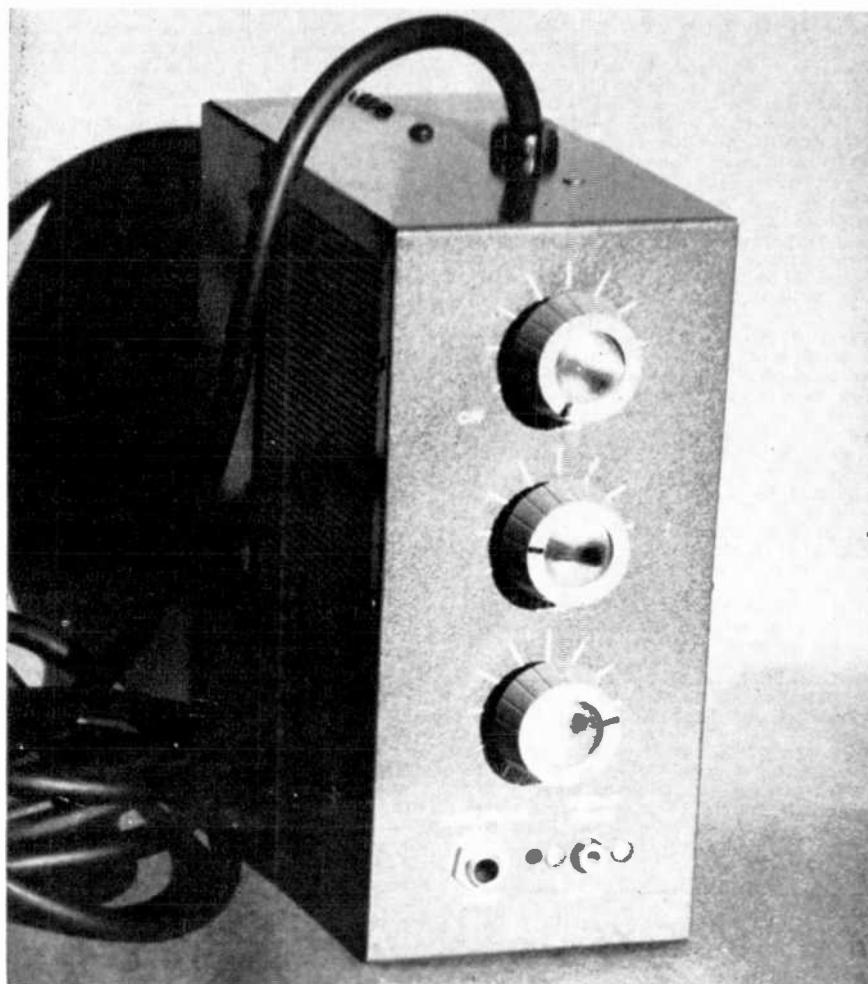
Third, it is difficult to time a speech even if you have a five minute leeway. The Junior Chamber of Commerce that listens appreciately for twenty minutes, grows restive at thirty, and forms increasingly bad opinions thereafter. When I am asked to speak for a stated length of time, I'm usually on the dot. I sometimes suspect that this is appreciated as much as the speech itself.

Fourth, hearing oneself provides unmistakable evidence of when you are interesting and when you are dull. Besides, psychologists can prove that we tend to remember what is interesting and ignore what is dull. In other words, when I'm addressing the Optimists I recall the good things I heard myself say on the recorder. I probably daydreamed while I "listened" to the hollow remarks.

Incidentally, I'm learning a lot about the habits of tape recorders. I really know that high volume in recording picks up background noise. My study is near the kitchen, but a closed door gives me the needed quiet. On Thursday evening, during the playback, I suddenly heard my eighteen-month-old daughter crying. I ran out to see what was the matter, but she was asleep in bed! Sure enough, there had been a brief rebellion in the kitchen while I was rehearsing. My recorder heard more than my ears did. Maybe high volume has a kind of detective advantage.

NEW PRODUCT REPORT

STA **OK** STED



5 WATT AMPLIFIER FOR STEREO

... compact unit built for second channel stereo amplification feeds from pre-amp or mike. May be used for public address system.

THE V-M Model 8810 Amplifier is a modestly powered unit of excellent quality. Designed primarily as a second channel stereo amplifier for the V-M 711 or similar recorder with stereo playback, it may also be used for PA work through the microphone input. It is good for mobile PA purposes for it consumes only 50 watts and holds down battery drain when an inverter is used.

It measures only 7 $\frac{1}{4}$ " x 6 $\frac{3}{4}$ " x 3 $\frac{3}{8}$ " and due to its small dimensions it can possibly be mounted in some of the larger tape machines and certainly in a reflex speaker cabinet. If mount-

ed externally, its pleasing design will blend in well with most audio equipment.

Technically the unit has sufficient power to supply a small room and, although not equipped with a pre-amplifier for direct connection to a playback head or a low level microphone, this is not a drawback as most stereo playback machines have pre-amplifiers built in and will provide adequate input so that the full output of the amplifier is secured.

The controls provide 12 db bass boost and 15 db treble boost above mid-range.

Product: V-M 8810 Amplifier

Price: \$35.00

Manufacturer: V-M Corporation

Benton Harbor, Mich.

Tests of performance indicate that AAA program requirements are exceeded and 50 to 15,000 cycles per second may be bandpassed with less than 1 db variation from 1000 cycles at 3 watts output with less than 2% distortion. The hum level was 85 db below at 5 watt output into an 8 ohm load.

When installing the amplifier in any type of equipment care should be taken to provide adequate ventilation and holes for air circulation should be provided in the cabinet or other enclosure. A template to mount the unit in the V-M model 25 and 25A extension speakers is provided.

There are two inputs on the control panel, one a standard jack for the regular plugs and the other a phono type jack. The standard jack is for a microphone connection and the phono jack for the input from a preamplifier or tuner.

When the phono input is used, the tone controls of the unit operate but if the microphone plug is inserted in its jack, the tone controls are disabled to provide sufficient gain for the mike.

There are two output jacks on the side of the case. One is a standard jack and the other takes a 4 prong plug of which pins 2 and 3 are used. Any speaker with an impedance of 6.5 to 8 ohms may be used.

The unit has three tubes, a 12AX7, a 6V6 and a 6X4.

We found that the amplifier performed very well, is rugged and well built and because of its small physical size, should fill a number of needs.

SHOP OR SWAP

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

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

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

CONCERTONE TAPE RECORDER, Model 401, for sale. Converting to binaural. \$200. Dr. J. J. Stern, 3 Hopper St., Utica, N. Y.

PICTAPE: "a true picture fidelity" recording tape. Pictape Products Corporation, 152 West 42nd St., New York 36.

WANTED: A good used 610-EM or 611-E Magne-mite. Stanley Moser, Rt. 1, Box 70-B, Laramie, Wyoming.

MOTEK K5 tape deck, TPR-1 preamp in blond case, 2-speed, good condition, \$45. Paul Damai, Calumet City, Ill.

SENSATIONAL BARGAIN — Ampex 600, half-track, in Samsonite, brand new with warranty card: \$415. Express prepaid on receipt of money order or certified check; otherwise shipped express collect. Major C. F. Allen, 134 Arlington Road, Montgomery 6, Ala.

IOWA—IDAHO—ATTENTION. Would like to contact man who wrote me about swapping tapes of Fiddle music. I lost your address. Please write again as am very anxious to hear from you. Karl Byarski, Kinde, Michigan.

FOR SALE: Briefcase secret recorder, two speed, like new. \$150. Write John A. Cramer, 4565 Muir Ave., San Diego 7, Calif.

WANTED: Fisher 50-AZ Amplifier. Electro-Voice Blonde Korina Regency III. Electro-Voice Korina Blonde Enclosure. Hammond Blonde Spinnet Organ. (Clay, Guthall, 170 Hess Blvd., Lancaster, Pa.

INTERESTED — IN — TAPESPONDENT who would like to exchange tapes on interesting conversation or music. A tape for a tape, a card for a card, answers guaranteed within two weeks. Soooooo for the thrill of your life, write rush. Sidney S. Jozan, 4417 North Hazel Street, Chicago 40, Ill.

WANTED . . . Fisher 55A Amplifier and Fisher 80C Audio Control or 88 Scott Equalizer 121C and Scott Amplifier 240, or McIntosh C-8 Preamp and McIntosh MCG0 Amplifier; also Fisher Tuner FM90 or 80-R. Advise best cash price. S. J. Marsh, 2435 W. McMicken, Cincinnati.

SELL . . . cash or trade (See "Wanted" adv.) Magnecord Tape Recorder, PT6 Recorder, three speed, full track, monitoring facilities, head phones, Monitor Speaker, EV Mike, PT63J watt Amplifier. Professional results. Cash price \$475. S. J. Marsh, 2435 W. McMicken, Cincinnati.

WANTED: Private collector wants to buy, borrow or rent tapes of operas sung in English (NBC-TV Opera and others). Ralph Cameron, 38-30 Douglaston Parkway, Douglaston, N. Y.

FOR SALE: Rek-O-Kut Challenger Model R-8A recorder player with 33 1/3 and 78 RPM lead-screws. Good condition, \$450. FOB Hawkins. William A. Steventon, Hawkins, Wisconsin.

LEARN HYPNOTISM, SELF-HYPNOSIS from tape! Other helpful recordings! Free Information. Drawer TR6-697, Ruidoso, New Mexico.

TWO CONCERTONE Model 1401 professional tape recorders, complete with monitoring amplifier case and accessories. \$199.95 and \$225 each. Midwest Recording Co., 1844 Spruce St., Quincy, Ill.

RECORDS FROM TAPES, about \$3.00. The Yeagers, Box 287, Bellingham, Wash.

HI-FI RECORDING TAPE: Plastic base 1800' extra play on 7" reels—\$1.86 each. 1200' on 7" reels—\$1.65 each. Minimum order 3 rolls. Top quality guaranteed. Include sufficient postage. Florman & Babb, Inc., 68 West 45th Street, New York 36, N. Y.

WISH TO TAPESPOND with someone in Dover, Del; also any person connected with pharmacy work in as many cities as possible. Victor C. Rowe, Ph/C., 2219 East State Ave., Olympia, Washington.

ANYBODY TAPING A BOOK? Like to hear from authors who use recorder. Jack Feltz, Box 276, Tahlequah, Oklahoma.

FOR SALE: Brand new Scott Model 331AM, FM tuner with built-in equalizer and preamp; brand new Interelectronics preamp and equalizer with power supply. Will accept 15% off net price. R. R. Lamb, 1219 Yardley Rd., Morrisville, Penna.

FOR SALE: Webster-Electric Ekotape Model 101-9 recorder with foot-switch; 10-tube, 7 1/2 I.P.S., single track, semi-pro model; cost \$412, sell \$175. Also Pentron 3-tube mixer, cost \$39.50 (audiophile), sell \$20. New Martin 0017 Spanish guitar & case, cost \$120, sell \$67.50. Write Buckner, Box 122, Sheldon, Ill.

WANTED: Magnemite briefcase tape recorder or Minifon P-55. Reasonable and in good condition. W. Larson, 4627 Hazel Ave., Philadelphia, Pa.

FOR SALE—One Magnecord PT-63JAH complete portable recording unit; 3 heads, 7.5-15 ips full track. Includes 10 1/2" adapter arms and changeover switch. \$850 new, excellent condition. Price—\$500. Jim Jones, Cary Hall, Box 442, W. Lafayette, Ind.

LEARN THE CODE. Be a ham operator. Novice tape \$5.95. Advanced \$4.95. Both \$9.95. 7" dual track—3 3/4 IPS. Tapedcode, Box 31-A, Langhorne, Penna.

VIKING TAPE PLAYER, tape lifters, excellent, purchased December 1956, \$69.50, yours \$50. Edward Bernhardt, Monona, Iowa.

MAGNECORDER M33, unused, with Electro-Voice mike, amplifier, speaker, complete \$175. Fisher 80-C Audio Control, \$60. McIntosh 50-watt amplifier, \$125. B. C. Pevehouse, 1930—22nd Ave., San Francisco 16, Calif.

WIRE RECORDER WANTED—Silvertone or Webster. first-class condition. Charles H. Leach, 502 West Market St., Jeffersonville, Ind.

WANTED: Recordings of the Band of America program over NBC from 1948 to 1950. Write, H. W. McClelland, 90 Bryant, White Plains, N. Y.

TAPE PALS UNLIMITED! Search no more. All categories. Write me today. Miss Zenobia Raghunandan, 41 Eldert Street, Brooklyn 7, New York.

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

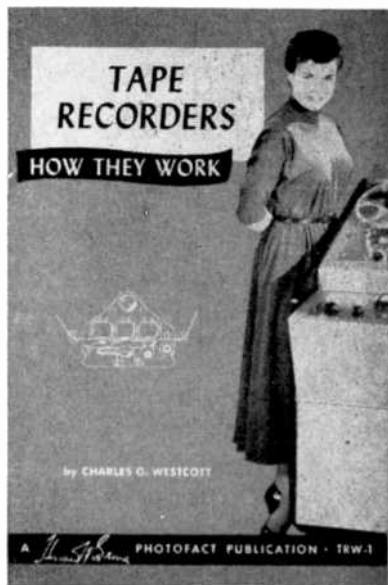
WANTED: Used recording tape, any quantities, large or small, also want empty reels, etc. Richard Lackner, 2029B Bradley, Chicago 18, Illinois.

YOUR TAPE RECORDER NEEDS its heads cleaned! Head Cleaner, \$1.50 bottle. Guaranteed. Ted Rehwaldt, 519 W. Arlington, Chicago, Illinois

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Charles G. Westcott

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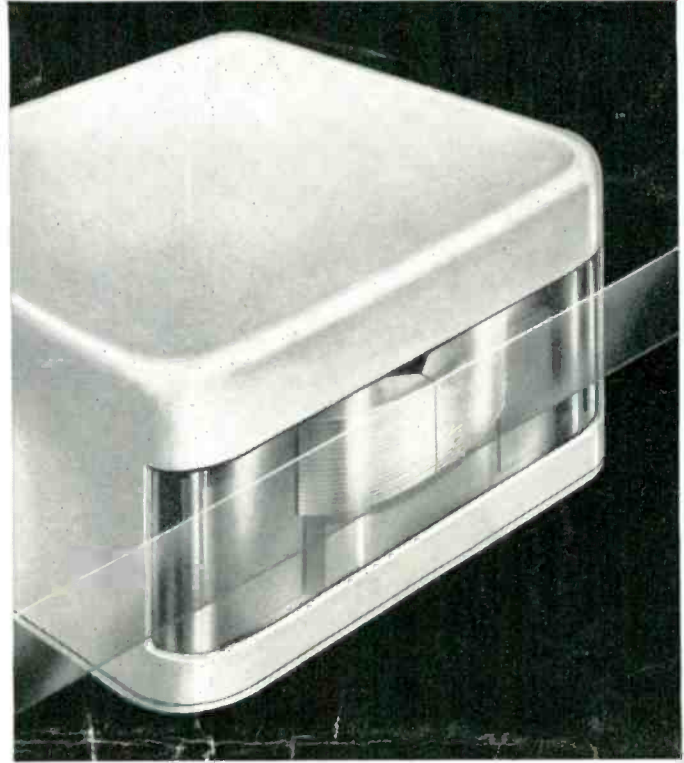
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OPELIKA, ALABAMA
Export Division: Morhan Exporting Corp., N. Y. C.
In Canada: Atlas Radio Corp., Toronto

COMPARE!



Picture of a recorder head's contact surface, with critical center gap eroded and enlarged by the wearing action of conventional magnetic tape.



Same type head, same period of use. But see how silicone lubricated "Scotch" Brand Magnetic Tape has saved the head from wear—assuring perfect response!

Read how "Scotch" Brand's built-in dry lubrication reduces recorder abrasion

Know what's the most vulnerable part of your recorder? It's the sensitive magnetic head—the tiny, precision-made part where lack of proper lubrication can cause annoying wow, flutter and harmful friction.

Compare the two magnetic heads magnified above. See for yourself what lack of proper lubrication can do. Like the heads in your recorder, each head is made with an almost invisible quarter mil gap over which tape passes. At left, abrasive action by conventional tape has worn down the head

.0025 of an inch. (Small, yes, but enough to cause a frequency drop of a full octave!) Now, look how "Scotch" Brand Magnetic Tape has saved the head on the right. No wear. . . so no loss of sound.

Only "Scotch" Brand Magnetic Tapes perform this critical lubricating job for you. Exclusive silicone lubrication process (dry lubrication) lets tape glide smoothly, safely over the magnetic heads. And this famous safety feature lasts the life of the tape. Treat your machine to a reel soon.

Free Tape Tips—write Dept. DN-67.

ONLY "SCOTCH" BRAND HAS SILICONE LUBRICATION



#190 Extra playing time #150 Extra strength #120 Higher output #111 True economy



Your guarantee of quality