



TAPE RECORDING





AT Omegatape

**...stereo is an old friend,
and so is Audiotape**

Stereophonic sound has become really big news just within the past year. But for at least one recording company, stereo has been commercially feasible for over three years. It was in 1955 that Omegatape released one of the first successful stereo tapes, "The Hi-Lo's in Hi Fi." Now the Omegatape catalog lists 80 stereo titles, and new releases are being added monthly.

When he joined Omegatape, President Dave Hubert brought with him a world of recording-business experience. That's why he's qualified to say, "As the recorded tape business gets more and more competitive, I've become even more of a 'bug' on quality than before. Our motto is 'the finest quality recorded tape' and to live up to it, we must run continuous quality checks on all of our equipment. These checks include the tape we use for all of our mastering and duplicating — Audiotape, of course. It's never yet let us down."

Omegatape is just one of the hundreds of professional recording studios that rely on Audiotape for the finest sound reproduction.

The complete line of professional quality Audiotape offers a base material and thickness to meet every recording need. And no matter which type you select, you can be sure you're getting the very finest tape that can be produced. There's a complete range of reel sizes and types, too, including the easy-threading C-Slot reel for all 5 and 7-inch Audiotapes. Why settle for less, when professional-quality Audiotape costs no more?

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Stereo

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HI-FI

TAPE RECORDING

VOL. 5 NO. 11

OCTOBER 1958

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MY FELLOW CLUB MEMBERS GROANED

When the Chairman Asked Me to Report on the National Convention

AS the official representative of our club to the national meeting, I had the responsibility of bringing back to the members the feeling of good fellowship and inspiration of that conference and to tell them of the plans for the year ahead.

Their feelings were mirrored in their faces as I made my way to the speaker's rostrum. I knew what they were thinking. . . . "Here comes another stumble-bum report." . . . "More waste of time while this guy gropes for words." . . . It was all there—and more.

But They Were In For A Surprise

I let them fidget for a moment before I began to speak. Once I started, a change came over the audience. The restlessness stopped. Every eye was on me. I had their complete attention. When my report was concluded they applauded vigorously. I never felt better in my life. I had licked my geratest fear.

How Did I Do It?

After the meeting they swarmed around me. "Best report we ever had." "You brought us the spirit of the convention." "Congratulations Frank, that was excellent." "You were a different man up there tonight—how did you do it?"

Their praise gave me a warm glow of satisfaction and their sincere admiration made me feel wonderful. It was the moment I had waited for. The moment I knew I could hold an audience in the palm of my hand and be able to communicate to them my own feelings, and to share with them the inspiration I felt.

Never again would I hesitate to address any group. Never again would I be terrified of a microphone. Never again would I cut my talk short because it obviously wasn't going over.

New Method Does It

They wanted to know how this seeming miracle had been accomplished almost overnight. Had I attended a school? Did I have a private tutor? How long did it take to learn to talk like that? The questions came thick and fast.

Then I told them of the course developed by the Institute of Human Communication, a course so jam-packed with practical know-how and actual practice, so pleasant and easy to follow, that in no time at all I was making rapid progress.

I explained how, through the use of a tape recorder, I had learned to speak well—in my spare time, at home and at my own convenience, with none of the embarrassment that sometimes comes in classroom sessions.

They Were Amazed

As I told them how, through the use of tape recordings, I was able to hear top-notch speakers and have my instructor point

out why they were good. I learned all the tricks of effective communication by hearing the masters.

My own speaking assignments were recorded on tape and sent back to my instructor at the Institute of Human Communication, so I really learned how to speak by speaking—not by reading about it. I told them, too, how the encouraging comments of the instructor helped to bring me out of my shell and turn me into a good speaker in a short time.

Is That Your Story Too?

Have you envied those who have the "gift of gab?" Are you terrified by an audience? Are you wasting valuable training that you have in your job because you cannot communicate effectively with your superiors and put *your* ideas across?

Is your speaking ability equal to your position in your community, or your station in life? Can you make a dramatic and effective appeal for funds for your favorite charity? Have you been "passed over" for promotions in favor of other men, perhaps with less knowledge but with the ability to speak effectively? Do you go through life wishing you could communicate effectively instead of doing something about it?

This Course Can Change Your Entire Outlook

There is no need to envy others who can put their ideas across, sway an audience or get better positions or more sales. It is within **YOUR** capabilities too. **YOU** can do it if you want to. Frequently, those who

have the most reticence turn out to be the best speakers—far better and more effective than the so-called "natural speakers"—those with the "gift of gab."

The ability to speak well is not solely its own reward, although that is there too. You will also acquire more prestige, admiration for your talents, a warm welcome wherever you go. You will find your outlook broadening, your interests widening, your life becoming more worthwhile and enjoyable.

Tailored to Fit YOUR Needs

Because all instruction is on tape, it is possible to give individualized, *private instruction* to every student. The assignments will be tailored to fit your needs and interests, to help you accomplish what you want to do. Sympathetic helpful instructors will guide your progress and work with you to develop your abilities to the fullest. You will suffer no embarrassment such as you might in a group.

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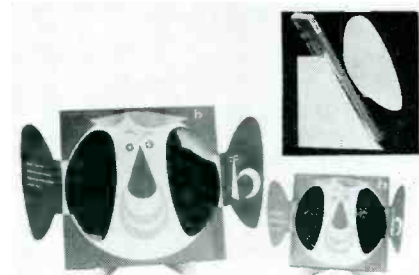
NEW PRODUCTS

REVERE STEREO T-204



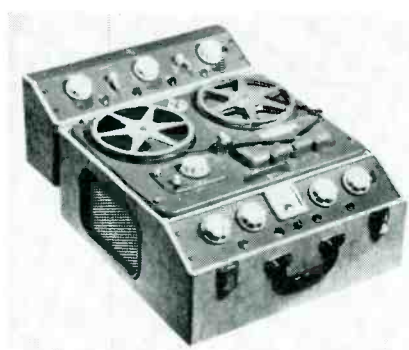
Revere Camera Co., 320 E. 21st Street, Chicago 16, Illinois, has added the Stereophonic T-204 recorder to its line. This machine incorporates a double channel in-line stereo head; it has an automatic stop; simple drop-in load; two matched speakers, base and treble, with cross-over network; and "Balanced-Tone". Also found in the T-204 is a simplified keyboard control, automatic safety lock and new warning light to prevent accidental erasure, dual speeds of 3¾ and 7½ ips, two-level recording indicators, jacks for hi-fi, public address and external speakers, index counter and high speed forward-rewind. It is priced at \$237.50. For additional information, write to Revere Camera Co.

BEL CANTO PACKAGING



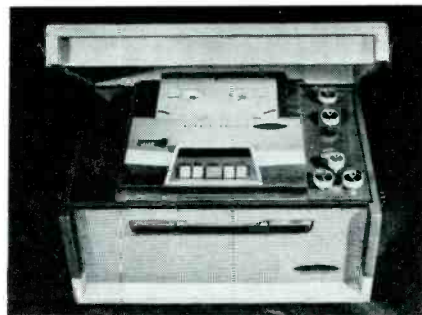
Bel Canto Stereophonic Recordings, 2919 S. LaCienega Blvd., Culver City, California, has introduced a new packaging concept. Their stereo demonstration records and stereo demonstration tapes are sealed in polyethylene and packaged in eye-catching boxes which, when two panels are opened, resemble faces with two large listening ears. The company's stereo demonstration record is a multicolored disk, showing five colors. For information and prices, write to Bel Canto.

ERCONA STEREO



The Ercona Corp., 16 West 46 Street, New York 36, N.Y., U.S. agents for the British Ferrograph Recorder Co., Ltd., has announced the first shipments to America of their new stereo recorders. Among these is the 3S model, which is available in speeds of either $3\frac{3}{4}$ and $7\frac{1}{2}$ ips, or $7\frac{1}{2}$ and 15 ips. It also features 3 motors; a newly developed Ferrite upper track erase head combined with a micro limiting switch which turns the instrument off automatically upon termination of recording or replay and is followed by an upper track record/replay head which is in turn followed by a stacked stereo head; a built-in monitoring speaker; and multiple input/output arrangements. Ferrograph also has available a new "Stere-ad" unit which provides for all playback requirements, including stereo, and which sells for \$195. The model 3S/N machine is \$495. For further information, contact the Ercona Corp.

NEW PENTRON



Pentron Corp., 777 S. Tripp Ave., Chicago 24, Illinois, has unveiled its new stereo cartridge tape recorder. This machine will play RCA's $3\frac{3}{4}$ ips, 4-track tape cartridge, as well as play and record at $7\frac{1}{2}$ ips. It will also play standard 2-track stereo tapes. The unit features five non-jam push button tape transit controls; it has a separate preamplifier for each channel and an additional 5-watt power amplifier; a VU-type meter, automatic shut-off at the end of each cartridge, retractable pressure pads for quick, easy cartridge loading, and a frequency response from 40 to 15,000 cps. Other features include dual speakers, automatic index counter, finger-tip speed change control, two input jacks, and two output jacks. The price is \$269.50. Contact the manufacturer for details.

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for example—the versatile DR330 Dynamic Cardioid and Ribbon

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DR332 Dynamic and Ribbon Cardioid
Professional model with cardioid polar pattern and variable impedance. Frequency response 40-13,000 c.p.s. List Price \$162.50.

for example—the handsome D22 Omni-directional Dynamic

Smooth peak-free response from 40 to 13,000 c.p.s. means you virtually eliminate feedback problems and get wonderful sound reproduction of both voice and music. "Slide-Lock" permits easy removal from stand for hand or suspension use. Variable impedance. List Price \$99.50.

for example—the low cost 204 Series Tape Recording-Conference Microphones

Sleek, modern, and versatile, with wide frequency response (from 70 to 10,500 c.p.s. in the crystal model). Also available in ceramic and dynamic types. High or low impedance. Push button allows "Selective Recording." List Price from \$16.00.



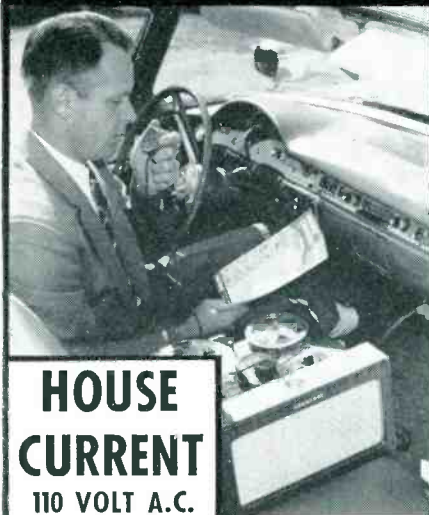
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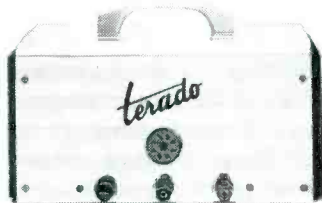
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TAPES TO THE EDITOR

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.

Dear Mr. Editor:

Here's an open letter to audiophiles.

Am I being duped out of Hi-Fi?

I like good music. I like high fidelity. I've been keeping up as much as possible with America's great strides in fine sound reproduction.

But what has been happening lately? I have a feeling that I'm being duped. Let me explain.

The advent of stereo tape reproduction to me was the ultimate in high fidelity and my flat pocketbook certainly reflects my enthusiasm. For several months now, I've been relaxing and completely enjoying my stereo tape set up, and reading just about everything available on the subject.

Suddenly out of a clear sky, comes disquieting rumors that possibly my equipment will be obsoleted . . . that four-channel stereo tape recorders may replace the "old fashioned" two channel. My wallet groaned to such an extent that I took it upon myself to investigate this possibility.

Believe me, my secretary thought I had changed businesses when I started my inquiries. Here's what I found out:

1. Availability of four-channel tape recorders is practically nil. Manufacturers are holding back to see what the tape people will come up with.

2. Availability of tape is less than nil. These people are holding back to see what tape recording manufacturers will come up with.

3. Dealers aren't ordering anything. They're waiting to see what the manufacturers are going to do. They're waiting to see what the tape producers are going to do.

To me, that looks like a complete impasse.

Further personal investigation has convinced me that not only are the tape producers delaying production of four-channel tape, they're not producing two-channel stereo tape either.

So here I sit, with several hundred dollars worth of stereo tape equipment, waiting for manufacturers to decide whether they should try to make it obsolete or not.

But here is really what makes me inquire whether or not I'm being duped.

High fidelity reproduction has become a "must" with me because I've read advertisements about it, investigated it, heard demonstrations, finally purchased the equip-

ment. This conviction has taken years of development and the producers of hi-fi equipment did a darn good job on me. I seek nothing but the ultimate in high fidelity.

Now . . .

Investigation has shown me that all this hi-fi folderal apparently meant nothing to some manufacturers other than as a gimmick to sell more equipment.

It seems to me that some manufacturers and tape producers are going overboard to sell us an inferior product at the expense of high fidelity. Prove me wrong, if you can, but I had occasion to interview a sound engineer who refuses to pour over plans and blueprints to produce a four-channel tape equipment. I asked the simple question: How will four-channel tape stereo affect fidelity?

In essence—here's his technical response:

"The signal level which can be applied to a tape is a direct function of track width, so that halving the track (from 1/2 track to 1/4 track width) halves the input signal to the recorder. Unfortunately, there is no corresponding reduction in amplifier noise or in hum pickup by the head.

"One might be led to believe that advances in head construction have resulted in making up this loss in signal. This is not true. Measures of head output show that actually some added losses are encountered in going from 1/2 to 1/4 track so that performance does not even come quite up to the expected half level.

"The one means of restoring the 1/2 track output level is doubling the amplifier gain, which, of course, doubles the noise.

"Next, consider the absurdity of taking this unfavorable situation and making it doubly bad with the cartridge proposal of decreasing the tape speed from 7 1/2 inches per second to 3 3/4 ips thus reducing the signal by another half."

Here's my interpretation of what this engineer says:

With the proposed four-channel tape cartridge—one fourth the signal strength with no improvement in noise gives about a 12 DB degeneration in signal to noise ratio. One half the tape speed, one half the inherent frequency response range.

Even if 7 1/2 ips reels are used, the signal to noise ratio will be degraded 6 DB

(Continued on page 32)

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TAPE IN EDUCATION

BY JOHN J. GRADY, JR.



THIS 1958-59 school year could be *that* important stabilizing year in the history of educational magnetic tape recording. It could be the year that will witness the acceptance and establishment of tested and approved patterns of tape instruction—the patterns developed by inventive educators as the result of personal experiments in schools and colleges throughout the nation. During the past three years, TAPE IN EDUCATION has passed along to magnetic recording fans numerous reports descriptive of actual applications of magnetic audio, which fully proved that education and educators will be greatly benefited by the systematic installation of tape recording in the schools of our country.

Probably, the most tangible form of recognition—that extensive benefits, via tape recording, are available to all educational institutions—is supplied by the Fund for the Advancement of Education, a facility of the Ford Foundation. For the Ford Fund for the Advancement of Education definitely is living up to the high purpose indicated by its name, and for many months has been supporting one of the most extensive basic experiments in the adaptation of magnetic recording to the true advancement of American education.

In eight schools operated by the Sisters of the Benedictine Order, some in Kansas and some in Louisiana, magnetic recording as an instructional facility is being thoroughly tested. So far, the results are inspiring. Multi-thousands of dollars, supplied by the Ford Foundation, were attracted to the experiment because of the earnest effort of the Sisters to give their students—even in the primary grades—the learning tools and the other associated advantages of this electronic age. This dedicated effort to provide better education has won the interest, praise and support of many thoughtful citizens. These are the kind of citizens who are aware of the present problems of education—those problems arising because of the great increase in the school-age population, without corresponding increase in schoolroom facilities, or adequate increase in the ranks of instructors.

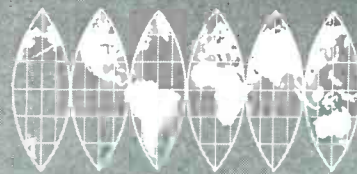
The carefully-planned magnetic recording installations designed for the use of the Benedictine Sisters embrace features that may establish a logical pattern for all schools. Naturally, such installations are far more intricate than the experimental use of ordinary portable tape recorders. One of the most praiseworthy of the designed features is the playback setup, which permits the communication of a lesson ON THREE LEVELS to the membership of a class, each member of which is equipped with a headset. Slow learners will listen to instruction on a tape, which is painstakingly prepared for them. Aver-

age learners will listen to a treatment of the same lesson designed for their quicker perception. Fast learners listen to another treatment of the same basic material, which takes into consideration their advanced reasoning ability. Only the teacher at the console knows who is being instructed at the three different levels. All teachers recognize this is a protective advantage for class morale. If any pupil fails to understand, help can be asked for without disturbing others, and the teacher can extend assistance without interfering with the concentration of other members of the class. Soundproof booths are included in the installations at the Benedictine schools. Also, the essential control console, equipped with heavy duty tape recording decks, switches, lights, and a focal maze of concealed wiring.

It's obvious that the most elaborate installation of Audio educational components has little or no value, unless there is a library of adequate instructional tapes available for use. Competent teachers can increase their value and their prestige by mastering the operation of magnetic recorders, and by developing their ability to transmit knowledge to students via a library of self-prepared tapes. In the future, there is certain to be a tape library in each school. And, of course, there will be an increase in the number of sources from which instructional tapes may be obtained. But the teacher, who meets the challenge of this electronic age, will secure greatest satisfaction by having a personal library of his or her own tapes, or of the scripts from which to prepare timely tapes. With such a file, there will be a conservation of time, and an elimination of mental and vocal effort to be expended on repetitive assignments. And the possession of satisfactory personal material will permit one to do a better job of teaching.

At Mt. Scholastica College, in Atchison, Kansas, the Benedictine Sisters maintained a five-week workshop for teachers during the recent summer vacation. During that period there was instruction in the operation of their Audio system. And through collaboration of experts in texts, additions were made to the tape library covering subjects taught in the elementary and high schools of the order. TAPE IN EDUCATION extends congratulations to Sister Mary Theresa, who originated the three-channeled method of individualized tape teaching, and to her teaching associates of the Benedictine Order. Congratulations are in order, also, for the Fund for the Advancement of Education, of the Ford Foundation, for recognizing the merit of magnetic audio instruction in the schools of America, and gratitude is tendered for the material impetus provided to modern methods of teaching the youth of the nation.

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CROSSTALK

from the Editors

* * * * *

PANIC BUTTON PUSHERS among dealers and consumers who flipped at mention of stereo disc and tape cartridge had better take another look at stereo tape. When novelty wears off with record grooves, tape will still be the best way to have hi-fi stereo. Fear of obsolescence is also shattered by four track heads available for most machines if owners wish to install them. In most cases, four track heads will also play present two track tapes. Tape in cartridge is announced but not on market as this is written. These will be four track and can be played with four track heads on any machine if the tape is removed from the cartridge. We admit this is a silly way to do it but it can be done. No four channel reel tapes are available yet.

* * * * *

NEW YORKERS and suburbanites (and exurbanites, too) will have two shows in the fall worth looking into. First in point of time is the High Fidelity Show at the New York Trades Show building, 500 Eighth Ave. It opens September 30 and runs through October 4th. Theme of the show will be "Age of Stereo." Next show, in the same building is the Industrial Audio-Visual Show which will cover A-V in widely diversified fields. It runs October 7 to 10th.

* * * * *

WORLD'S THINNEST GOLD for use in recording heads has been made by the American Silver Company. This ultra-thin strip is used as non-magnetic gap material in recording heads. It is only 80 millionths of an inch thick—which is 40 times thinner than a human hair.

* * * * *

INTERCHANGEABILITY of magnetic tape recordings throughout the world is the purpose of the new international standards recommendation of the International Electrotechnical Commission available in the United States through the American Standards Association. The Standard is contained in IEC Publication 94, "Recommendations for Magnetic Tape Recording and Reproducing Systems." Copies are \$2.40 each from ASA, 70 E. 45th Street, New York, N. Y.

* * * * *

ORDINARY RECORD BUSINESS is reported slow except for pop singles for the youngsters . . . impact of stereo is starting to make itself felt and with all major companies represented this fall should see a stereo boom.

* * * * *

CONGRATULATIONS are due the Magnetic Recording Industry Association for their successful fight to have a proposed 10% tax on tape recorders removed from the present tax bill. Your editor appeared personally before the Senate Finance Committee to state the industry's position on the bill while other members of the industry put in hard work behind the scenes contacting senators and congressmen in person, by phone, wire or letter. All this means that you will be able to buy your new recorder without a 10% excise tax on it.

* * * * *

INDUSTRIAL A-V EXHIBITION listed above has impressive list of lectures covering many aspects of A-V in industry. On display will be famous collection of antique cameras, magic lanterns, etc. which were forerunners of modern equipment of today.

* * * * *

NETWORK STEREO broadcast will take place on the George Gobel show on October 21. NBC network radio and TV will be used. The stereo pickup will be live. To receive it an AM radio should be placed approximately 8 feet to the right of the TV set and both tuned to NBC net stations. RCA is show sponsor.

TEEN TAPERS

BY JERRY HEISLER



BACK to school again after what I hope has been a pleasant summer for everyone. This past summer has given us the chance to try out some new things and get some new outlooks on the field of teens and tape recordings.

Thanks to Irv Rossman of Pentron we had the privilege of using some Pentron component tape equipment that permitted stereo recording as well as playback. We had a tape deck plus two record-playback pre-amplifiers. We used our regular hi-fi amplifiers and speakers and had a real neat package. Teen priced, too.

Dubbed a few stereo tapes that I borrowed from a friend. This is alright providing you don't use them for any other purpose than your own collection and you don't charge for dubbing.

I also managed to tape a couple of FM stereo broadcasts and the reproduction was real good.

Now that school is back in session there should be ample opportunity to start the year off in a big way recordingwise. Allow us to go over some ideas we've discussed before but which may have slipped your minds.

A yearbook in sound featuring recordings of all the big events in your school year should be started NOW at the first part of the year. Football season, homecoming, and a few other affairs are usually happening right at the beginning of the school term and if you don't look out they pass you right by before you get your mike plugged in and your head cleaned

off. Get in there right now. If you have a tape club, make a list of projects right away and start systematically recording the necessary material. And if you don't have a club, write in. We still have some kits available to get you started.

Start thinking of some unique things you can do. Anyone knows the humdrum routine recordings that can be made. Classroom use is taken for granted, but how about something different? Ronnie Johnson, now at Amherst College, tells us of a time in high school when the dramatics teacher was leaving to get married. A bunch of people got together and put the splicer to work making a reel or two or three of all of the various dramatic and musical productions that this particular teacher had taken part in producing. As a going away present the whole gang pitched in and bought her a new tape recorder and gave her a library of tapes of every play and musical put on during her stay at that school. Needless to say the teacher was simply overwhelmed and she had a gift that was certainly priceless. And this was possible because some people had enough foresight to make the recordings of the productions as they were put on.

Ronnie also tells us of the great parties they put on after the plays when the entire cast would gather to hear the tape. It reminds us of the familiar movie scene where a play cast gathers around to see what the newspapers have to say about the performance. The excitement by these teens was as great as if they were actually attending their own performance. In cases where the production was put on more than once, a listen to the tape often improved an actor's subsequent performance.

Many of you may be entering the ranks of college students. I myself will leave the teen ranks this year, but that doesn't lessen my interests any and I find actually that recorders are good for loads of fun at any age and during any school year. I've used a recorder from 5th grade on into my third year of college and have found some use for it each year and actually have increased my use of it as the years progressed.

For college students here are some ideas: send tapes home to your parents, or friends at other schools; study with your recorder; use it more enjoying music; record bull sessions in the dormitories. This last item can be truly fascinating. I would imagine that some of the greatest unpublished theories on the course of human society and what is wrong with the world, girls, school, teachers, automobiles, or just about any other subject that college students gripe about have been discussed in college dormitories. We'd sure welcome some samples of such recordings.

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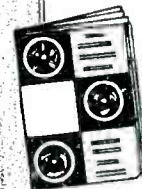
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TAPE CLUB NEWS

When the U.S. postage rates went up on August 1, more and more club members began using Third Class mail for shipping tapes. While this class has been available for tapes for many years, club members still preferred First Class to assure speedier delivery and better handling, and in some cases members had a tough time convincing postal clerks that tape recordings were Third Class matter.

Jim Greene, executive secretary of Tape-Respondents, International, consulted the Post Office Department in 1957 and obtained an official ruling from Edwin A. Riley, director of the Division of Mail Classification. Mr. Riley wrote, in part: ". . . Tape recordings sent in the domestic mails by one individual or profit making organization to another individual or such organization are chargeable with postage at the Third or Fourth Class rates, according to weight, provided there are no unauthorized written enclosures or additions . . ."

The reference to "individuals" and "profit-making organizations" was to clarify an omission in previously published postal regulations which had granted special rates to non-profit organizations for the shipment of tapes, motion picture film, etc.

Persons who wish to write a note and enclose it in their tape box may do so by paying an additional 4¢ in postage, and writing "First Class Letter Enclosed" just above the address.

Also on August 1, however, weight limitation on Third Class mail was raised from eight ounces up to (but not including) 16 ounces. Larger reels may now be sent by Third Class mail.

The new rates are 3¢ for the first two ounces, and 1½¢ for each additional ounce (or fraction) up to 16 ounces. For more complete details on the new regulations, ask your Post Office for a copy of the pamphlet entitled: "Reprint of Postal Bulletin of June 19, 1958."

A new tape club, called the C.R.I. Pen and Tape Club is in the process of being formed. Its present membership includes young adults who were former patients in the Children's Rehabilitation Institute, Reisterstown, Maryland. Most of them are confined to beds and wheelchairs, and need a club of this sort as a communicative outlet.

The membership is not closed. Any person may join who fits into one of the following categories: 1. anyone confined to a bed or wheelchair who wants to write and/or tapespond with other such members. 2. a friend of and introduced by one of our members. 3. one who is interested in the club's cause and has something worthwhile he wants to contribute, e.g. music, spiritual music, etc.

If you fall into category one, simply send your name, address, and whether you have a recorder (give make), and you will be in, and will be included on the next club roster sent out. If in joining, you want a friend to join with you, send his or her name along with yours with his or her address and recorder make. There are no membership dues; however, you must pay for your own postage, etc. with reference to writing and/or tapesponding with other club members.

If you fall within category three, simply send for a roster. As soon as we have full information as to who have recorders, their makes, etc. a complete roster will be sent. Your materials may be sent in any fashion you wish; separate recordings to each member with a recorder, or round robin, etc. Since this club has no formal organization, there will be no one to oversee the safety of your materials, and you, of course, are asked to pay all postage involved.

The purpose of the C.R.I. Pen and Tape Club is to help relieve the lonesomeness of those restricted to beds and wheelchairs. Presently there is no intention to create a formal organization, and its procedures are to be restricted to informal person to person communication geared to the individual's abilities and desires. It is called a *Pen* and *Tape* club to give the members a wide selection in their desire to communicate.

Anyone wishing further information may contact the C.R.I. Pen and Tape Club, c/o James M. Laing, 3411 Old York Road, Baltimore 18, Maryland.

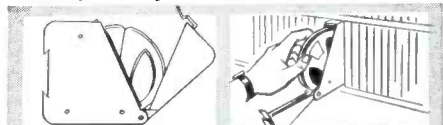
The WTE list of World Tape Pals has a new addition, a superbly recorded tape of the operatta *Hiawatha*, as performed by students of Bellville High School, Cape Town, South Africa. Sound technician for the program was Owen Moore, WTE representative for that country. Members are invited to obtain a copy.

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QUESTIONS & ANSWERS

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

Q—If you know of any publication that will tell me which stereo tapes, of all those for sale, have no hiss or tape noise and are of professional quality, I would like to know where I can find this information. The reason is because I have bought some tapes that are so low in signal and quality that I don't play them for anything except for comparison and they cost as much as those that are clean and brilliant and have no audible noise.—*A. C. W., Warren, Mich.*

A—Whenever you find a tape to be defective we would suggest that you immediately return it to the dealer or manufacturer from whom it was purchased. They should be glad to make a satisfactory adjustment.

We do our best in the tape review section to mention hiss or noise on tapes whenever it is found.

Q—I am a new and very enthusiastic owner of a tape recorder (Bell & Howell model 2000 with matching floor speaker) which finds its most important use in bringing good music into our living room.

All of my tapes, to date, have been obtained by hooking a jack into a very high quality component hi-fi set and the result has been extremely satisfactory, to me at least. I can assure you that it is a great pleasure to listen to a symphony through its entirety without having to get up and turn the record over, not to mention the fine reproduction.

However, all has not been a bed of roses. I have had to learn a lot the hard way, and it seems most of my library has been re-recorded several times before I got it to suit me. The trouble stems from my lack of knowledge of the playing time of the work I am recording. Sometimes the tape runs out in the middle of the last movement of a symphony or else I have a third of a reel left. With Mylar double play tape available, plus the various reel sizes, I can always manage to end up with just the right amount of tape but sometimes it takes me several tries before I come out right.

To get to the point, is there any publication which gives the playing time of at least the common classical works? Such a publication would be extremely useful to

me, especially if it would go into detail, breaking the symphonies down into the time for each movement.

Any help or suggestions along this line would be greatly appreciated. Incidentally, some of my friends in radio tell me that recordings done by different conductors and orchestras do not vary to any extent so I think such a "time guide" would be quite practical for the ever growing bunch of tape fans.—*Dr. C. K. E., St. Paul, Minn.*

A—The book, *Standard Musical Repertoire—Accurate Timing* by Wm. Reddick, published by Doubleday & Co., New York gives the times of many selections and will probably meet your needs. Sorry we do not have the price of the volume but the publisher can let you know that. There is some variation between the interpretations of different conductors but not so much that they are not within a few minutes of each other.

Q—In reading over the specifications for most high fidelity equipment, I note a comparison audio range of 20 to 20,000 cycles with a flat range in many cases close to this range. However, in reading the specifications for tape recorders, I note that one of the best machines has only 30 to 15,000 with a flat range of 75 to 10,000 cycles. In most reports it seems that tape recording reproduction gives a superior acoustical performance. Therefore, can one rightly draw the conclusion that it is not necessary to have a full range (20 to 20,000) reproduction in order to secure top performance?

We, the general public are told that we must have a 20 to 20,000 cycle range for high fidelity equipment and yet in tape recording equipment, one cannot buy equipment with these specifications, or at least on the general public retail market. Your technical editorial knowledge would be appreciated on the above acoustical question. Thank you.—*S. E. S., Alliance, Ohio.*

A—Anyone who can even hear 20,000 cycles should consider himself very fortunate and also very young. Twenty cycles you can feel more than hear and 15,000 cycles should be considered the top in adult hearing ability. As we grow older our ability to hear high frequencies diminishes rapidly. One of the best hi-fi investments many folks could make would be an ear test by a hearing specialist. It could save them many dollars. There is little use in paying for equipment that will produce sounds we cannot hear—like a dog whistle.

Most good amplifiers will carry the 20-20,000 cycles in a pretty straight line but it takes excellent speakers to get most of this range into the air and to your ears. The better the range the better the sound—within the limits of your own hearing.

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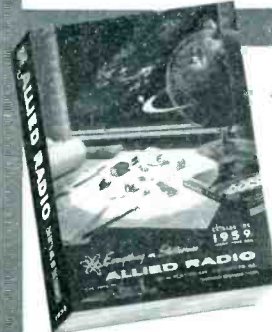
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Here an extension or "roving" loudspeaker (located right under the flag) is used in an Omaha school to insure good hearing for all the students in the room. Very large rooms would require a second extension speaker at the rear of the room, as well.

THE TAPE RECORDER GOES TO SCHOOL

by Marion Mitchell

... here are some tips on more effective use of a great teaching tool.

TEN years of experience with magnetic tape in the classroom have made this remarkable recording medium one of the most effective, most widely used audio visual tools at the teacher's disposal today. Educators were among the very first to use tape, immediately sensing its vast potential.

While the paper magnetic tapes and the early recorders of 1947 and 1948 were somewhat primitive by comparison with the greatly improved tapes and machines of today, they nevertheless opened the door to the future.

Even the early wire recorders had been used to a limited extent in some of the country's classrooms, providing students with a new educational experience—in essence, an opportunity to hear themselves as others heard them. But this "mirror for sound" concept was only the beginning, for in 1949 the "tapes for teaching" tape library idea was

born. Originated in Minnesota by the state department of education's A-V director, Richard C. Brower, and given financial and technical assistance by Minnesota Mining and Manufacturing Co., the "tapes for teaching" program spread from Minnesota to dozens of other states resulting finally in the establishment of the National Tape Repository at Kent State University in Ohio. There valuable master tapes on a wide variety of educational subjects are available for duplication and distribution to schools nationally.

Today tape in the classroom has pretty well divided itself into those two categories of use—the do-it-yourself, record-it-in-the-classroom approach and the "listening," or tape library, approach, using recorded educational materials from either the state or national tape centers.

From the tape library approach, the tape recorder has

made it possible for the smallest school to offer—on tape—the voices and wisdom of world-famous authorities on a wide variety of subjects. In many respects, such taped programs serve as an equalizer, providing opportunities in learning for students even in the more remote hamlets previously reserved for the more cosmopolitan, big city schools.

From the in-classroom recording approach, the tape recorder is equally advantageous. One of the major advantages which it has to offer is what was classified years ago on radio and today in TV as "audience participation." While the teacher herself has always relied on such "classroom participation," many of the educational aids such as films, filmstrips, radio, television, or disc recordings—do not enable the student to participate as fully as does the tape recorder.

But because live recordings can be made on tape, the student can more effectively be drawn into the classroom situation which the teacher is trying to set up. As a result, student creativity becomes more important, and is further developed. It provides a motivating force for the student, and stimulates interest in what might otherwise seem to him to be something less than a challenge.

Every year, tape recorders are applied in educational situations which a few years ago seemed bizarre and impractical. For example, one teacher uses the tape recorder in English classes three or four times every year in a section on book reports. By having the students read their reports to the class and taping them, they benefit in a variety of ways, combining literature, composition, grammar, speech and use of the library. Again, the tape recorder provides both motivation and a corrective influence on the student.

But since teachers have for years been uncovering and developing new uses for the tape recorder in the classroom and have been publicizing them steadily in the nation's education-directed magazines, suggestions here are aimed at the "technical" side of using the tape recorder in the classroom, aimed at enabling the teacher to use the tape recorder itself more effectively . . . in short, to get more out of the tape recorder and to improve on the recording techniques themselves.

USING THE MICROPHONE

Proper microphone technique can mean a big difference in the quality of the recordings made in the classroom. While many schools purchase more expensive microphones in addition to the standard mike which comes with the recorder, the standard non-directional microphone is capable of producing excellent recordings *if properly used*.

Perhaps the single biggest mistake is attempting to record with the microphone too far away from the person speaking. This is especially true in attempting to record a group. To compensate for the distance, the usual procedure is to turn up the "gain" or volume as far as it will go. This causes all sorts of problems including room reverberations, background noise and recorder noise and results in something less than a clear, intelligible recording.

So for the best results, keep the microphone close to the person speaking—preferably from 6" to 18" away. If the room itself is heavily draped, one problem—that of room reverberation—will be less serious. But the problem can also be solved by use of a mixer enabling three or four microphones—one for each one or two persons speaking—to be fed into the recorder simultaneously.

And if you want to improve the fidelity of your recordings—especially desirable in recording musical groups—purchase of a better grade dynamic microphone of the low impedance type is a must. Incidentally a little gadget called a cable transformer which adapts your tape recorder for use with a low impedance microphone can be had for about \$15. One very important advantage of using a low impedance microphone is that it makes it possible to use long microphone cables of 50' or 75' instead of the usual 6' cable and provides considerably more mobility in recording.

The teacher, too, can individually benefit from classroom recording. Many teachers have pointed out that regardless of the number of years they have taught, they felt they could profit from occasional self-evaluation using a tape recording of a typical teaching session.

Although this is no problem in most class situations, where demonstration is involved—such as in industrial arts classes—one solution is to use a lapel microphone. By



Left: Mrs. R. E. Gibson of Westside High School, District 66, Omaha, Neb., who designed the spelling series tapes and tapes for teaching Spanish in classes where the teacher herself knows no Spanish, is shown here transcribing and editing a typical tape. In the background, a master tape player feeds a recorded tape to three tape units turning out enough tapes to supply Spanish tapes for the entire school district. Right: here a pencil type microphone of the type supplied with the V-M recorder and others has been equipped with a cord which can be hung around the instructor's neck freeing his hands for classroom demonstration while recording at the same time. Regular lavalier or lapel type microphones can also be purchased.



Left: Tape recording in the classroom is not new. This picture taken in 1948 shows an early Brush Sound mirror tape recorder being used with the original "Scotch" brand magnetic tape No. 100. This combination of tape and recorder paved the way for vastly increased use of tape recording in the classroom in the past decade. Above: Recordings from the state tape library can be used in many ways. Here a dramatized version of a story called "The Painted Pig" enlightens the story hour for a group of youngsters.

simply clipping on such a microphone, the teacher's hands are freed and there is no interference with the demonstration. Some tape recorders employ pencil-type microphones which can easily be hung around the neck with a cord, improvising a TV-type lavalier mike.

BETTER LISTENING WITH THE TAPE RECORDER

Another improvement on tape recorder use is made possible by the addition of an extension or "roving" loud-

speaker enabling you to put the sound where you want it—sometimes in places where it is not always possible or convenient to put the tape recorder itself.

These are frequently available as accessory items or in some cases can be made up in the school shop from components bought at a local radio parts house.

Another technique which should not be overlooked is the use of headphones since they make it possible for one or a number of students to listen to a tape without disturbing other students in the same room. One handy gadget on the market enables you to plug a whole series of headphones into a single control box so that five or six students using earphones can listen simultaneously.

THOSE "PORTABLE" RECORDERS

While all the tape recorder manufacturers have made great progress in making their machines lighter, smaller and more easily portable, a good recorder is inevitably fairly heavy because of the very nature of the high quality electronic components that go into it. But there's an easy way to solve the problem by putting it on a small cart so that it can easily be rolled about the classroom or from classroom to classroom, even by the students themselves.

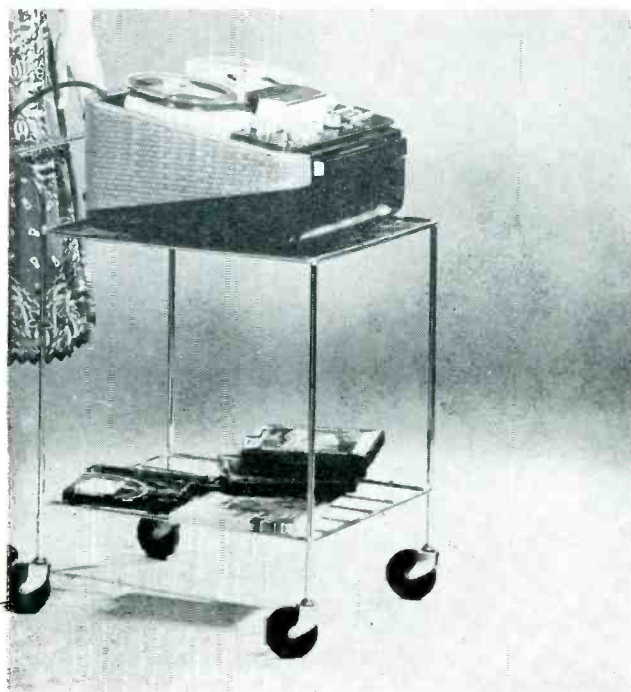
Such a cart—usually a metal or wood table or cabinet equipped with large, easy-rolling casters—can greatly increase your tape recorder's versatility and solve the problems of having it *where* you want it *when* you want it.

Then, too, such a cart or cabinet provides room for storage of extra tapes, extension cords, the recorder lid and the like.

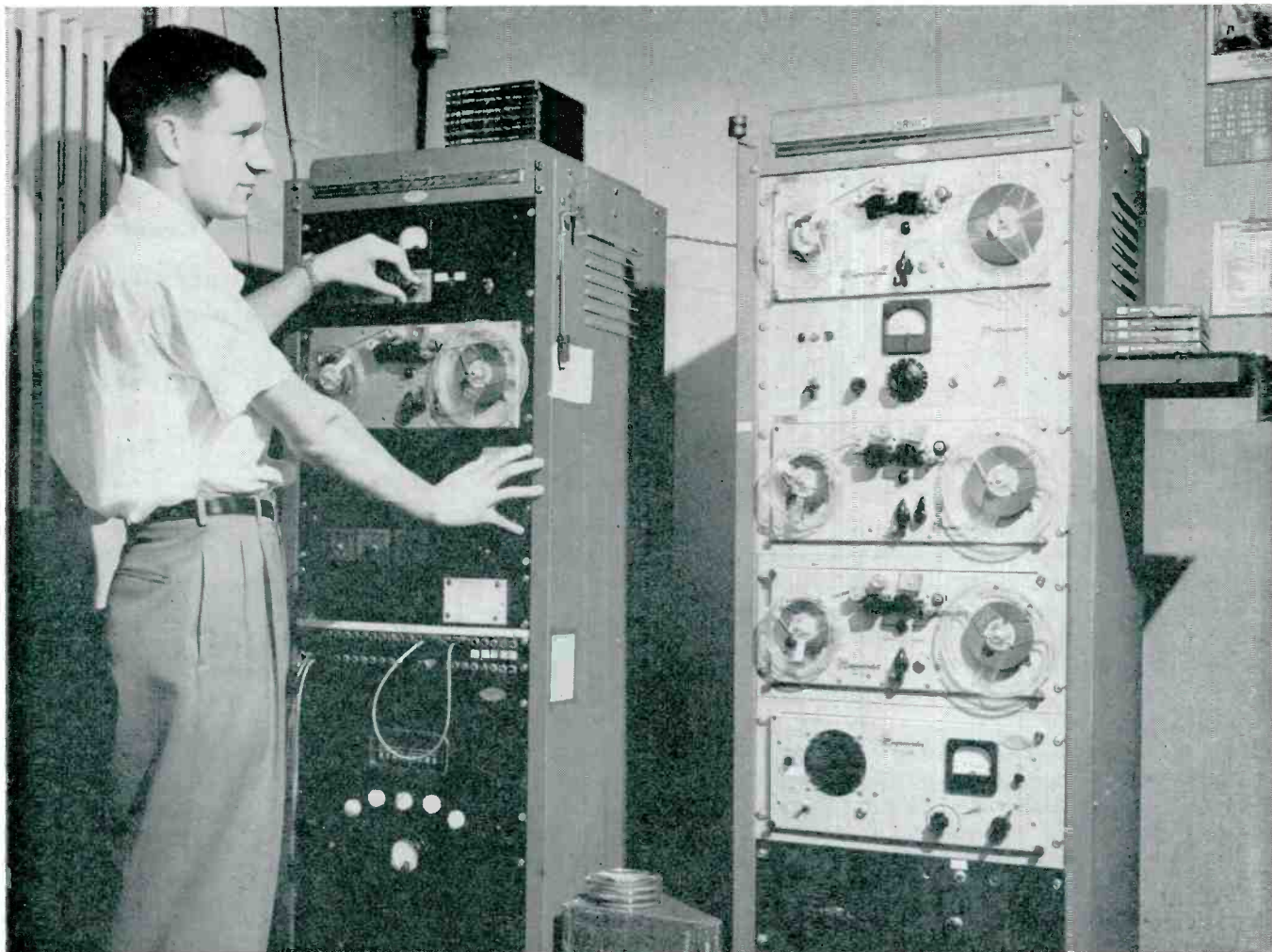
STEREO IN THE CLASSROOM

While the big boom in stereophonic tape recording has been largely in high fidelity music systems for the home, stereo tape has a place in the classroom, too. For if stereophonic music on tape means better music reproduction at home, it certainly can mean better music for the classroom.

So realistic are the stereo tape recordings which have been on the market for some time that they have—in many



Those "portable" recorders can be made more-so by placing them on a table or cart with easy rolling casters to put your tape recorder where you want it—and easily, too.



One of the milestones in educational tape recording was establishment of the Minnesota "tapes for teaching" library offering duplicating service to schools all over the state. Since then, similar programs have been adopted in most states, and a national tape repository has also been established.

classroom applications—added real excitement and enthusiasm to music appreciation and related courses.

Stereophonic tape equipment costs more, of course, because additional equipment—mainly a second amplifier and loudspeaker—is required. But the equipment is well worth it. Then, too, many of the conventional monaural tape recorders can be adapted for stereophonic playback, and in some cases, other amplifiers and loudspeakers already in your school's audio visual stable can be used for the conversion to stereo.

One education area where two-channel tape recorders of a slightly different type are being widely used is in the language education field. By recording two tracks on the tape side by side and in the same direction—just as stereo tapes are recorded—the language student can listen to the correct pronunciation of a foreign word or phrase which has been recorded on one channel, then repeat it, recording his version on the second channel. Listening to the playback of the tape, the student can hear the correct pronunciation and immediately afterward his own pronunciation for a very direct, enlightening comparison.

Still another application for two-channel recording is in music training using a stereo-type tape, one track of which has been recorded with all the parts of an orchestra except his particular instrument, or—possibly—with the exception of the vocal. The student listens to that channel of the

tape, then plays along on his trumpet, clarinet, etc. Upon playback he can hear both tracks on the tape, demonstrating very clearly just how well he matches the rest of the orchestra, and where his lack of technique is most pronounced.



This is a close-up of a typical language laboratory listening booth recently established at Macalester College in St. Paul, Minn. In addition to a two-channel tape deck, the booth includes a control panel, headphones, microphone and provision for the student to talk back and forth with his instructor.

BUSINESS: New Opportunities for Tape

by
Geoffrey Grant

... much larger than audio uses is tape's use in business and industry. It would take a large book to detail them all.

MANY otherwise well-informed recorder owners are nearly ignorant of the fast strides being made by industry to incorporate magnetic tape into daily business procedures. In the after-hours bar, in the commuter train, during luncheon, business people who own home-type recorders are comparing notes with associates, discovering new tape uses.

Magnetic tape has outdated countless time-consuming procedures, helping workers to more useful and productive jobs. Tape recording offers new—and better—ways of doing most things.

The magnetic medium is a completely flexible tool for recording and storing information of all types for literally thousands of varied applications. Let us look at a few of the ways in which magnetic tape is being used in business and industry today. Perhaps these tried and proven ideas will suggest operations in your own plant or office where magnetic tape can save you time and money.

Simplified field reports: Salesmen love to talk—but sometimes hate to write especially after a day-long selling session. Rather than writing out the day's call report in a hotel room late at night, salesmen now record their comments on each call immediately afterwards—in the privacy of their own car. A tape recorder installed in the salesman's car enables him to record his thoughts while still fresh and clear. The odds that it will be more clear and comprehensive are extremely high. Small but extremely important details, which might be left out of a written report because

of the time and effort made in presenting them on paper, will ~~appear~~ find their way onto magnetic tape.

Keeping branch offices informed: The listener can always do a better job of interpreting the basic significance of various points from inflections of the speaker's voice, impossible to obtain from a piece of paper. For this very reason many firms record important management conferences. Instead of having a stenographer take shorthand notes and type verbatim transcripts, the entire session is recorded and sent to all branches simultaneously. Tapes can be easily duplicated, eliminating any need for typewritten reports.

News digest on tape: Key executives, too busy to keep abreast of all trade publications pertinent to their field, are now able to have assistants record a daily summary of all key information on magnetic tape, saving precious hours of reading time. The tape may be played back during the day or played on a tape deck installed in an automobile while driving home in the evening. For example, members of the California Medical Association receive in capsule form on tape a digest of latest medical findings each month.

How to salvage extra time: Many hours of unproductive time are spent each week by business executives in driving to work, conferences and meetings. With a tape recorder, these otherwise unproductive hours can be put to work. With a tape recorder in the car, executives record their thoughts, draft memos, list things to do the following day. After the thoughts have been recorded, a stenographer need



Many of the versatile tape recorders can be used as a small PA system in addition to the function as a recorder. Here the recorder carried the burden of the talk with slides and the lecturer is now answering questions from the audience using the recorder to boost his voice.

The use of completely portable, self-contained machines is rapidly increasing on a number of fronts. They are being used for "interviews in depth" to get dealer and consumer reaction to products or advertisements by ad agencies. Originally confined to use in the field of radio broadcasting, their small size and independence of power lines has made possible many business uses.



merely transcribe the tape.

Speeding the memory process: Company officials who must memorize speeches on short notice can speed the memory process by the use of tape recording. Speaking into a tape recorder, playing back to listen, and re-recording is an effective and relatively painless method of committing a speech to memory. Also, a tape recorder with a pillow speaker and timer can be hooked up to play at periodic intervals during the night while sleeping. In this way, the subconscious mind can also assist in committing information to memory quickly.

Work music for greater efficiency: Background music in the plant conveys a feeling of well being, projects a pleasanter working environment. In factory or office, work music recorded on tape increases employee efficiency. Work music counteracts the natural sags in a worker's productive

efficiency, such as before lunch or near the end of the shift. By increased tempo and rhythm, the music overcomes physical fatigue. Long playing magnetic tape reproduction units are capable of producing continuous high quality music for periods up to sixteen hours.

Noise level "recordings": Industrial noise is becoming an increasing problem as plants become more mechanized. A problem with obvious legal overtones, the courts have already held that noise deafness is a compensable injury. Magnetic tape is of prime value in evaluating noise levels within a plant. Noise level "recordings," preserved on magnetic tape, can help expose potential danger spots and can prove an invaluable legal defense in damage suits.

Danger: no smoking: Tape recorders activated by foot pressure pads or photo electric cells can be a far more effective warning device than a printed sign, warning plant



Tape forms the "memories" of the giant electronic computers and calculators. Used in widths up to two inches, it must be perfect for the slightest flaw in the tape would register as an error on the problem fed into the machine. These machines are also used for record storage, payroll computation and thousands of other intricate tasks. Magnetic banking is now being used in some banks where the machine enters all deposits, subtracts all withdrawals and has the balance instantly available at all times.



When this refrigerator door is opened, a magnetic tape message repeater amazes customers with a "catchy" sales talk and singing jingle. The door switch operates a continuous tape recording machine which gives the sales message.

employees who enter critical "no smoking" zones. Either a message repeating device or a continuous loop of magnetic tape can be used with equal effectiveness.

Secretarial shortage?: Is your firm faced with an acute secretarial shortage? With magnetic tape you can still benefit from the skill and ability of your firm's former top secretaries who became homemakers and now have a family. Routine correspondence dictated on magnetic tape can be transcribed by homemaker-secretaries in their homes. Finished letters can be on executives' desks the following day, using a messenger service.

Salesmen not admitted: The unapproachable, top level prospect can be frequently sold through magnetic tape. When it is impossible to make a personal sales presentation, many top salesmen send a tape instead. Such a presentation can be personalized by using a casual conversational style, including parenthetical insertions and appropriate anecdotes. A formal, written presentation forces a salesman to gamble on his literary efforts rather than relying on his most effective means of communication, the spoken word.

The unvarnished truth on tape: With magnetic tape advertising executives can obtain a spontaneous reaction of dealers and consumers. Magnetic tape recorders can be carried inconspicuously in a briefcase. Several fit within a coat pocket or shoulder holster. Microphones are available in inconspicuous lapel-style or simulated wrist-watches, tie clasps, fountain pens. If the interviewer prefers not to carry a tape recorder, a wireless microphone can be used to transmit the interview to a receiver which in turn feeds to a tape recorder located within a radius of several miles. For "in depth" interviews, magnetic tape is an ideal medium. The respondent's attention is not distracted by note taking nor does the interview have to be slowed to the speed it can be written down. Voice inflection and reaction time can convey a very different meaning from a checked square in a questionnaire form.

Talking point of purchase displays: By use of floor mat, switching devices or electric eyes, displays in supermarkets, appliance stores, auto showrooms can be made to speak up for themselves. Cut-out figures talk to customers when a

refrigerator door is opened, a mass display of canned goods sings a "catchy" commercial. Phenomenal sales gains are being made with such talking displays. With a magnetic tape message repeating device, it is a simple procedure to give a voice to a display.

Magnetic tape is literally a magic ribbon unwinding into the adventure and excitement of today's industrial revolution: A pell-mell race in which business is seeking and finding better ways of doing most things.

Of course, magnetic tape captures voices, music, sounds of all kinds. But in industry, magnetic tape also retains, instead of audible sounds, signal impulses that control automatic factories, remembers vital data for feeding to complex electronic computers. Through magnetic recording, automation, the bright promise of greater production at lowered cost, is rapidly becoming a reality.

Today's factory tool, computer, and instrumentation equipment is endowed with, not a brain, perhaps, but a magnetic tape memory. Unlike its human counterpart, this memory can never falter, never forget.

In industrial measurements, magnetic instrumentation tape assists in quality control, design measurements, shock, vibration and noise analysis, life tests, destruction tests.

In office procedures, computers and magnetic tape have revolutionized entire business concepts. Computers, while they cannot think, *do* read, write, and subtract, multiply, divide and—most important—remember. The memory portion of the "brain" is provided by magnetic tape.

Computers run off payrolls, make inventory and distribution studies, total life expectancy of hundreds of thousands of insurance policyholders. In engineering and research, computers calculate what might happen to an airplane wing under hundreds of different situations, predict the future with uncanny accuracy on the basis of the known past.

The digital computer, most commonly used in industry, actually counts impulses on magnetic tape. Basically an automatic arithmetic machine, the digital computer operates at a speed 20 to 30 thousand times as fast as a standard desk calculator, using the binary number system—zero and one.

Storage—or remembering of information—is essential in a computer. Information is fed into the machine, stored on magnetic tape, where it is available for making necessary calculations. As many as 20,000 records of 80 digits each may be stored on a single 12-inch diameter reel.

In the factory, tape recorded “programs” run metalworking machines, the equipment following instruction on magnetic tape. Even blueprint instructions can be recorded directly on magnetic tape. Once the series of steps are on magnetic tape, mills and lathes will repeat faithfully the entire operation with no variation, making parts exactly like those on the blueprint.

Production is speeded since no templates need be set up. Machine time becomes almost completely productive with no “down time.” Wasted operator motions are by-passed, the machine working continually, if desired. Sequence of operations, recorded on magnetic tape, is followed in an identical manner in the machining of each successive part. Bulky, hard-to-handle templates are unnecessary, making it as easy to convert to the manufacture of different parts as it is to change reels of magnetic tape with new program material. Without templates, machines can be smaller, require less floor space.

Production costs are lowered, since operator error in miscalculating, carelessness or lack of skill are eliminated and waste material reduced. Minimum setup time and costs

permit making small quantities as needed, minimizing any risk in excessive inventory accumulation.

In geophysical exploration, magnetic tape makes the location of oil reserves more certain, less costly. Shock waves of test blasts, when recorded on magnetic tape for later replay, enable geologists to accurately determine locations of oil domes.

The magnetic medium extends into an infinite variety of forms, shapes and sizes. Magnetic transfer paper and typewriter ribbon, impregnated with magnetic oxide solution, is being used for automatic bank check sorting, inventory control and specialized accounting procedures. Magnetic 8" x 10" sheets are used for static recording in flux-sensitive systems, enabling reading by a stationary head system. Oxide dispersion solutions are offered for coating computer memory drums. Magnetic pellets, now in the experimental stage, permit moulding to specified shapes and sizes. Magnetic belts and discs are being used in seismic recording for geophysical exploration. Double-perforated 35 mm magnetic film is being used for sprocket-driven machine tool control equipment.

Almost wherever you look tape is finding a new use in business and industry. The fact that it can record any kind of information that can be reduced to electrical impulses has made it an invaluable tool. In this article we have only been able to hit the high spots of tape usage, to present all the uses would require a large volume.



Thanks to tape recorders crack ex-secretaries, unable to leave home because of small children, now solve secretarial problems for many a firm. A tape recorder, placed in a business office, will enable the business man to dictate at any hour most convenient for him. A messenger picks up reels of tape, delivers the completed letters. All correspondence is delivered typed letter-perfect on the businessman's own stationery. The business man, whose volume of work doesn't justify a full-time secretary, pays only for those letters he dictates.

INDUSTRIAL USES FOR STEREO SOUND

by

Robert Oakes Jordan and James Cunningham

... this pioneering pair has now turned their research in stereo sound to business uses in a new firm called Sonic Arts in Chicago.

IN any means of communication its effectiveness involves not only the technical excellence of that means but the limitations of the human communicators. Taking for granted the sender and the means of communication, consider for the moment only the human hearing system as the receiver. For the most part we receive hundreds of bits of communicated information each day through direct voice to ear processes. Our ears are constantly assaulted with the instantaneous communication means provided by the telephone, radio, or television audio systems. Except for the natural direct communication under good conditions, the ear has been skillfully "trained" by nature in rejecting sounds and noises it does not want to register. The remarkable psycho-acoustic mechanism belonging to each human allows each of us to shut off those sounds that have no "appeal."

If the human hearing system can by conditioning refuse part of the message then communication is not complete. In many cases this is not serious since the exclusion includes sounds and noises not important at the time.

But let's take the example of a communicator who is trying to get across important information to a group of listeners. If his situation involves direct vocal contact then it is up to his talent as a speaker and the organization of his material to get the message across. For the first few

times he gives his message the reception of the material by the audience is high but as his performance deteriorates through repetition the audience reception goes way down.

In an effort to reduce this natural occurrence recordings were pressed into service as a means of keeping the original message intact. Unfortunately, standard monaural recordings, no matter how high their fidelity cannot provide the human hearing system with the psycho-acoustic cues and stimuli necessary for natural hearing. Though the original message did not deteriorate audience rejection occurred just the same; while not for the former reason but for the reason of unsatisfactory audible stimulus. Add to this the poor audio quality of most presentation equipment, disc and film included, the effectiveness overall is very low.

As the major producers of both stereophonic demonstration tapes and discs, we have found the real value of stereo in industrial communications. Seven years of research in the field of stereophonic recording and reproduction, including the objective testing of many thousands of individuals has given us a clearer picture of the workings of the human hearing system and how best to get a message across.

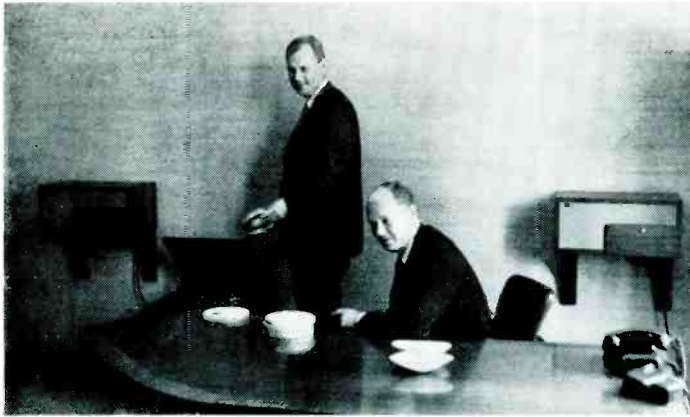
Let's take a look at what the ear requires for "normal" hearing. If we accept the fact that so called normal hearing involves spatiality or dimension it is easy to realize that standard monaural sound cannot provide the necessary audible cues for placement of sounds. In this case all the sounds both direct and reverberant (indirect) are recorded simultaneously and played back as such from a unitary speaker system. The ear must hear these sounds in its own environment without a chance to function normally.

To gain the correct effect desired serious study of these cues and stimuli is in order. The fact that a steam train crosses the room or a jet speeds from ear to ear does not accomplish what we feel is the effect of stereo and we're responsible for most of the trains and jets you've heard. Stereophonic recording and reproduction is a very subtle art if you plan to put it to work. The prime effect of stereo is that after you have listened to a few minutes of it you forget it is recorded sound at all. To keep your hearing system active with stereo does not require the sensational sounds but rather an awareness on the part of the producers of the basic effectiveness of this means of communication.

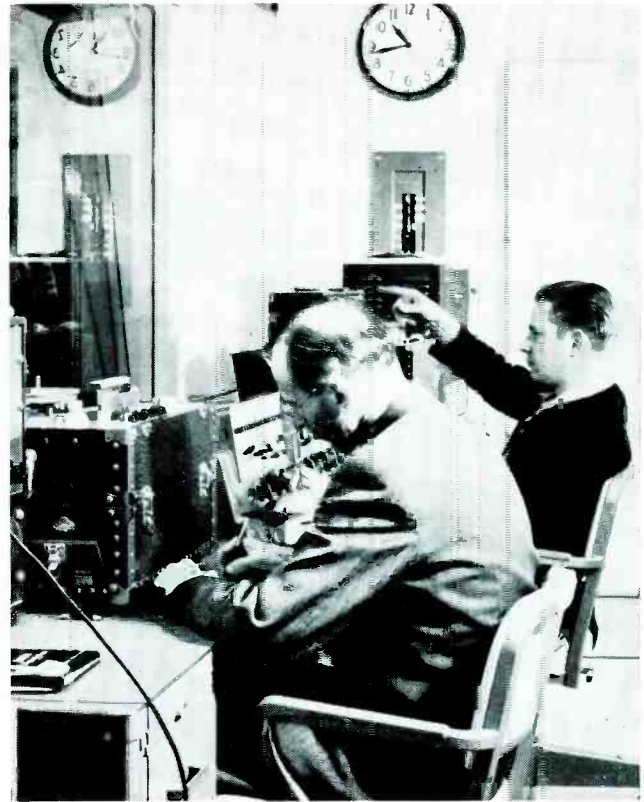
In industry the use of slide, strip and motion picture films usually accompanied by some form of sound reproduction fills a necessary function as best it can. The application of stereophonic sound in place of standard monaural audio makes these communication means realistic and ef-



Stereophonic sound on tape combined with slides makes a powerful sales presentation. Because the sound is stereo its impact and remembrance value is higher.



Above: because stereo sound is so superior it commands more attention from executives. Portable units which are attractive can be carried into offices and set up for the demonstrations. Right: Donald W. Hathaway, Director at Hadley School for the Blind and James Cunningham shown in control room of the school's new recording studio. The men are conducting stereo listing tests to be used later in designing courses for the blind.

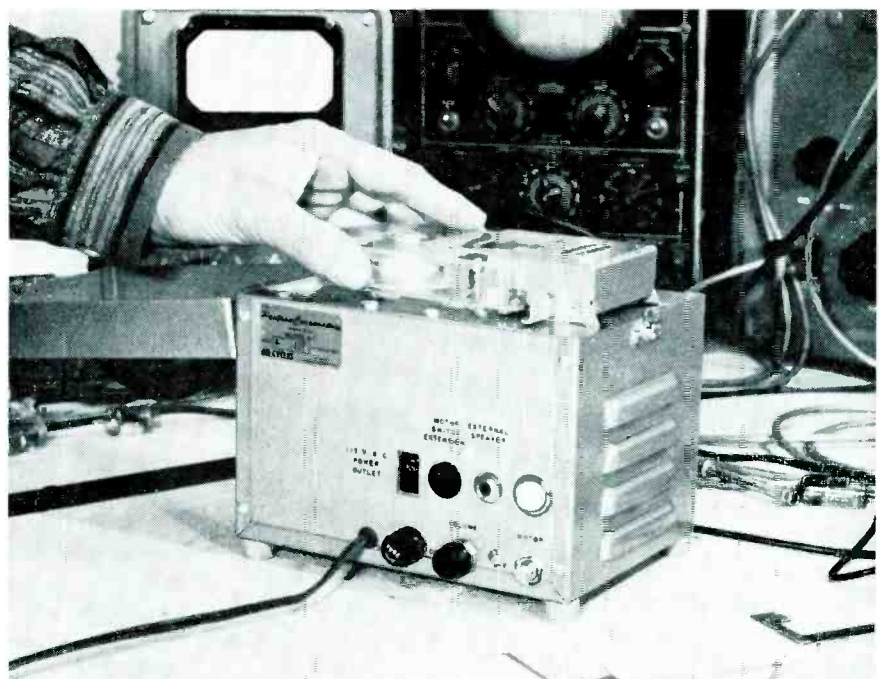


fective. The trend to industrial stereophonic sound is new but undeniable. This trend towards better sound with stereo includes many branches of industry. Sales presentations where slide, strip or motion picture films are employed were among the first to see the effectiveness of stereo. The business man finds that the sounds of his particular enterprise may put life into an otherwise dull talk to his sales groups. Industrial or academic teaching efforts will show a marked increase in success with the addition of stereophonic sound in their training medium.

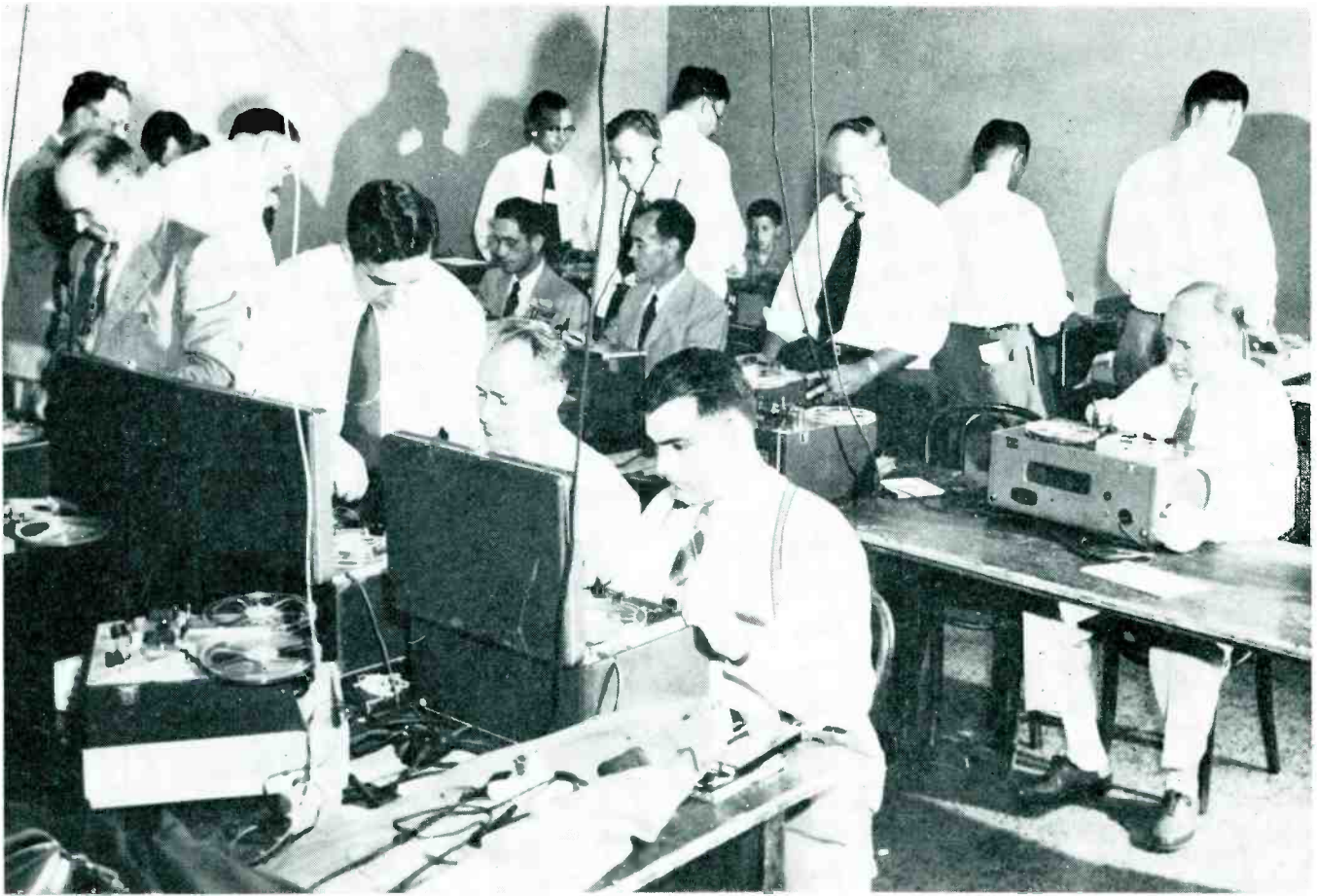
Special equipment has been designed for the audio sections of displays where stereophonic sound is to be used. Museums, conventions, trade shows will show an increase in the use of this special equipment and stereophonic sound.

The quality of the ultimate stereophonic effect will depend upon the equipment used so careful tests must be conducted in the choice of this equipment. Wherever equipment receives more than normal usage, breakdowns must be considered. High quality equipment is the best safeguard.

There are many applications of stereophonic sound in industry and equally as many tangent applications to each. Each of these uses would be a story in itself with stereophonic sound as the basis.



This type of unit will repeat a message endlessly until shut off. It uses a continuous loop magazine with either monaural or stereo sound on the tape. Actuated by a floor switch or photo electric cell it can be made to speak whenever the circuit is activated.



Photos by J. Henry Long

A group of Pastors of the Church of the Brethren making their own tapes of conference proceedings to take back to their respective churches. Audio hookups were furnished from master microphones.

Our Church Discovers Tape

by Glen Crago, Pastor
Heatherdown Church of the Brethren
 Technical Advisor: L. Dwight Farringer

REARING its ugly head after a person attends a vital conference, is the BIG problem of how to carry back home the enthusiasm and zeal that is present. For some reason, most conference reports, either religious or secular, resemble warmed-over oatmeal more than the contagious events they should be. For the thrill of the meeting somehow is hard to convey to others when you have returned home and are back on the job.

This is the story of how the Church of the Brethren has taken steps to solve this problem of "carrying home the conference" to its members in the local church. The experience of this group could be duplicated with a little time and money, by any group which is interested in better results after the conference is over.

Imagine if you can an annual conference which runs for five days with an average attendance per session of 3,000 or more. You are a delegate representing your local church. The meetings begin at 7:45 A.M. and last until almost 10:00 P.M., with only a little time out for meals. The speakers are the best in the denomination. In addition, there are the business sessions where you participate in making the decisions that will plot the course of the church for the next year.

Even if you are an accomplished "note-taker," the task is a big one, if you are to make an accurate and factual report. And facts are notoriously dry!

About ten years ago, when many persons were discovering how useful a tape recorder can be, there began what can only be described as a phenomenon at our Annual Conference of the Church of the Brethren. I remember sitting in the front row of the balcony at the Colorado Springs, Colo., Civic Auditorium in 1948 where our conference was held that year. Down the row from me a short distance was a man, with his recorder balanced somewhat precariously on the ledge of the balcony in front of him, endeavoring to record on tape from the public address system via a microphone! A crude attempt perhaps, but this man saw the potential gold-mine in a tape recorder; a gold-mine, not in terms of money but in terms of accurate and enthusiastic reporting on his return home.

Contrast that scene with this one from Ocean Grove, N. J. in June, 1954: Picture a room with two long parallel tables. On these tables, resting side-by-side, cheek to jowl, are 55 tape recorders which are receiving their signal through a specially constructed line from a master recorder on the conference floor. Represented in this room is more than \$112,000 worth of recorders and tape. Quite a jump

from 1948! Since 1954 the number has leveled off to about 50 recorders a year.

Two independent needs, stemming from different groups worked together to produce the present set-up. One of these needs was satisfying the growing number of individual amateurs who desired to make recordings at the sessions of conference. Obviously, some plan needed to be devised where all could be accommodated, since it would be physically impossible for a dozen (or more) recorders to be placed at the front of the auditorium. There was pressure from this group for some solution.

The second need to be satisfied, in the formation of the present arrangement, was a request from the Greenville, Ohio, Church of the Brethren for a verbatim report of the conference, especially the business sessions. The main point in favor of such a report was its value to future historians. Anyone acquainted with modern stenographic procedures knows that such a report is possible, but very expensive.

These two needs required a solution. So on the recommendation of J. Henry Long, then the director of the Audio-Visual Education Service of the Church of the Brethren, a Magnecorder installation was purchased. (See photo.) The equipment includes: two PT6-AH recording units, one panel and playback unit known as PT6-5 and PT6-PS.

With this equipment it was possible, as the old saying goes, "to kill two birds with one stone"! A representative of the AV department operates the Magnecorder set-up, making a complete set of recordings of all business sessions, and all of the major addresses. The recordings of the business sessions are permanently on file at the Audio-Visual Department of our church at 22 South State Street, Elgin, Illinois. This satisfies the request of the Greenville Church regarding verbatim reports. The rest of the program recordings are kept for only one year. During that time they are used for duplication of suitable material which is sent to our foreign mission fields for the use of the missionaries.

The other problem has been likewise happily solved. Perhaps a word about the magnitude of the problem would be in order—50 recorders fed from one mike!

No one has been naive enough to believe that this is the ONLY solution to the problem, but we have found it very acceptable in actual use. This is due, not only to the quality of the signal, but also because of the versatility.

The set-up was designed by L. Dwight Farringer, a brilliant physicist then a graduate student at Ohio State University, and also a minister in the Church of the Brethren.

The exact details of resistance values, etc., are not important as long as a person understands properly the orders of magnitude which are involved.

The Magnecorder has a jack for headphone monitoring of the amplifier output. This jack is connected at all times directly to the output of the amplifier, ahead of the recording equalizer, so that there is essentially linear amplifier response from microphone input to the monitoring jack, which is what you want for feeding other amplifiers or recorders. Actually the frequency response of the amplifier is very slightly affected by the load presented by the recording equalizer and recording head, but this in effect is insignificantly small for our purposes. So all we need to do is take the output from the monitor jack and distribute it to other recorders as needed, using proper precautions to avoid spoiling the program on the Magnecorder.

The PT6-PS amplifier has a 600-ohm output transformer,



J. Henry Long at the main controls during a recording of a conference at Richmond, Va. The current was fed from the amplifiers to the switch boxes which contained jacks into which each Pastor could plug in his own recorder.

and the recording equalizer is designed to be the only load connected to the output of the amplifier during recording. Other amplifiers can be connected across the amplifier output as long as they are bridging and not loading the amplifier, i.e. anything connected to the monitor jack should have at least several times 600 ohms impedance. This is not a difficult requirement, as the amateur recorders have only high-impedance inputs (usually 0.5 or 1 megohm), so we can connect many of them in parallel without making much of a load. However, we still want to protect the Magnecord amplifier from accidental short circuits in the wiring to other recorders, not because it would hurt the Magnecorder but because it would hurt the program being recorded.

Actually there is some resistance in series with the monitor output of the PT6-PS amplifier. This is of the order of a couple thousand ohms, and is intended to prevent serious damage to the program in case of accidental shorting of the monitor output. However, we want to improve upon the situation still further by putting some more resistance in series with the line to other recorders, to provide better isolation of the Magnecord circuit from possible disturbance.

A junction box is made according to the diagram.

The arrangement is obvious: You plug the "thing" into the monitor jack of the PT6-PS, and then plug the tape recorders into the six jacks shown in a row in the diagram. If you want more than six recorders, you make another box just like the one first made, plug it into the 2A jack, and you're all set. You can string together several of the junction boxes in this fashion. Probably a half dozen or so would be as many as you would want.

There is nothing sacred about having six recorders con-



Tape recorders, and some old wire recorders, were much in evidence at the Grand Rapids, Mich. conference in 1950. Tape recording of conferences is not new in the Church of the Brethren. At the last conference more than \$15,000 worth of equipment was brought by the Pastors.

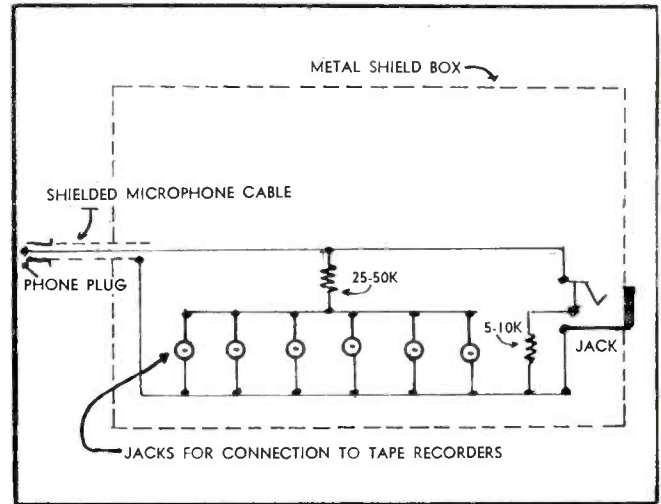
nected to each junction box. The idea is to be able to arrange a convenient number of recorders around each junction box so they can be connected with short cords.

The idea is to make these junction boxes and their "main" connecting cords in pretty good shape, so that they will develop no short circuits or other bad connections. The short cords to the individual recorders can be made of somewhat less durable wire in the interests of light weight and economy. In case any trouble should develop in one of these cords, it will not spoil the Magnecord program, because of the isolating resistors (25 to 50 thousand ohms). In fact, a short circuit in any one of the cords will not affect the program on any of the amateur recorders except the ones which are connected to the same junction box.

The 5 to 10 thousand ohm resistor shown in the diagram serves to swamp out even the light loading imposed by the amateur recorders, yet without unduly loading the monitor output of the PT6-PS. This helps to maintain constant program level as more recorders are plugged in, or even if one of the cords is shorted. The 2A jacks are wired as shown, so that when another junction box is plugged in, you always have just one 5-10 K resistor connected out on the end of the line.

The shield boxes can be any convenient metal box, such as an ICA Fleximount or a Mini-box of suitable size. The microphone cable for connecting the junction boxes can be any durable single conductor shielded cable, such as Belden 8410 or equivalent. For the cords to the individual recorder, Belden 8431 was used. This was light and cheap, but something better could be used here if desired. They will need to be made up with various kinds of connectors to suit the recorders which will be used. Use the recorders as if recording from a radio, rather than from a microphone.

It would be possible to make a more elegant sort of arrangement by using an isolating amplifier to feed the other recorders from the Magnecorder, but this simple arrangement has worked well with the PT6-PS amplifier. There has been no difficulty with hum or other sorts of noise due to these connections. The output circuit of the PT6-PS is ungrounded, which largely prevents any hum currents circulating in the connecting cables. Also, there is a fairly high level of about 8VU at the output of the



The schematic drawing shown above is the hookup for the junction box permitting six recorders to feed off one line. Shielded microphone cable is used and all jacks are mounted on a metal box for shielding purposes. Boxes may be strung together to increase number of outlets. The jack is a Mallory 2-A or equivalent.

Magnecord amplifier, which makes it fairly insensitive to noise disturbance on the output connections.

To encourage the sharing of methods of using tape recordings in church work, the author has undertaken a newsletter that is sent to interested persons.

Some of the ways reported have been very helpful to the other recording fans. One minister reported that his congregation, which was widely scattered, met by small geographical areas, in homes, where they listened to some parts of annual conference addresses. After this, they had refreshments together. The recordings provided the highlight for a social get-together.

A number of churches made their own slide programs, and put the narration on tape. Youth groups and children like this especially well.

There is no better way of bringing home the enthusiasm of a religious conference than by recording the singing. There is a real thrill in hearing a congregation of 6,000 or more singing the old, familiar hymns of the church. Such a demand for this type of singing has been created that the Audio-Visual Education Department of the church has had pressings made of some of the best hymns that have found a ready market among those who own phonographs. In such a case, the Magnecorder tape is used as the master for the phono record. The quality is excellent.

Small groups in the Toledo church have used portions of my own recordings of conference many times. The mid-week service has listened to several devotional addresses. The Junior-Hi group in Sunday School was studying hymns and hymnody a while ago, and they use the section that I have from conference where Rosa Page Welch sings three spirituals, and then teaches them to the congregation of 6,500. This is really tops in my own collection, I believe.

People who are confined to their homes enjoy hearing not only conference recordings, but also the regular morning worship service which they may have missed.

These are but a few of the ways in which a tape recorder can be used in church activities. Every organization I can think of would have ways in which these ideas could be adapted. If you haven't guessed by now, let me tell you right out: I'm sold on tape!

STEREO SECTION

NEW TAPES

By Georgie Sigsbee

CLASSICAL ORCHESTRAL

RICHARD STRAUSS
Suite from DER ROSENKAVALIER
(arr. Antal Dorati)
Minneapolis Symphony Orchestra
Antal Dorati, Conductor
MERCURY MASS-23
\$9.95... 23 mins.

Antal Dorati has laid aside Strauss' familiar arrangement of the "Rosenkavalier Suite" and has refashioned this delightful music by rearranging the sections in a manner that more logically parallels the action and story of the opera. The basic orchestration is unchanged save for the addition of a few solo instruments here and there to compensate for the loss of voices. To me, this reading is every bit as beguiling as the original despite the loss of emphasis on the waltz elements. One can now trace the unfolding of the story from the tempestuous and passionate Prelude to Act One to the brilliant Grand Waltz coda which concludes the suite.

The Mercury engineers have captured every shading of this splendid performance mirrored in the reverberant acoustics of the University of Minnesota's Northrop Memorial Auditorium. From every standpoint this is as fine a tape as anyone could wish to own.—J. L.

TCHAIKOVSKY
Capriccio Italiano
The Graz Philharmonic Orchestra
Gustav Cerny, Conductor
LIVINGSTONETTE 2016 C
\$6.95... 14.58 mins.

An all-around fine reading recorded in good stereo balance. It impresses me that moderation is the keynote of this recording... the quality of the sound is not overly-rich and yet by no means meager... and Mr. Cerny shows admirable restraint in avoiding the spectacular effects with which this selection is so frequently embellished.—J. L.

LIGHT ORCHESTRAL

FIESTA!
La Virgen De La Macarena
Aragonesa
Chanson Boheme
La Paloma

Jota Aragonesa
Las Chiapanecas
Maids of Cadiz
Jamaican Rumba
La Golondrina
Granada
Hollywood Bowl Symphony Orchestra

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Gi Gi Selections, Caesar Giovannini and the Radiant Velvet Strings.

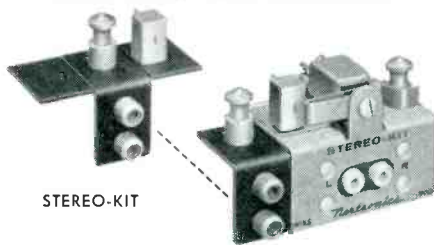
An equally marvelous interpretation of the songs that capture the moods of a Parisian's Paris. \$9.95

*Hi-Fi Low Down, Summer, '58

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RECORDING AMPLIFIER

The RA-100 Recording Amplifier supplies a magnetic head with audio power and bias voltage, and also has power for an erase head. It has NARTB equalization, VU meter, and a monitoring jack. Two RA-100's are recommended since they may be synchronized for optimum results. Audiophile Net \$49.50.

STEREO-KIT

The Stereo-Kit contains a TLD stereo head which works perfectly with the RA-100 amplifier. Completely wired and assembled, the Stereo-Kit mounts on side of recorder with simple detachable bracket. The SK-100 is standard 1/2-track, 2-channel model and the SK-50 is newer 1/4-track, 4-channel model. Audiophile Net SK-100 \$23.50; SK-50 \$26.00.

ERASE ATTACHMENT

Available in either 1/2-track, 2-channel (EK-100) or 1/4-track, 4-channel (EK-50), the Erase Attachment fits on the Stereo-Kit to provide automatic erasure when recording. Audiophile Net EK-100 or EK-50 is \$14.00.

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When that "second" sound channel is needed for playback, the PL-100 Playback Amplifier is just the thing. With variable equalization that includes NARTB and RIAA standards, the PL-100 is a high quality 3-watt amplifier with 2 mv. sensitivity to match any high impedance magnetic head. May also be used as a preamp. Audiophile Net \$39.50.

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CAL-WESTERN STEREO
1544 Cross Way San Jose 25, Calif.

HURRY UP AND WAIT . . .

That's our motto. For the past two months we have been asking you to watch this space for an announcement. Tired of waiting? Okay, so you're tired. Tired—Schmired . . . patience kiddos, we'll be along.

REPULSIVE RECORDINGS CO.

Carmen Dragon, Conductor
CAPITOL ZF-51
\$14.95 . . . 43:50 mins.

This recording has proven to be an extremely popular one among friends and family. It not only provides a lengthy stimulating program of varied music characteristic of the Spanish people (some authentic, some inspired) but the clean-cut, colorful instrumentation is an audio joy. In this album are represented composers of various nationalities including French, Russian, Spanish and even Australian. This is "fiesta" type music . . . gay, melodic, eloquent. From the world of opera comes the "Aragonesa" from Massenet's "Le Cid" and the "Chanson Boheme" from Bizet's "Carmen." You will hear the romantic "La Golondrina" beautifully performed by the orchestra. The Australian composer Benjamin's "Jamaican Rumba" adds a brief and festive note. While far from authentic Spanish fiesta music it follows the main theme of this recording and, if one wishes to stretch a point a bit, it was inspired by an island once held by Spain!

Keen orchestration with airy, reverberant reproduction.

OPERETTA

THE DESERT SONG (Selections from)
Kathy Barr
Giorgio Tozzi
Soloists and Chorus
Orchestra Conducted by Lehman Engel
RCA CPS-141
\$10.95 . . . 25:53 mins.

These selections from Romberg's operetta are certainly enhanced via RCA's hi-fi stereophonic sound. Full chorus, wide-spread; soloists brought forward to mike (not authentic stage reproduction 'tis true but the closeness gives sharper detail); orchestra well balanced in relation to singers, etc., all provide a good musical production.

Tozzi and Barr both have pleasant voices, the former being, in my opinion, the better singer. Miss Barr seems to strain on a few high notes although her voice is bright and clear in mid-register. Their duet during "The Desert Song" is nicely done and Tozzi comes through with a warm performance of "One Alone" (before Finale)

Peter Palmer, Eugene Morgan, Warren Galjour, and a chorus also lend their voices to this recording.

Basically this is a good tape but for me it is a bit disappointing—perhaps because the production at times does not seem fluid and I would have liked to have heard other selections in lieu of some which are on this recording.

RODGERS & HAMMERSTEIN

South Pacific (Original Soundtrack Recording)

Mitzi Gaynor, Giorgio Tozzi (singing voice of Emile de Becque), The Ken Darby Singers, and Orchestra conducted by Alfred Newman

RCA GPS-109
\$18.95 . . . 47 mins.

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enjoyment of this wonderful soundtrack recording . . . one must try to overcome the 15 year nostalgia for the Mary Martin-Ezio Pinza version. This is not to say that this new "South Pacific" is inferior, but simply that it is difficult to make a fair comparison. This new performance has plenty of artistic merit to stand on its own and, in fact, has certain charms that the original never enjoyed. Technically, this tape is outstanding. Stereophonic sound is at its finest here in depicting the action seen on the screen and the effect produced in "There is Nothin' Like a Dame" (sung by the Ken Darby Singers) is one of the highlights of the tape.

It is true, Tozzi does not sound like Pinza, but his voice is superb and his rendition of "Some Enchanted Evening," while less sensational than Pinza's, is fascinating for its intimacy and sensitivity. Miss Gaynor's performance is excellent and in my opinion need take second place to none. As a bonus this recording offers "The Girl Back Home" . . . a delightful number dropped from the original performance, but happily reinstated by Rodgers & Hammerstein in the film version.—J. L.

POPULAR

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HIS BEAUTIFUL DOLLS

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Paper Doll
The Wedding of the Painted Doll

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- Doll Face
- Doll Dance
- China Doll Parade
- Rag Doll China Doll
- The Syncopated Doll

Frankie Carle and His Orchestra

RCA-CPS-129

\$10.95... 25:17 mins.

Another good dance tape, this time featuring the deft piano work of Frankie Carle. The beat is steady, the mood easy and relaxed. There are some good bass fiddle breaks and electric guitar solo bits. These two instruments and the drums seem to make the "orchestra" in this release. "Syncopated Doll" is a sprightly closing selection.

Full bass reproduction; good stereo balance.

PAJAMA GAME—SILK STOCKINGS

The New World Theatre Orchestra

BEL CANTO STB 40

\$9.95... 24:50 mins.

More show tunes played with finesse and good theatre feel by this orchestra. A happy combination of nice music, well performed and at a neat price.

JULIE ANDREW SINGS

- It Might As Well Be Spring
- Falling In Love With Love
- We'll Gather Lilacs In The Spring

- He Loves and She Loves
- I'm Old-Fashioned
- You're A Builder-Upper
- My Ship
- Little Old Lady
- Irwin Kostal and His Orchestra

RCA BPS-123

\$8.95... 20:11 mins.

Here is another fine recording of this "Lass with the Delicate Air" (RCA BPS-85). In this album she has chosen songs of some of the most famous composers of Tin Pan Alley; such men as Arlen, Gershwin, Kern, Rodgers-Hammerstein and Weill. This young lady delivers her songs in a sparkling, lucid manner and yet what makes her so different is the added haunting quality of a demure, old-fashioned personality which one can readily picture singing lullabies while knitting socks!

The balance maintained between singer and orchestra is good... Kostal's group seems like a colorful cape draped about Miss Andrew's shoulders.

BOBBY SHERWOOD—PAL JOEY

- There's A Small Hotel
- Do It The Hard Way
- Bewitched, Bothered and Bewildered
- You Musn't Kick It Around
- I Could Write A Book
- My Funny Valentine
- The Lady Is A Tramp
- That Terrific Rainbow
- A Great Big Town

Bobby Sherwood and Orchestra
BEL CANTO STB 39

\$9.95... 24:09 mins.

Sherwood and his band swing out on some selections from the Broadway show, "Pal Joey," plus some added attractions such as "There's A Small Hotel." The offbeat arrangement applied to "Bewitched, Bothered and Bewildered" is bound to intrigue many a listener.

There is good brass and horn work highlighted by excellent pinpoint instrumentation via Bel Canto's high level, well controlled recording technique.

KING OF ORGAN WITH A BEAT!

- Tuxedo Junction
- Moonlight Love
- My Shawl
- Fascination
- Twilight Time
- You Can't Be True, Dear
- Perdido
- September Song
- Tenderly
- Around The World
- Sunrise Serenade
- Laura

Don Johnson and his Organ Combo DeLuxe

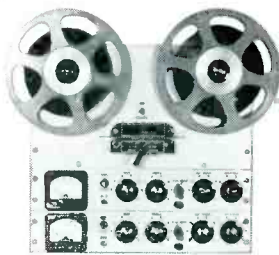
KANDY TAPE KS-715

\$9.95... 28 mins.

Don Johnson has been a star night club attraction for several years. However, I am inclined to think that the visual aspects of his act must add a great deal of in-



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± 2 DB 20-20000 CPS	7½	.09%	54 DB
± 3 DB 20-10000 CPS	3¾	.20%	44 DB

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RADIO CORPORATION OF AMERICA
Electron Tube Division Harrison, N. J.

terest which is not conveyed on this tape. The addition of guitar, bass, and drums as rhythm accompaniment to the "souped-up" organ, vibes, piano and accordion does lend "that beat" but what a pity to leave unexplored so many of the resources of the electronic organ in favor of a sound like a "hurdy-gurdy" or circus calliope!

Most distressing of all on this tape is the very marked "hiss" which is present to a varying degree throughout most of the tape and suggests an excessive amount of poor "doctoring."—J. L.

BODY AND SOUL

Body and Soul
He's Funny That Way
Roses of Picardy
There's A Small Hotel
Livingston Leap
Sam Donahue and His Orchestra
LIVINGSTONETTE 2012 C
\$6.95... 15:42 mins.

Solid dance music reminiscent of the swing time band era of Goodman, James, et al. This recording features Sam on the sax as you will readily gather when you hear the lead-off number. Dorothy Dunn does a vocal on the second selection. She delivers her song well but it seems to me the pickup on her voice could have been a bit sharper in detail... it seems a little heavy on the bass side technically. There is a brief orchestra break and when she comes back to the mike, just at the end, it sounds somewhat better. Except for this—and a short piano bit in "There's A Small Hotel"—the dials seem wide open and the reproduction fine.

A very decent dance tape.

I WISH YOU LOVE—KEELY SMITH

I Wish You Love
You Go to My Head
When Your Lover Has Gone
I Understand
Fools Rush In
Don't Take Your Love From Me
Imagination
If We Never Meet Again
As You Desire Me
Mr. Wonderful
When Day Is Done
Keely Smith, Vocalist
Nelson Riddle and Orchestra
CAPITOL ZC-42
\$11.95... 35:15 mins.

As female pop singers go... Keely Smith goes all right. Keely parts company long enough from her husband, Louis Prima, to record this, her first, album. These love songs, leaning toward the blue side, are delivered with a good feel for the lyrics. After several re-runs, this gal grew even more likeable.

Riddle does a fine piece of work in arranging and conducting. Particularly interesting are the arrangements of "Don't Take Your Love From Me" and the off-beat orchestration of "When Your Lover Has Gone."

The bass reproduction seems a bit heavy and the brass at times is not too clear but other than this the sound is fine.

STEREOPHONIC CONCERT

Happy Ballerina

I'll See You in My Dreams
Mambocerto
Concerto
Eternally
Rhumba Concerto
Lonely Winter
Dancing Trumpet
Ralph Marterie and His Orchestra
MERCURY MVS 2-27
\$7.95... 22:20 mins.

Marterie swings along in modern versions of some "classics"; i.e., "Eternally" ("Ich Liebe Dich") and "Dancing Trumpet" (Offenbach's "Barcarolle"). His popular band is given a recording which is all encompassing insofar as stereo reproduction.

COFFEE BREAK

Oh, But I Do
Ask Anyone Who Knows
Was That the Human Thing to Do
Every Day
Please Don't Talk About Me
Twenty-four Hours of Sunshine
A Little Kiss Each Morning
Reg Owen and his Orchestra
RCA BPS-122
20 mins... \$8.95

Very pleasing renditions by Reg Owen featuring a fine string section and nicely varied arrangements to provide suitable background for listening or dancing.—J. L.

STRAIGHT DOWN THE MIDDLE

The Surrey with the Fringe on Top
Paradise
Alright Already
Have You Met Miss Jones?
Whirlpool
When a Woman Loves a Man
Scotch and Sauter
Straight Down the Middle
The Sauter-Finegan Orchestra
RCA CPS-113
25 mins... \$10.95

It is difficult to classify the style of the Sauter-Finegan Orchestra. Their arrangements blend jazz and dance music with a variety of most extraordinary sounds. There is no other way to describe this collection of their ultra-modern arrangements than to say that this is typical Sauter-Finegan. The quality and balance of the recorded sound is excellent.—J. L.

FROM FRANCE WITH MUSIC

La Grande Coco
Pourquoi pas moi
Je te legue mon amour
On efface tout
La Rage de vivre
Une Place pour toi
Advienne que pourra
Varel and Bailly with the Chanteurs de Paris
RCA BPS-121
20:5 mins... \$8.95

Varel and Bailly, two of France's most popular songwriters, present seven original selections in, this, their first U.S. recording. Assisted by seven young men known as the "Chanteurs de Paris" Sid Ramin's Orchestra, their tunes have an unmistakable modern French appeal. The performance is an admirable blend of smoothness and

effervescence, and the diction so excellent that one can easily follow the French lyrics. The recording lends just enough "presence" to make you feel you are in a small Parisian supper club.—J. L.

SHOW TUNES

SAY, DARLING

Original Cast Recording
RCA FPS-150
\$16.95 . . . 40:10 mins.

Vivian Blaine, Johnny Desmond and David Wayne sing lead roles in both this recording and the Broadway show which deals with the backstage lives of Bissell-fictionalized musical show people. The team of Bissell-Burrows-Bissell head work this musical comedy. On this release are presented tunes from the show such as "Try To Love Me," the gay "Husking Bee" and "Dance Only With Me."

MARCHES

MARCHING ALONG

The U. S. Field Artillery
The Thunderer
Washington Post
King Cotton
El Capitan
The Stars and Stripes Forever
Frederick Fennell, Conductor
Eastman Symphonic Wind Ensemble
MERCURY MWS5-14
\$6.95 . . . 15 mins.

Fennell does an excellent job conducting these compositions of the "March King" John Philip Sousa. These marches are recorded in their original editions, using the full instrumentation of the Ensemble; 25 reeds, 16 brass, 6 percussion and 1 string bass. Fennell executed percussion editings in order to enhance solid punctuation in the phrasings.

Anyone who loves marches won't want to be without this recording. Hailing from Washington, D. C. I cut my teeth on Sousa marches, and two of my very favorites, "Washington Post" and "The Stars and Stripes Forever" are given vibrant, thrilling renditions by this group. In the opening march you will hear some of the men sing the familiar chorus of the caissons.

A fine recording, musically and technically.

MISCELLANEOUS

SABICAS PLAYS FLAMENCO

Rumores Flamencos (Solea Por Buleria)
Garrotin Flamenco (Garrotin)
Fiesta De Sabicas (Bulerias)
Ecos Flamencos (Seguidilla)
Rondena Gitana (Rondena)

LIVINGSTONETTE 2015 C

\$6.95 . . . 14:26 mins.

This very proficient flamenco guitarist brings his instrument right into your room, sits down, and plays with such remarkable facility that he makes it sound easy to be such a master. One has but to hear the "Rondena Gitana" to realize that, though played effortlessly, such dexterity and manual agility is backed by years of practice and experience.

A beautifully recorded tape.

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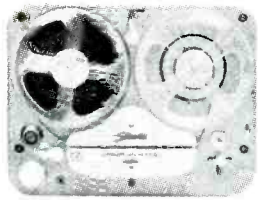
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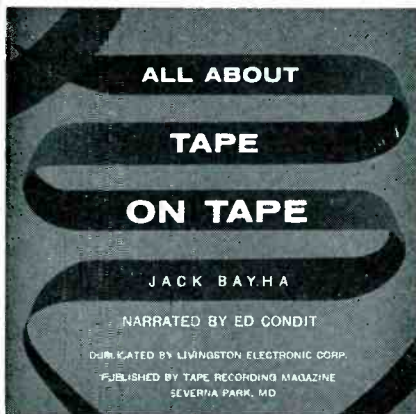
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SEVERNA PARK, MD.**

(Continued from page 8)

compared with the half track.

A few fast words about the proposed pre-recorded tapes on two double tracks. First, will the price of these tapes be substantially reduced? Hardly. The cost of producing these tapes are what keep the price up . . . the talent, the technical details, the time-taking and expensive acoustical set-ups. Yet the excuse given by one manufacturer who proposes cartridges at 3 3/4 ips is to reduce the cost of tape. Second, how in blazes can you edit one portion of the tape without disrupting the continuity of the other? Third, won't this halving of the tracking area cause real mechanical problems and increase the cost of maintenance?

Is this then, high fidelity? The high fidelity I've been completely sold on by these same manufacturers? The hi-fi that I've come to love? I don't think so. I think I'm being duped.

I called on my favorite manufacturer of tape recorders and asked him point blank: Are you going to produce four-channel tape recorders?

His answer:

"No. We cast our vote for having the tape recording industry affirm its position immediately in favor of retaining its long standing policy of offering the best in audio quality, and for having it disown any attempts to capture markets at the expense of quality reduction."

I say "Amen" to that with the plea that we keep going along with the best in high fidelity, and that's what we've got right now—two-channel stereo at 7 1/2 ips.—

Philip J. Dahlberg, Kenosha, Wisconsin.

No, Mr. Dahlberg, we do not think you are being duped. We recall the days when the first dual track recorders made their appearance. The fears were expressed then as are now expressed about the four track tapes.

Your machine, and tens of thousands like it, are not, nor will they be obsolete. Our Stereo Music Catalog shows 1200 currently available two track tapes, 150 of them new since the last edition. If your dealer does not have tapes you can get them directly from the manufacturers or from such firms as the Stereo Music Society, 303 Grand Avenue, Palisades Park, N. J. which has a complete stock of tapes, both stacked and staggered and can fill any order quickly.

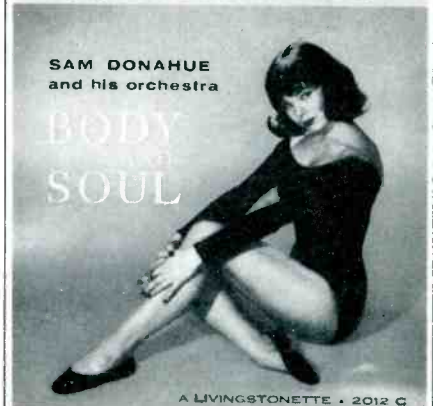
As you state in your letter there are few four channel machines available, and no tapes. We are going to reserve judgement until we test actual units. No industry, including the tape recording industry, can afford to put out a basically inferior product or it will write finis to its existence. We do not believe tape recorder manufacturers will take this chance.

If four track tapes catch on, the present machines can easily be converted to handle both two track and four track. Regarding costs, four track tapes will cost considerably less—by half or better. Insofar as editing is concerned, you can't edit a two track tape either. Anyone else care to comment?—Ed.

AUTHORITATIVE!

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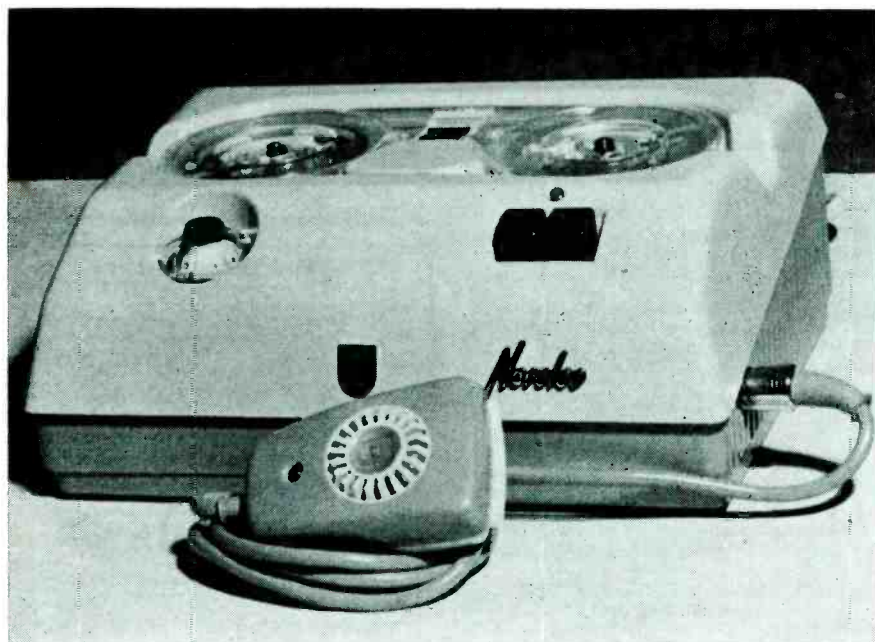
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. . . magazine loading, dual track, simplified controls.

THE Norelco Dictating machine is small, compact, easily operated and weighs only 8 pounds. The same unit may be used for both dictation and transcription.

Of especial interest is the fact that the unit employs a magazine to hold the tape. This is a plastic shell in which are the tape reels. A metal clip at the center holds the two halves together. If, at any time, the tape needs to be replaced, or removed for shipment, the retaining clip is slipped off and the reel removed. A new reel is installed in its place.

If the magazine is shipped, the tape may be placed completely within it by opening the magazine and tucking the tape inside.

In our tests of the machine no tape spillage or fouling was encountered even when we made shifts from one mode of operation to another in rapid succession.

The machine has few controls: fast forward, fast rewind, record and play. On dictation, the operation of the unit is controlled by a press bar on the microphone. The mike also doubles as a speaker for immediate playback.

For transcription, the unit is controlled either with a typewriter control or a foot control. An earphone is used and the volume may be adjusted by the person doing the transcribing. There is no volume control to worry about on recording as this is automatically done at the proper level.

The machine uses a dual track head so that 35 minutes of dictation can be put on one reel, 17½ minutes for each side. As with regular recorders, the cartridge is turned over to use the second track.

Also included on the machine is an accurate position indicator which enables the person to quickly locate any

Product: Norelco 35 Dictating Machine

Distributed by: Norelco, 230 Duffy Ave., Hicksville, L. I., N. Y.

Price: \$179.50 including mike, tape, cover and log pad. Transcribing accessories extra.

part of the dictated material. A log pad is provided to indicate the amount of dictation for correct spacing of letters. Corrections may be made by either re-recording over the portion where the mistake lies or by marking the error on the log pad and making the correction later.

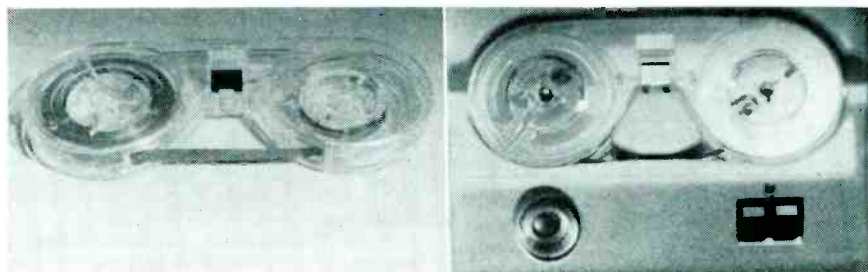
Provision is made to prevent accidental erasure of recorded material as the machine will automatically go into playback mode whenever the forward or rewind buttons are depressed. It can again be placed in record by sliding the record switch to record position.

The machine is finished in two shades of soft green that will go with any surroundings and there are numerous accessories available for use with it such as a carrying case, telephone adapter, conference loudspeaker, etc.

The unit is small enough to be carried conveniently and can be used in car, boat or plane with an inverter to supply the 110 volt current.

Dictation done on the machine was clear and sharp and, of course, the tape may be used over and over again.

The machine is well built, sturdy compact and quiet. It is worthy of your consideration.



Left: the tape is held in a magazine made of clear plastic. The tape may be removed and replaced. Right: the magazine is simply dropped in place in the well in the top of the machine.

SHOP OR SWAP

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

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

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

AMPEX A-122 tape recorder. Stereo playback \$350, or will sell complete Ampex portable stereo system for \$600. 6 months old. Perfect condition. J. E. C., Baltimore, Maryland, HAmilton 6-7872.

TAPE RECORDER Webcor Model 2612 Coronet like new, \$125. Hi-Fi in walnut cabinet has Garrard 121 changer, Grommes amplifier, R. A. speaker and record compartment, \$125. All new equipment. M. Greco, 47 Klein Ave., Trenton 9, N. J.

WANTED: Good used RCA 77D microphone. Can use two if available. Send full details regarding price and condition. Wally Heider, Sheridan, Oregon.

HAVE 12 ROLLS of recorded music—will sell or trade. Joe Armstrong, 180 Myoak Drive, Eugene, Oregon.

ORIGINAL, ON-THE-SPOT, live Dave Brubeck Quartet Monaural tape recording on 1200' dual-track 7" tape, 7 1/2 ips. First \$10.00 offer. Send C.O.D. S. Saltzman, 1614 E. Charleston Blvd., Las Vegas, Nevada.

TRADE: BOLEX H8 Deluxe, complete for Ampex, Berlant, etc. New condition, value \$600. Write for details. Carl Fiene, Steeleville, Illinois.

STANCIL-HOFFMAN R4 professional tape recorder for sale, portable cases, 15 and 7.5 i.p.s., handles 14" reels, rigid professional specifications, home use only, new condition. Cost \$1575, best offer around \$800. A. H. Ogawa, 2376 Oahu Ave., Honolulu 14, T. H.

SELL—HIGH QUALITY professional tape recorder, new, in original carton. Three heads, three motors—one hysteresis. Discount for quick sale. Walter Bartell, 5536 Wilson, Chicago 30, Illinois.

USED MUSIC TAPES WANTED. Popular, jazz or classical. Norman Reed, Graterford, Pennsylvania.

HI-FI TAPE BUY—Splice free. First quality. 40/15,000 cps. Permanently lubricated. Money back guarantee. 7" boxed reels. Acetate 1200', 1 1/2 mil, 4/\$5.20; 1800', 1 mil, 4/\$6.76. Mylar 1800', 1 mil, 4/\$9.60; 2400', 1/2 mil, 4/\$13.00. Postage 15c per reel. Hi-Sonic, Box 86X, New York 63, N. Y.

FOUR DIFFERENT STEREO-STACKED pre-recorded musical tapes. Each reel: 1200' x 7" diameter, @ 7 1/2 IPS (1/2 hour) on new, splice-free, brand name, tape. The four reels: \$9.75 postpaid. Same as above but stereo-staggered, the four reels: \$7.75 postpaid. Bradmen, BX-3152 Merchandise Mart, Chicago 54.

INCREASE YOUR EDUCATION while you sleep. Send stamped return envelope for complete information. National Psychological Institute, 1044 S. Park View, Los Angeles 6, California.

FOR SALE: New VM 714 stereo tape recorder \$175, F.O.B. Tom Muller, 1636 Gregory, Lincoln Park, Michigan.

WHY BUY when you can rent? For full details on tape rentals, write National Rent-A-Tape Service, Dept. H, Box 1, Winnetka, Ill.

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"TAPE-MATE" keeps accurate, neat record of every foot of tape recorded. 3 x 5 file card. 30 for \$1.00. Satisfaction guaranteed. Order today! Howard Roberts, 50-24 31 Ave., Woodside, N. Y.

MAKE MONEY with your tape recorder! Our famous course and tape lets you see and hear how it's done! Money-making facts free! Dixieland Sound Specialist, Asheboro, N. C.

LIKE NEW—V-M Model 750 staggered-stacked, stereo tape recorder. Will ship in original factory carton, \$215. Walter Zelaya, 140 Amanda St., Clyde, Ohio.

FOR SALE: Crown Imperial professional recorder with stereo playback and automatic stop. Used less than 20 hours. Perfect condition. Worth \$550. Sell for \$425. David Eyres, 215 Court, Vermillion, S. Dakota.

TYPED TRANSCRIPTS of your tape recordings reasonable, fast, accurate. Thomas Secretarial Service, 1507 M Street, N.W., Washington 5, D. C.

SACRIFICE—Bought February. Used less than 30 hrs. Wilcox-Gay Recordio, regularly \$279.95, for only \$160. Remote control, etc. Dick Carney, 103 N. West, Shelbyville, Ind.

SCOTT (210-C) DYNABURAL-AMPLIFIER; with case, 1st class condition. Last one; only \$95. B. K. Balch, 611 Livingston Rd., Linden, N. J.

SELL: Soundscribe dictating machine, \$50; portable typewriter, \$25; 3-speed portable phonograph, \$15; Electro-Voice VIA velocity microphone, \$15; GE RPX-050 cartridge, \$5; all in new condition. V. R. Hein, 418 Gregory Street, Rockford, Illinois.

FOR SALE: IBM electric typewriter, \$100; Garrard record changer, GE cartridge, \$25; Lafayette AM-FM tuner, \$25; and GE clock-radio, \$15. Donald P. Bagren, 417 North Winnebago, Rockford, Illinois.

FOR SALE: DeJur TK-820 recorder. Like new. \$299. Going stereo. C. Coakwell, Andover, Ohio.

TRANSCRIPTION DISCS WANTED. All types of music. 1930 through 1946. Sam Kiamie, 930 Grant Avenue, Pelham Manor, New York.

LOWEST PRICES FOR QUANTITY Users. Top quality. 30—15,000 cps. Guaranteed or money back. On 7" reels—boxed. 1200 ft. Acetate—\$1.39 ea.—50 for \$62.00; 1800 ft. Acetate—\$1.79 ea.—50 for \$84.00; 1800 ft. Mylar—\$2.40 ea.—50 for \$99.50; 2400 ft. Mylar—\$3.95 ea.—50 for \$165.00. Shipped via freight collect. Florman & Babb, Inc., 60 W. 45th Street, New York 36, N. Y.

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

HI-FI HAVEN—New Jersey's leading sound center. Write for information on unique mail order plan that offers professional advice and low prices. We are a registered component dealer with the Institute of Hi-Fidelity Manufacturers, 28 Easton Avenue, New Brunswick, New Jersey.

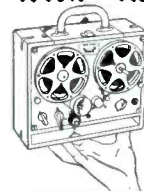
MAGNEMITE—Briefcase recorder, like new, 3 3/4" and 1 7/8", cost \$389 plus, bargain at \$225, Suite B-300, U. S. National Bank Building, Denver, Colorado.

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

SYNCHRONIZER HOOKUP: Make sound movies with your tape recorder, \$10.00. Anderson, 2842 South "B" Street, Stockton, California.

FOR SALE: Like brand new. Precision test instruments E200C, MCP98, 1054P, all with operating instructions—EV636 microphone, 2 crystal microphones, Todd check writer, 16 mm films and spools, all equipment excellent. Inquiries write or tape Johnnie, 8561 66th Road, Forest Hills 74, Long Island.

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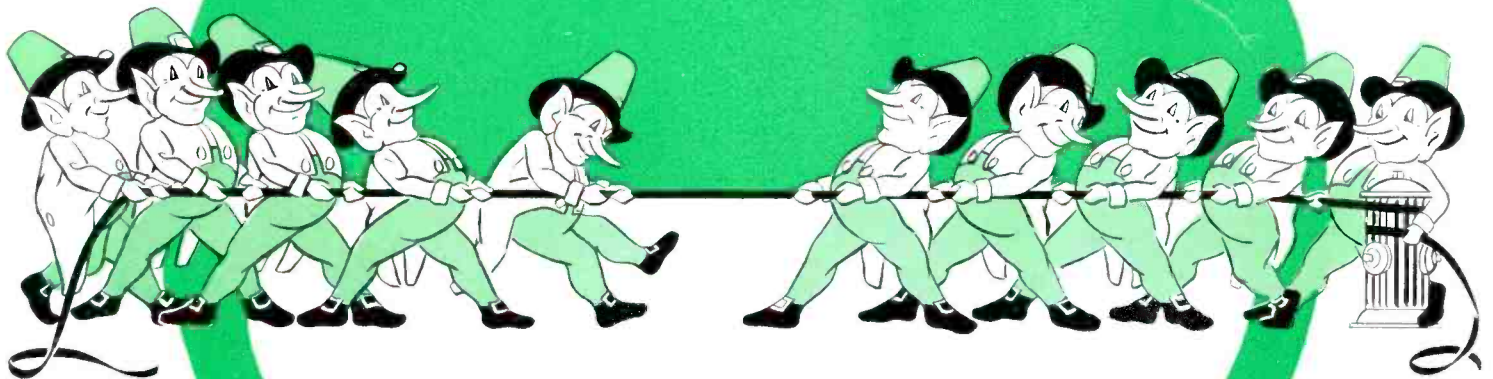
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NEW

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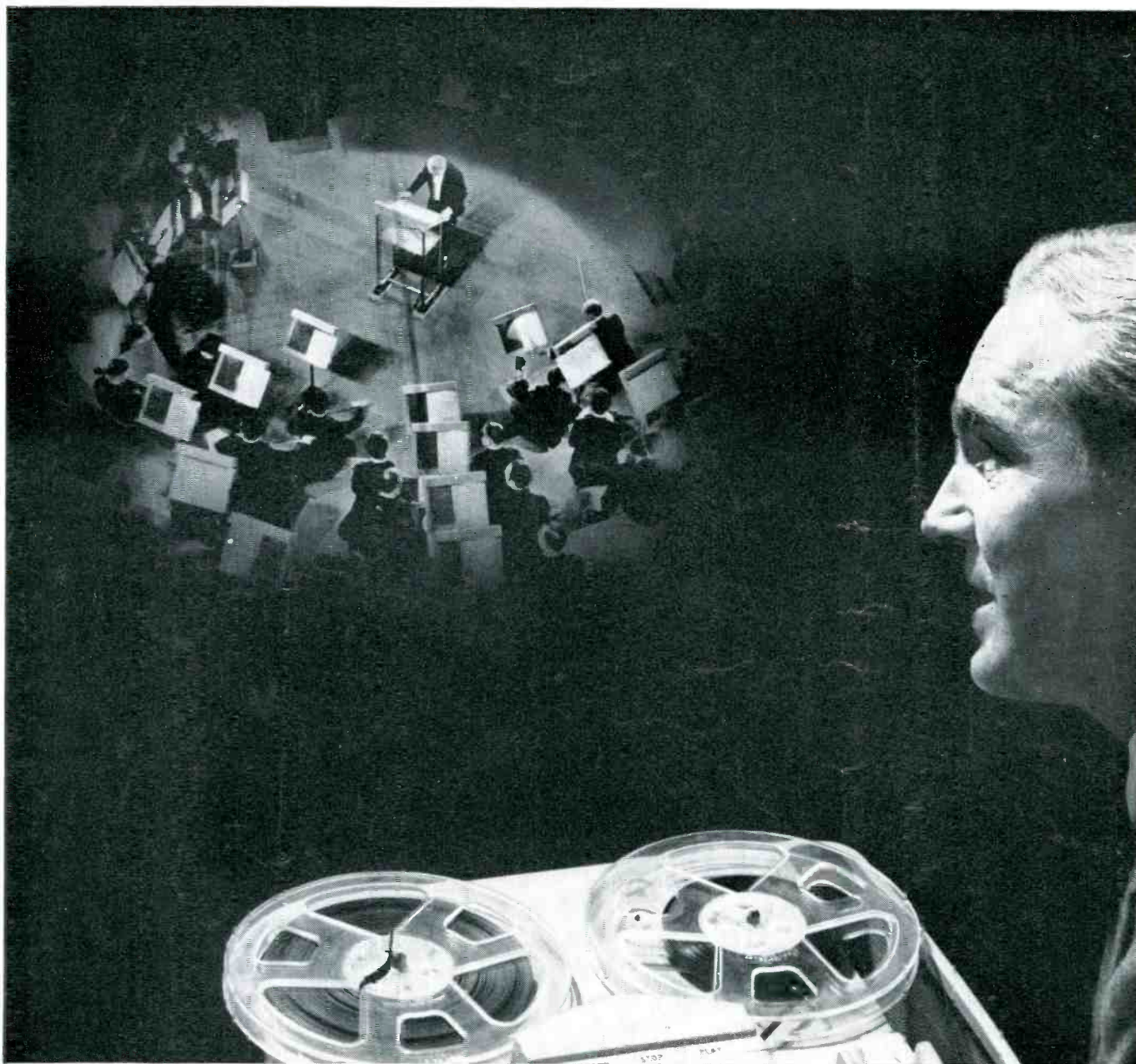
The new **FORTIFIED irish** DOUBLE-PLAY recording tape is a **SUPERTOUGH** version of the original **irish** DOUBLE-PLAY. The latter was the first tape on the market to double the standard length of tape on a given reel size and provide twice the normal amount of uninterrupted playing time. Made on specially strengthened MYLAR* polyester film base, the new **FORTIFIED** DOUBLE-PLAY tape has a tensile strength of 6 lbs. That means it's just as strong as any standard tape which plays only half as long! No more need for gentle handling... just slap it in like any old tape and play it twice as long—with all the extra benefits of the **irish ferro-sheen** process: mirror-smooth surface...no oxide shedding...next to no wear on the magnetic heads...better high-frequency response...freedom from tape noise...reduced drop-outs and print-through!

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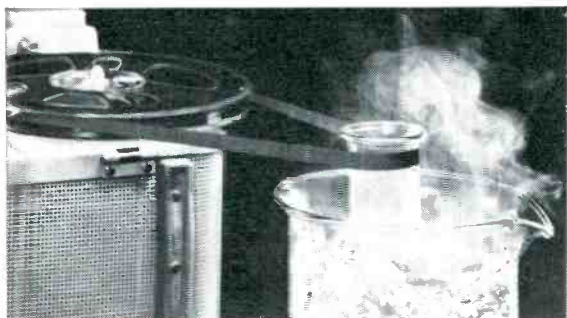
ORRadio Industries, Inc., Opelika, Alabama
Export: Morhan Exporting Corp., New York, N. Y.
Canada: Atlas Radio Corp., Ltd., Toronto, Ontario



FORTIFIED irish DOUBLE-PLAY is available in restricted quantities wherever quality recording tape is sold.



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Lasting resistance to heat, humidity. Boiling-water test gives dramatic proof that "Mylar" can withstand radical changes in heat and humidity. Tapes of "Mylar" need no special storage care . . . remain dimensionally stable.

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