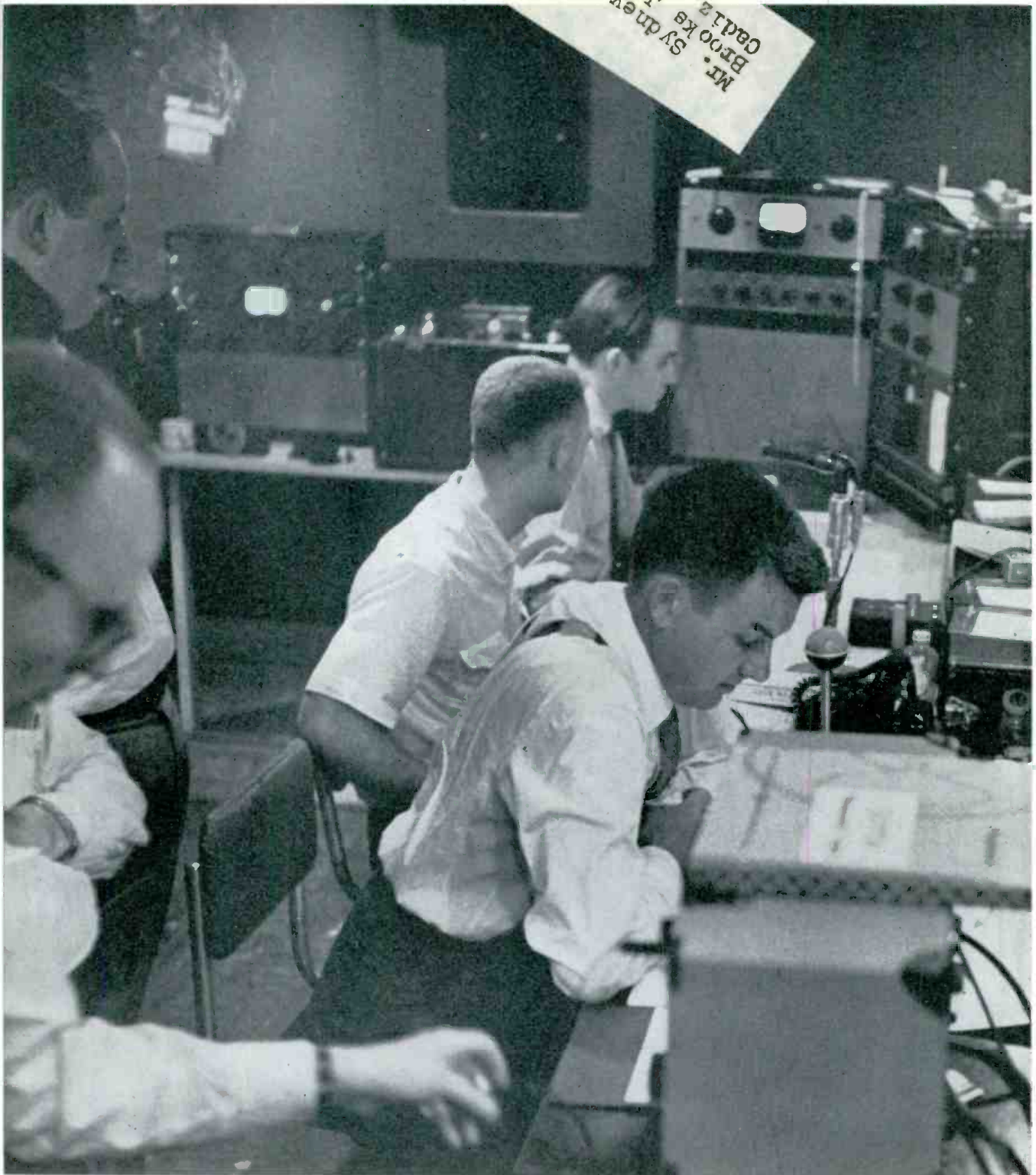


TAPE RECORDING

Mr. Sydney G. Brooks
Brooks Jewelry
Cedar, Ohio



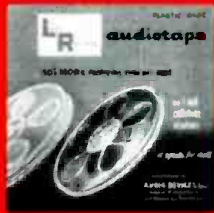
Pro's Record Amateurs

August 1958

35c

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PLASTIC-BASE AUDIOTAPE on 1½-mil cellulose acetate meets the most exacting requirements of the professional, educational and home recordist at minimum cost. Known the world over for matchless performance and consistent uniform quality. Series 51, in the red box.

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SUPER-THIN AUDIOTAPE ON TEMPERED "MYLAR" gives twice as much recording time per reel as conventional tape and is *twice as strong* as other double-length tapes. Will not stretch or break on any tape recorder — will not dry out or embrittle with age. Series 31T, in the black-red-and-yellow box.

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(Photo taken at Cue Recordings, N. Y. C.)

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Among the advanced features embodied in this striking model are: Dual IN LINE Stereophonic sound channels; balanced tone (loudness control); real portability with molded glass and steel case; 360° sound distribution with two self-contained speakers; single knob control; precision index counter; public address system; input switches automatically for mike or phono; instant stop button; self-adjusting disc brakes; tape speeds, 3.75 and 7.5 i.p.s. With microphone, 2 reels, tape and cords.

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GUARANTEED SPECIFICATIONS —

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T-1100 Dual-Speed Hi-Fidelity Tape Recorder—Single knob control. Tape speeds of 3.75 and 7.5 i.p.s.; records up to three hours with new long-play tape. Durable fibre-glass case; two acoustically matched excursion speakers. With microphone, radio-TV attach. cord, 2 reels (one with tape) and case ... **\$169.50**
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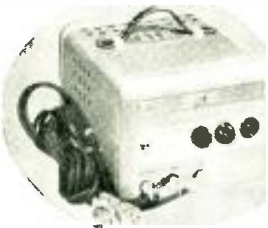
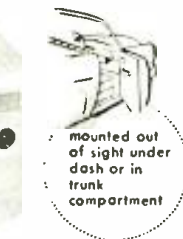


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HI-FI

TAPE RECORDING

VOL. 5 NO. 9

AUGUST 1958

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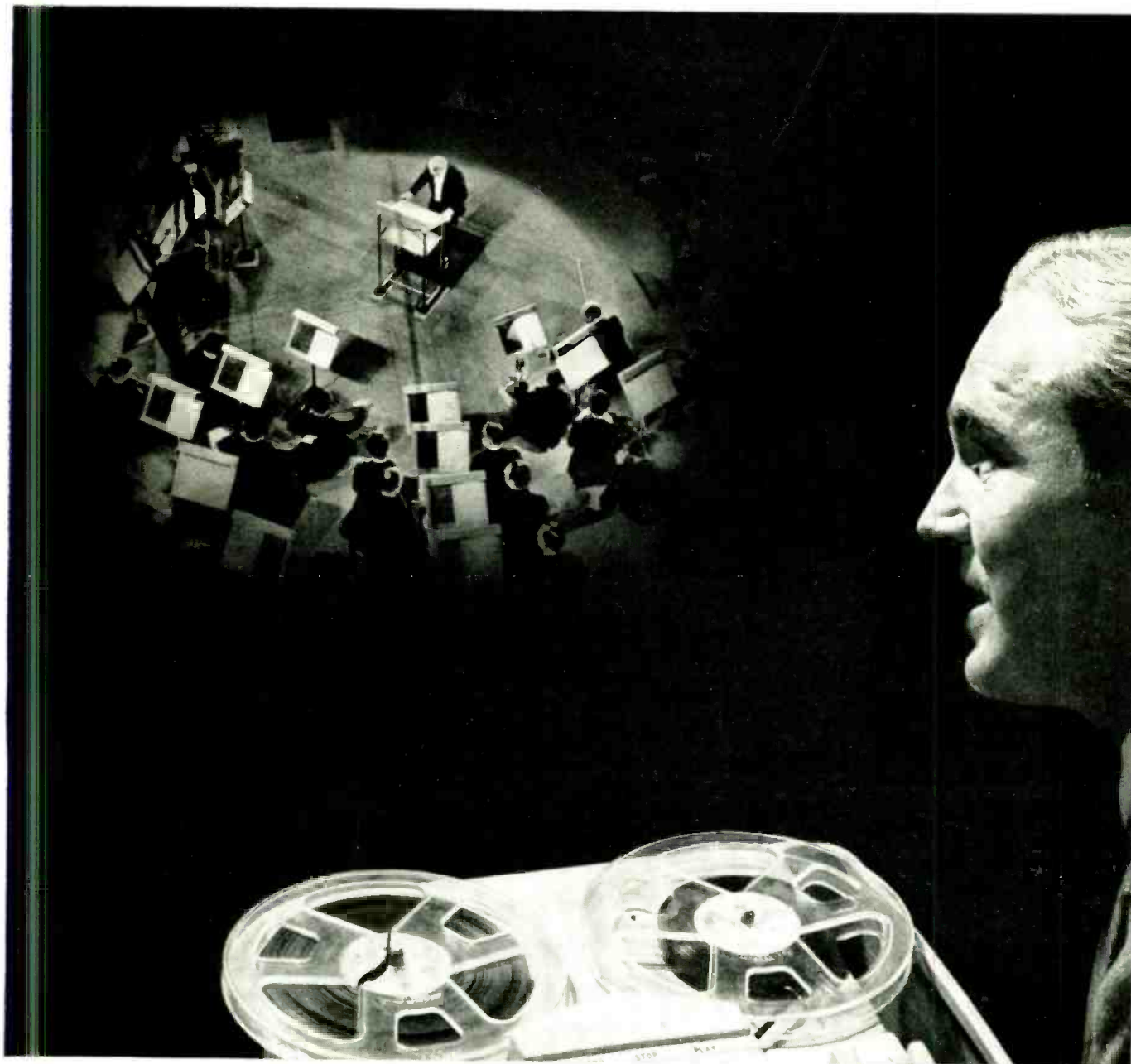
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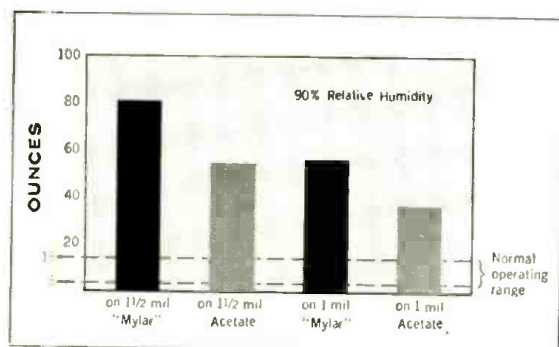


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LASTING STRENGTH. In normal operation, recorders exert a force of 6 to 16 ounces. Graph shows tape of "Mylar" offers a 300% margin of safety against stretching or breaking.

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*"Mylar" is a registered trademark for Du Pont's brand of polyester film. Du Pont manufactures "Mylar", not finished magnetic recording tape.



Better Things for Better Living . . . through Chemistry



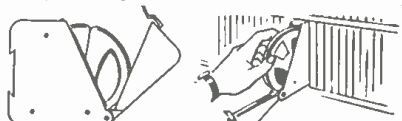
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TAPES TO THE EDITOR

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

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

To the Editor:

Thank you for mentioning The Tape-spondence School in your latest issue (2nd column, page 11). I should like to inform you that the name of the company has been changed to Audio-Visual Publications.

Furthermore, I should like to comment about the use of stereo equipment for language tapes. It is far easier to use two machines side by side (one playback playing the teacher's tape, a recorder on which the student records his imitation).

This combination is often less costly than a stereo machine since a simple playback (such as the EMC) can be bought for about \$100.

The biggest savings come with the purchase of the language tapes. With a stereo machine, the student has to buy tapes with pre-recorded pauses. The student will also find that the pauses are never right: they are sometimes too long, sometimes too short.

With two machines in tandem, the student buys tapes without pauses. They are 2 or 3 times less costly than tapes with pauses, and the student, by using the pause button on his playback, can make the pauses as long or as short as he wishes.

As an example, our basic French course (10 hours on 5 reels without pauses) sells for only \$35. The same course with pauses would last about 30 hours and would cost over \$100.

I would appreciate it if those facts could be brought to the attention of your readers.
 —Fernand L. Marty, Director, Language Laboratory, Middlebury College, Manager, Audio-Visual Pub., Middlebury, Vt.

To the Editor:

Enclosed is my check for renewal for one year to your magazine. I would ordinarily take advantage of the savings for a two year subscription, however the editorial or news policy of your publication seems inclined to favor more and more the promotion of stereo reproduction to the point where you and similar hi-fi publications are ignoring the existence of monaural sound. If and when it does reach that point, you are really going to be in trouble because the average listener is not interested in paying the fantastic prices for stereo tapes and extra equipment. To illustrate, how many single channel tapes appeared in your reviews recently?

I and thousands of others are, and will continue, to be interested in single channel sound and when the publishers choose to ignore us you can look for subscriptions elsewhere. The next year will tell the story.—E. Russell, Cuyahoga Falls, Ohio.

We have no intention of abandoning

the monaural recorder because recording is the basic function. The reason for the lack of monaural reviews is that practically no monaural tapes have been put out and sent to us for review. In most cases, monaural versions of stereo tapes may be had on special order so, other than the mention of the stereo effect in a review, the review of the music would still stand.

To the Editor:

As an interested subscriber to your magazine I am faced with the problem of referring to back issues, i.e., the problem of indexing and storing them.

It is my impression that if a magazine is any good it is worth referring to from time to time and if it is worth keeping some provision should be attempted by the recipient for this purpose.

Obviously, having them bound is costly so may I suggest the following: 1. Either punch the standard 3 ring holes at the edge or, 2. Offer for sale a binder for them (example enclosed).—J. S. Brattain, Gardena, Cal.

We would be glad to provide binders if enough readers want them. However, it has been our experience that the binders are on the expensive side (the example in your letter was \$3.00). As Tape Recording is a standard size magazine we believe you can obtain a standard binder to hold the copies for less than that amount from your local stationery supply house.

To the Editor:

I have been noticing of late an increased number of inquiries coming in from readers who fail to put their complete names and addresses on letters. This leads to confusion. Many times the names and addresses are illegible on either the letters, the envelopes, or both. Also, we have trouble in cases where people put their addresses on the front of a postal card which then has the cancellation printed over it by the postoffice. I think that a note to your readers suggesting that names and addresses should be printed or written plainly in the main body of the letter would be a good idea.—Malcom Jay Gottesman, Mal's Recording Service, Rockaway Park, N. Y.

Amen. Ed.

To the Editor:

Your Canadian readers might like to know that there is a recorded tape rental service now in Canada. I had to pay duty for rented tapes from the States but now that expense can be saved. The Canadian Tape Rental Service is at 10207, 126th Street, North Surrey, B. C.—Charlie Faraci, Nanaimo, B. C.

TAPE CLUB NEWS



British Tape Recording Society members viewing equipment at the first club exhibition at the Manchester Audio Fair in Lancaster, held in March. The Society sponsored the Fair.

In our June issue we published a note about the need for a good used tape recorder by the Catholic Tape Recorders of America for language work in a college in India. We were glad to receive the following letter from Jerome W. Ciarrocchi, secretary of this fast-growing club.

"Thank you very much for the write-up given to CTRA in the Tape Club News column.

"It may interest you to know that a brand new Ampro 758 was donated to the Sacred Heart College in India. The donor prefers to remain anonymous. Not only that, but we have found a Salesian missionary who has offered to carry the recorder by hand and deliver it personally to the college in India.

"You cannot realize how happy we are to do this for the Sacred Heart College in India and we truly appreciate your kind help.

Mr. Ciarrocchi continues on to say that the club is now nearing 100 in membership, and as soon as they do, they will publish a printed annual roster.

Also, the club has begun their International Tape Library. The secretary states that many large organizations have promised to help build the library with recorded tapes, discs, etc.

Keep up the good work CTRA.

Correspondent Joe Armstrong of Eugene, Oregon, has an idea for fellow club members who are sports enthusiasts. Joe would like to start a sports tape exchange where any one member can record his favorite sport, send it to Joe, and in turn

receive some other game recording from another part of the country or even the world. For instance, there might be a cricket game for a football game, a hockey game for a bullfight, or a horse race for a turtle race. Complete details have not been worked out, but Joe would like to discuss it with others who are interested. Members who wish to contact Joe will find him listed in the membership roster.

World Tape Pals has a newly-formed Police Group Round Robin Tape Club. It has been originated by club members in three countries and has already worked out its aims and by-laws. Its purpose is to exchange news and information relative to law enforcement in various countries by means of round-robin tapes. Members of this club promise to make up short taped programs at regular intervals for circulation to other members, subjects to be relative to police work whenever feasible. For more information about this, club members may write to: Jack Vaudin, 42 Norman Terrace, Enoggera, N.W. 7, Brisbane, Qld., Australia; Merv Tobin, 176 Wellers Road, Wellers Hill, Brisbane, Qld., Australia; Gil and Chloe Gilmore, 2239 S. Grand Ave., San Pedro, Calif.; or George Brooks, County Police Station, Bradfield, Reading, Berkshire, U. K. Self-addressed, stamped envelope should be included.

American Tape Exchange member Joe Armstrong has expressed an interest in organizing a stamp collector's club within ATE. If anyone is interested, contact Joe at 180 Myoak Drive, Eugene, Oregon.

JOIN A CLUB

TAPE RESPONDENTS INTERNATIONAL
Jim Greene, Secretary
P. O. Box 416, Dept. T, St. Louis 3, Mo.

THE VOICESPONDENCE CLUB
Charles Owen, Secretary
Noel, Virginia

WORLD TAPE PALS, Inc.
Marjorie Matthews, Secretary
P. O. Box 9211, Dallas 15, Texas

AUSTRALIAN TAPE RECORDISTS ASSOC.
Jack A. Ferry, Federal President
Springbank Rd., Clapham, S. Australia

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

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

THE BRITISH AMATEUR TAPE RECORDING SOCIETY
Ted Yates, Secretary
210 Stamford Road
Blacon, Chester, U. K.

AMERICAN TAPE EXCHANGE
Stuart Crouner, Secretary
181 E. Main St.
Gouverneur, N. Y.

CATHOLIC TAPE RECORDERS OF AMERICA, INTERNATIONAL
Jerome W. Ciarrocchi, Secretary
26 South Mount Vernon Avenue
Uniontown, Pa.

NOW... you can RECORD ANYWHERE



HOUSE CURRENT
110 VOLT A.C.
FROM YOUR
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with a
TERADO

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MOBILE POWER CONVERTER



"Supreme" converter provides 175-200 watts, A. C., filtered FOR ALL TAPE RECORDERS

Converts 12 volt battery current to 110 volt, 60 cycle A.C. . . . makes your recorder and other equipment truly portable! Handy remote control switch included.

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All types of electronic equipment gain new versatility with the aid of Trav-Electrics . . . Tape Recorders . . . Hi-Fi and Dictating Machines . . . Test Equipment . . . Portable TV . . . P.A. Systems . . . Soldering Irons . . . Radios . . . Phonographs . . . Lights.

CHOICE OF CAPACITIES

Trav-Electric Converters are available in a choice of models, from 35 to 200 watts, all filtered for radios and tape recorders; powered from either 6 or 12 volt batteries. Prices as low as \$21.95.

"Music on Wheels," as seen in Room 961, the Palmer House, during the NAAM Show, July 21, 22, 23, 24, 1958.

If your Radio or Electronic Parts Dealer or Jobber is Unable to Supply You, Write:

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tandberg stereo

plus everything else you would
want in a complete tape system



**the new
dimension
in sound...**

Designed for the highest of reproduction standards... Scandinavia Styled from fine grain mahogany.

STEREO 3-Speed Tape Phonograph and Tape Recorder—Tandberg Model 3-Stereo—for at home listening pleasure... or conveniently portable in luxury-styled luggage type carrying case for traveling enjoyment.

For the finest in sound reproduction, two extremely well-balanced power playback amplifiers are built-in with such efficiency of design that the distortion of each amplifier is under 1%. A specially manufactured in-line stereo head, unique in design and construction, provides a clarity of reproduction and a range of response heretofore unattainable.

The model 3-Stereo weighs 27 pounds, and is priced at **\$369.50**. Complete with microphone and carrying case.

The Tandberg stereo-trio including model 3-Stereo recorder/reproducer and two perfectly matched speaker systems. **\$469.95**



10 East 52nd St., New York 22, N. Y.

NEW PRODUCTS

AMERICAN TRC SERIES



American Microphone Manufacturing Co., 412 South Wyman St., Rockford, Ill., is marketing the TRC series microphones. Frequency response is 80 to 8500 cps in the dynamic type, 80 to 7500 cps in the ceramic type and 80 to 9500 cps in the crystal type. The diaphragm is made of Mylar plastic. You can hold the push button to talk, or switch it on permanently for conference use. A clip-on stand is supplied for resting on tables, and is also used as a lavalier to support the mike in perfect speaking position on the chest. Push button is housed in the head of the mike, permitting an extra baffling volume for better low frequency response. Contact the manufacturer for prices and more information.

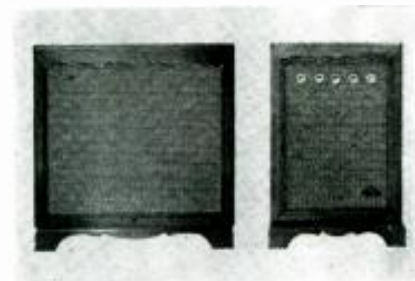
TAPE & FILM CONTAINERS



Specially made cans in a wide range of sizes for storing, packaging and shipping recording tape, home movie film, TV Kinescopes, sound slide film and microfilm are now available from George D. Ellis & Sons, Inc., American and Luzerne Streets, Philadelphia 40, Pa. Snug fitting covers

protect contents against dust, grease, moisture and humidity and cans may be tape sealed for added protection during long storage periods. For sizes, prices, and additional information, write to George D. Ellis & Sons, Inc.

DU MONT BRENTWOOD



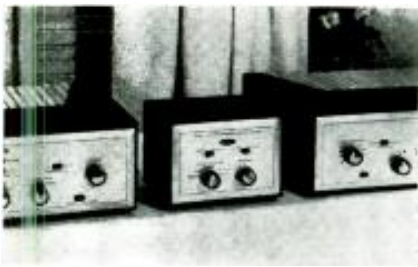
DuMont is offering the Brentwood, shown above. The Brentwood offers both stereo and monaural sound systems. Harmonizing auxiliary stereo unit (right) is available for the console. Features of the Brentwood, which is obtainable with or without an AM/FM radio, include two electrostatic tweeters for most efficient sound reproduction in the very high audio range; a high efficiency 10" speaker mounted in a sealed "Dynacoustic" enclosure; extra speaker terminals, transformer powered 12-watt push-pull amplifier with peak power rating of 24-watts; automatic on-off control; set-and-forget volume control; full-range bass, treble and presence controls; 4-speed record changer and a plug-in ceramic cartridge with diamond stylus. For prices and more details write to Allen B. DuMont Laboratories, Inc., 750 Bloomfield Avenue, Clifton, New Jersey.

ROBINS DEMAGNETIZER



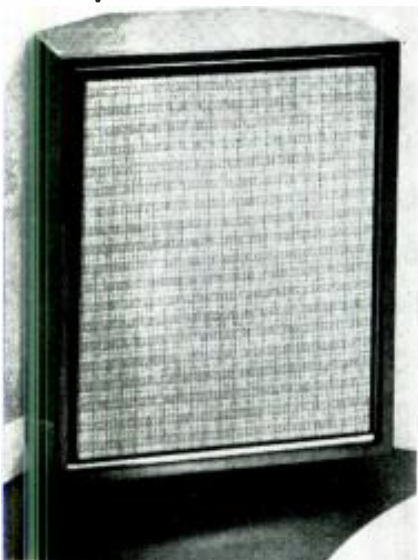
Robins Industries Corp., 36-27 Prince Street, Flushing 54, N. Y., is marketing a new HD-6 head demagnetizer. The unit features a thin extended pole piece which fits most recorders. The degausser consists of a 110 V., 60 C.A.C. coil in a handfitting phenolic housing. The pole piece extends from one end of the housing and the line cord from the other. Contact of the energized pole piece with the pole tips of the recording head causes the head to be saturated by an alternating magnetic field. Gradual removal of the saturating field from the head neutralizes any residual permanent (DC) magnetism. Price is \$10.00. For additional information, contact Robins.

SCOTT STEREO-DAPTOR



I. H. Scott, Inc., has announced a new hi fi component called the Stereo-Daptor which acts as a central control center for a complete stereo system using two separate amplifiers. The hi fi owner simply plugs his present hi fi amplifier into the back of the Stereo-Daptor. Then he plugs in his new amplifier. Stereo-Daptor has a master volume control over both amplifiers so that rebalancing is not necessary when volume is changed. It allows the hi fi fan to play stereo records, stereo tape or stereo AM-FM. The unit has a brushed gold front and comes completely enclosed for custom installation. All connecting cables are provided. The Stereo-Daptor is priced at \$24.95. A complete technical bulletin explaining Stereo-Daptor is available by writing to H. H. Scott, Department P, 111 Powdermill Road, Maynard, Mass.

E-V WOLVERINE SERIES



Electro-Voice, Inc., 425 Carroll St., Buchanan, Mich., has unveiled a new series of high-fidelity components called the Wolverine series. The Loraine shown above is in this series. The series includes an 8" coaxial and a 12" coaxial speaker, three enclosures, and two "Step-Up" packages (a mid-range driver and crossover, and a high frequency driver and crossover). The Wolverine series features radax construction, heavy duty die-cast frames, an edgewise-wound voice coil, a slug-type magnet, long-throw voice coil and sealed-in-glass coil form. The speakers are only 3 1/2" deep for easy custom mounting or building-in walls or ceilings. For prices and complete information, contact Electro-Voice.



YOU CAN EDIT THE SOUND
as you record

WITH THIS VERSATILE

NEW American Microphone

Selective recording is easy with AMERICAN'S new TRC microphone. You can hold the push button to talk, or "lock it on" for extended use. A handy clip-on stand is supplied for resting the microphone on conference tables... lavalier cord is also supplied. With the sleek, modern TRC, you can take full advantage of your tape recorder's range... at low cost. Choose from dynamic, ceramic, or crystal models. Wide frequency response (from 70 to 10,500 c.p.s. in the crystal model), omni-directional pickup, and faithful audio reproduction are yours for as little as \$16.00 list price.

TRC 201 Series
Microphones
List Prices
\$16.00 to \$24.30



for professional quality public address and sound recording

AMERICAN'S D22 Omni-directional Dynamic Microphone (with variable impedance)

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TEEN TAPERS

BY JERRY HEISLER



Apparently someone read my article on making a recording of graduation. I happened to be at a graduation ceremony held at a Minnesota High School and saw microphones placed prominently and a technician or two around, making a recording. Maybe they had the idea on their own, but we hope we had something to do with it.

Summer is outdoor time, camp time, vacation time, and time for anything else you need time for. Take those recorders outside and see what you can do with them. I am especially interested in outdoor recording and sound effects. I've heard some of the things that can be done by teens. To encourage you to do this, we're going to have a contest.

Make a tape, on a 3" reel, of outdoor sound effects and mail it to me at 124 Deere Park Court, Highland Park, Illinois. To the winner we'll promise a free subscription to Tape Recording Magazine. All you do is make up a tape of sounds recorded out of doors and put a little explanation at the beginning of the tape, and send it. If you want your tape returned, send postage and your address. Get going and let's make this a big success.

Many of you may have received recorders as graduation gifts and if so, take advantage of the summer months to put it to good use. If you're college bound, set to work now taping your favorite records so that you don't have to take them to college. I've learned from sad experience that it is best not to take a phonograph or records to college. It seems that everyone wants to borrow your records to play on their phonograph, or if they don't have a phonograph they'll want yours. With your music on tape they can't hurt it, and if you've got the recorder along a million other possibilities arise.

Send a tape home weekly to your parents. Phone calls come high and you don't often get to say everything you want. For about 25c a week you can mail a big 5 inch reel and can take time to say all you want to. If you have a camera, take pictures of some of the events that occur around campus and enclose them with your tape to give your family a "picture story" of your college days.

If you're one of those who hates to take notes here is a sure fire thing to do. Jot down the important points in class and as soon as your lecture is over, sit down with your recorder and read them onto the tape filling in the details as you can remember them. You'll find that by using the new double length tapes, it won't take too many reels to record the entire semester of lecture notes. By adding on every day you'll find that at the end of the semester you can listen to a more or less continuous lecture of the class work. This makes

studying for those exams much easier and we'll bet, much more enjoyable. I once mentioned that I saw a student with a pocket recorder recording the actual lecture. If you're one of the lucky few you've got it made. As a matter of fact you might be able to get someone to take the recorder to class for you and you wouldn't have to go at all, but then we don't want to make your job too easy nor do we want the school officials banning the magazine.

In all seriousness, the recorder can be a big help in this way but you should use it as just that and don't rely too heavily on it. We've found by sad experience that you can't learn a course automatically.

Personally, we'll rank a tape recorder as being every bit as valuable as a typewriter and a dictionary.

Getting back onto the home scene, those of you who want a project for the home might attempt extending the range of the music producing use of a recorder by putting additional speakers around the house. Speakers can be obtained for just a few dollars and can be mounted at various locations around the house. You might wish to make up a little switching box to handle the distribution of music to your various speakers. A gang switch, obtainable for just a few dollars, will serve this purpose very well. At the same time that wiring is being done, you might want to install inputs at the same locations. This would enable you to keep your recorder in one place and plug in your microphone from various locations around your home. These are just a few ideas and you "do-it-yourselfers" will probably have more ideas. Let us have these ideas so we can pass them on to others.

LAST MONTH
we asked you to
WATCH THIS SPACE.
THIS MONTH,
well, we didn't
get it finished, so
you'll just have to
WATCH THIS
SPACE
NEXT MONTH.

TAPE IN EDUCATION



BY JOHN J. GRADY, JR.

An interesting adaptation of the stereo playback feature found on many recorders is the Add-the-Melody tape which is currently being put out by Livingston Audio Products, Caldwell, New Jersey.

While the present tape is in the popular field with old time songs, the principle has wide educational use.

The tape has recorded on the bottom track, musical accompaniment and the top track is left blank to be recorded by the recordist himself.

When the tape is put on the recorder the sound from the bottom channel is heard from one speaker. The recorder is placed in the record mode and, inasmuch as the lower channel is connected to a playback head only, it will still continue to play from the speaker.

The top channel, however, may now be recorded upon by using the microphone and the melody added to the accompaniment being played from the bottom track.

When the reel is rewound and played back after recording, the sound recorded through the microphone will be found to be in perfect synchronism with that heard through the other speaker from the bottom track of the tape.

The beautiful part of this method is that the bottom track is never affected and may be replayed any number of times. The top track, however, is erased and recorded each time. In this way the same tape may be used over and over again.

Unfortunately the tape will not work on all machines having stereo playback because in some of them the lower head is grounded when the recorder is placed in record position.

We believe that this new tape principle is going to have such wide application in music instruction that changes should be made in machines destined for the educational market so that they may be able to be used in this way.

While most schools have a piano of sorts there are few schools which can boast of a piano in every classroom.

Through the medium of this special tape and a stereo playback tape recorder the effect of having a piano in every classroom could be secured and, in addition, the class could hear exactly how they sounded when the tape was played back.

It is difficult to describe sound and to make criticisms but when the class can hear for itself exactly the mistakes that were made, the learning process becomes much faster and better results are secured.

This same type of tape is likewise valuable for individuals, especially singers and instrumentalists who must carry a melody line against the background of an orchestra. Practice with the tape then becomes as close to the actual performance as it is possible to do. The advantage of being able to hear one's own efforts combined with the accompaniment points up defects that need correction very quickly.

We hope to see the day when such equipment and a full line of educational music tapes will be in every school. As we have mentioned many, many times before, the value of a tape recorder to a school is limited only by the imagination of the teachers using it for classroom work. The additional dimension now afforded by stereo sound adds even more to its value.

We have found that ordinary music played from the discs usually used in classroom work do not hold the attention the way stereo sound does. Because it is so life-like, more attention is paid to it. It is "listened to" rather than being heard. For music appreciation work and identifying of orchestral instruments, etc., stereo sound provides a far more effective medium than any form of monaural sound, either from tape or disc.

While vacation time (for the pupils) is still with us it might be a good idea to start thinking of ways in which your school recorder can lighten your work load come the opening of school. As we have mentioned before in these columns, the recorder is widely used in language instruction. But it is mighty useful in other fields as well. The taking of dictation in shorthand classes is a case in point.

The dictation material may be recorded on tape by the teacher at the speed desired and then played for class practice.

While the tape is playing it is possible for the teacher to circulate around the class and give individual attention where needed. This is much superior to having the teacher spend his time reading from texts.

Drills and similar material may also be recorded on tape, as may piano accompaniment for group singing. This latter is especially handy, as with the Add-the-Melody tapes mentioned above, if there is no piano in the classroom. Of course, you will not be able to record at the same time but you can free yourself for leading the class instead of playing the piano.

Make your plans for using the recorder now so you'll be ready to go the first day.

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CROSSTALK

from the Editors

* * * * *

NEATEST TRICK of the week to come to our attention is the development of a "magnetic reader" by Canon Camera Company of Japan. Device uses sheet of paper coated on one side with magnetic oxide. Anything may be printed on reverse side of sheet, pictures, text, music, etc. When placed on reader, three tape heads scan bottom of sheet and reproduce sound recorded there. Presently being demonstrated at European fair device has brought many inquirers who see great possibilities.

* * * * *

FOUR CHANNEL stereo developments are made possible by improved heads having almost microscopically fine gaps. Plans also call for drop in both price and tape speeds. Will make tapes competitive in price to stereo records. New heads will be able to play present stereo tapes as well as four channel tapes when they become available.

* * * * *

CITY OF BALTIMORE which caused uproar in ad circles by imposing tax on advertising (since repealed) now might cause uproar in hi-fi field. Councilman Richard D. Byrd thinks there may be false advertising involved in the sale of lo-fi phonos billed as hi-fi. Question: who sets the standards?

* * * * *

WGN-TV, Chicago, plans to offer the popular Ding-Dong School program to video tape equipped stations beginning late in August. This is the first time a weekly, Monday through Friday show has been offered on tape. This could mark the beginning of the end of film (except for old movies) in TV stations as prophesied in this magazine almost four years ago.

* * * * *

AT LAST THEY have done it. Stromberg-Carlson has made a loudspeaker rated at 1000 watts. It weighs 150 pounds. The woofer is driven by 24½ pound ring magnet. The cone will vibrate as much as two inches and the voice coil is made of high temperature materials so that it is capable of continuous operation up to 500° F. A powerful fan blows air through the coil while the speaker is in operation. Speaker will presently reproduce from 50 cycles per second to 2400 but units now being designed will extend range to 15,000 cps. Built for research on the effects of high intensity noise on jet and missile parts, we wonder how long it will be before some exhibitor at a high fidelity show latches on to it to blow his competitors out of the hotel. You could not only break a lease with this speaker but all the windows as well.

* * * * *

MINNESOTA MINING has at last retired veteran Scotch Brand No. 112 tape which was made for first tape recorders used in this country. It had a brief flash of glory in 1948 but was obsolete even before it was put to use when the red oxide tape was perfected. ABC using recorders patterned after German Magnetophon required tape similar to the German product. 3M's made it and continued to produce it in small quantities for the few recording studios where the old machines were still in use. With the advent of the low print type tape, the old 112 could be discontinued.

* * * * *

BRIEFS: Reeves Soundcraft execs will turn to country living shortly when executive offices will move to Danbury, Conn. in new plant. . . . Robert Oakes Jordan, stereo whiz is now associated with new firm, Sonic Arts, Inc., Chicago, which will produce stereo sound business presentations. American Microphone is now affiliated with General Cement-Textron, Inc. Age of Stereo will be theme of New York Hi-Fi show in October. Westinghouse and Dictaphone knocked heads together to produce AIMO (audibly instructed manufacturing operations) which uses tape to give step by step instructions to teach workers complicated tasks.

QUESTIONS & ANSWERS

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

Q—I'm writing you hoping you can furnish me with some data on the following. I'm interested in a recorder that is supposed to be on the market sometime soon that will record programs from viewer's home TV set on black and white and color—picture and sound on magnetic tape. And viewers can see the program again at will. The set is supposed to be about the size of today's TV set. I would appreciate it very much if you could give me some information on this machine. I would be interested in knowing who is or who will manufacture it. Thanking you, very kindly. I remain,—A. L. P., Bards-town, Ky.

A—RCA displayed a laboratory prototype of a "hear-see" video tape player which someday may be available for home use. The programs were recorded on regular 1/4 inch tape. No provision was made for recording your own programs. At present the only video recorder on the market is the professional Ampex machine which sells for \$45,000 and has an auxiliary attachment for color at \$27,000. Without doubt, someday such a unit will be available for the home, at which time you will also be able to shoot home movies on tape and play them through your TV set. This is a while off.

Q—I have a couple of brief questions which I would like to have you answer. 1. Having access to a surface grinder with large magnetic chuck I would like to use the availability of this unit for the bulk erasure of tape if possible. Please advise if it can be done and if so please give the procedures. 2. How can a microswitch or other shut-off device be attached to a recorder such as the Wollensak 1500 to turn the unit off after the tape is run out? Incidentally, it would hardly seem fair to write you without stating how much I enjoy and use your magazine. It certainly fills a needed requirement for all tape fans.—R. W. P., Meadville, Pa.

A—We know of no reason why a magnetic chuck could not be used as an eraser provided the field created by it is an AC field. Better is to try an experimental roll of tape on it and see what happens. The tape should be laid on the chuck and slowly rotated, turned over and rotated again for a half-minute or so. It should then be removed from the chuck and slowly withdrawn to a distance of three or four feet before cutting off the current in the chuck.

To attach a microswitch a point must be picked out on the machine where the tape can pass over the switch with some tension. Best point is after it has left the capstan and roller. The switch may be wired into the 110 volt power supply circuit which

will cut off both motor and amplifier when the tape runs out or it may be wired into the motor circuit only, in which case the motor will stop but the amplifier will keep going until manually shut off.

Microswitches can be obtained from your local radio parts dealer who has them in a wide variety of types. If you do not have a radio supply dealer in town then one of the large mail order houses, such as Newark Radio or Allied Radio can supply you. You will have to devise your own mounting bracket to fit the switch and the recorder

Q—In a report on tape recorders by a rating agency they state: "No recorder under \$850 would be suitable for real hi-fi stereophonic sound. If you want a tape recorder primarily for hi-fi reproduction of music from commercially available pre-recorded tape you will need a recorder of the type used by professionals, broadcasting stations and others who can afford top grade equipment."

They do not state whether room size or furnishings in the room are a factor in the selection of such a recorder. I live in a small apartment and my playing area is 12 ft. x 15 ft. Before I spend \$850 or more I would like to know if my playing area would warrant such an outlay of money . . . that is, would my limited space have any effect on the stereophonic sound produced by top grade equipment?—E. C. F., Bayside, N. Y.

A—We think the rating agency is quite a bit overboard in their statement. Naturally, the more you pay for something, generally speaking, the better its quality but perfectly acceptable and hi-fi sound can be obtained from units a lot cheaper than \$850. Actually, the size of your room would have little to do with it, other than the fact that you would not need powerful amplifiers to fill the room with sound, a smaller outfit would do the job. On the other hand, the top grade equipment will work just as well in a small space as a large one.

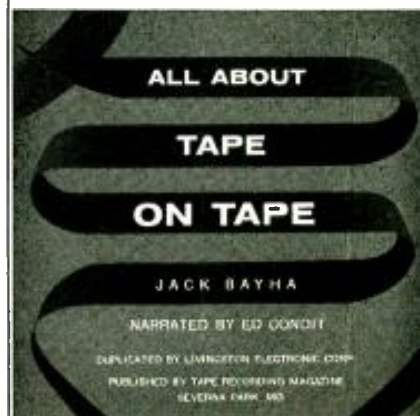
Q—In your February issue of HI-FI TAPE RECORDING you mention a microswitch which can be used for automatic cut-off when the tape reaches the end. You state that a model switch with a roller is available. Please let me know where this switch can be obtained as I have been looking for this very type switch to be installed on my Bell tape deck.—R. H. C., Decatur, Illinois.

A—Any radio parts house should have these small switches on hand. If not, you can get them from Allied Radio or Newark Radio, in Chicago, or similar mail-order houses.

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PRO'S RECORD AMATEURS

by Joel Erlich

... here's how the pro's tackle a recording session.

MANY recording hobbyists complain all too often that the reason their results are not professional is they don't have enough mikes, or they don't have a good enough recorder, or their mikes aren't good enough. All of these are undoubtedly true and are responsible, to one degree or another, for any defects in a recording.

Although it was not intended as such, a recent recording session held for the Shawnee Press (a division of Waring Enterprises, publishing most of the Fred Waring "Pennsylvanian" musical arrangements), serves as a good illustration of the manner in which professionals would record the type of group that most amateur recordists would normally have access to. The engineers gathered at this session were: Steve Temmer (Gotham Audio—Your Hit Parade, Voice of America and other frequent recordings of note), John Willhoite (Waring Enterprises—chief recording engineer), George Cohen (sales engineer; professional equipment division, Fairchild Recording Equipment Corp.), Lloyd Loring (sales engineer; professional equipment div., Presto Recording Corp.), Dr. Helmuth Erzolt (consulting audio physicist) and the author—a professional audio engineer.

On the performing side of the balance, the Wind Ensemble of the Stroudsburg High School Band, the Shawnee Choir (an amateur group), Dr. Earl Willhoite (educational director of Waring Enterprises) and Mr. Ernie

Farmer (general manager of the Shawnee Press). The old Music Hall in Pennsylvania selected for the recordings does not have "good" sound, but it is passable. It has a very "live" sound and a very long period of reverberation. This, in essence, meant, that any sound, no matter where it originated within the hall, would be heard everywhere else in the hall in a matter of seconds. Furthermore, any sound produced by an instrument and picked up by a mike, would be reflected by the walls and ceiling and returned to the place from which it originated several seconds later. In fact, there was almost an echo. It was a troublesome type of hall and steps had to be taken to provide adequate separation between the band and the chorus and between individual voices in the band. Worse still, a major highway passes just a few hundred feet from the hall and heavy trucks came racing down the mile long hill all during the session. You could not only feel the beamths of the road, you could feel them through the floor. All in all, there were many problems to be overcome before any successful recordings could be made.

John Willhoite had been recording at this location for some time and had developed some basic cures for the troubles of this hall. The primary trouble was the leakage of instruments and their blotting out of the choral voices. For this, a series of long card tables had been placed on one of their short sides in order to block the sounds from the band

and reflect them towards the ceiling. Of course, this gave another path for the reflected sounds from the band to follow, but more reverberation was tolerable with the band than with the choir and, in addition, this shorter path filled in between the original sound and the longer time constant reflected sounds. In order to simplify the placement of mikes, clotheslines had been run from the ceiling in pairs with a wood bar between them. Affixed to the bar was a mike fitting so that mikes could be hung. The clothes lines ran through hook eyes in the ceiling, over to a wall and down to floor level. In this way, the mikes could be hung and adjusted to height from the floor. The mike cables were also hung.

John had also placed a semi-matte reflector behind the chorus in order that their sound be reflected towards the mike for reinforcement. He had also rigged a heavy curtain along one wall so that it could (if desired) be extended in order to deaden some of the reverb. He had also set up a series of wide steps for the band so that each musician could see the conductor and also be "seen" by the mikes at floor level.

For this session, we were to record a group of J. S. Bach chorales. These were to be performed by *band* and chorus. Since no two recording dates are alike, mike placement is a problem each time a recording is done. Steve took over the task of mike placement while John advised him of some of the aspects of the hall. Lloyd concerned himself with placement of the stereo mikes as it had been decided to make both monophonic recordings and stereophonic recordings at the same time. Only the monophonic recordings were to be used, the stereo sets were for determination of the desirability of

adding a stereo set-up to the Waring equipment. Dr. Etzolt also went down on the main floor to offer his help with the mike placement while George got out his camera in order to record the events you see pictured here. I was more a bystander than anything else for I had gathered together these recording brains for this session and besides, this was their turn for recording, I had had mine on previous occasions.

Initially it was realized that some reinforcement would be needed for the bass woods and the lesser percussion instruments. Because of the quality of the sound produced by these instruments, a sloppy sort of mike was needed, one with a "tubby" sound, a loose, over limp ribbon mike was needed. Fortunately, an old R. C. A. 44-BX was laying around, having just returned from a trip with the Pennsylvanians. This was put in the midst of the left side of the top (fourth) row of the band, where the lesser percussion was located. The mike faced somewhat towards the center of the band so as to pick-up the bass woods. The mike, a bi-directional velocity, picked up the lesser percussion on one side and the bass woods on the other. The side which picked up the lesser percussions also was used to pick-up the bass brass which, for this session, had been placed to the left in the third and fourth rows. The mike was put on a floor stand and raised about five and one half feet off the floor of the step.

For the main pick-up of the band, it was decided to use as few mikes as possible. Since Steve is the newly appointed sales agent for Neumann mikes in this country, it was only fair that we use Neumann mikes. These mikes, incidently,

Facing page: from the control room the engineers were able to watch proceedings on the floor below. In picture, left to right, are Lloyd Loring, Ernie Farmer, John Pyle and Earl Willhoite. Below: An overall view of the ensemble and chorus while recording the first number. The mike changes that were necessary have been made and the brass quartet is on the right.





A study of an engineer at work. Steve Temmer watching the meters of the two Ampex recorders while mixing the mike lines to get the best stereo balance.

were formerly sold by and known as Telefunken mikes. Initially a pair of KM-54 cardioid condenser mikes were set in front of the band. These mikes were set about ten feet in front of the first row of instruments at about the level of the faces of the performers in the second row. The mikes faced directly at the band. In addition, a Neumann MM-1 omni-directional mike (actually a high precision measuring mike) was placed centrally in front of the band. For the chorus, a Neumann U-47 was set in the center front of the group, about twelve feet in front of them at the level of the second row. It was left vertical and set to its cardioid position. Both the MM-1 and the U-47 are condenser mikes, in fact, with the exception of the R. C. A. 44-BX mentioned and the Beyer miniature velocity to be mentioned later, all mikes used were Neumann condenser mikes.

The manner in which the 44-BX was set-up left its dead sides pointing at the chorus on the left and the brasses on the right. This insured that it would not pick-up from either of these two sources. Since the 44-BX is a low sensitivity mike (as compared to the other mikes at the session) any pick-up of the woodwinds was negligible at the settings of the mixer at which the 44 was used. The U-47 was set to its cardioid position with its dead side facing the gap in the card tables (through which the chorus could see the conductor) so that it did not pick up the band. The KM-54's of course, had their deadsides towards the dead (curtain lined) wall, and did pick up quite a bit of chorus. This was not too serious as it was a matter of not having the band drown out the chorus and lesser percussion rather than the reverse.

The first few takes showed that there was not enough isolation between the brass quartet and the rest of the band. (This chorale featured a brass quartet in counterpoint with the band, primarily the woodwinds). To overcome this, Steve had the quartet leave the band and take places in a semi-circle off to the right of the band, facing the conductor. The KM-54 on the right of the band was then swung to face the quartet rather than the brass section of the band. The brasses were so strong, it was felt they would be picked up without their own mike. They were so strong, that they still drowned out the quartet and, as a result, the quartet had to

be moved to the left side of the band. Here they again formed a semi-circle and faced the conductor. The KM-54 was moved with them and again faced them. Ernie felt, however, that the woodwinds lacked sparkle. The KM-54 was returned to the right side of the band but the U-47 was placed on the left side of the band. It was placed so that it picked up the brass quartet on its side and the woods on its front. The KM-54 that had been in front of the left side of the band was moved to the chorus to replace the U-47. It was put in about the same position as the U-47 had been in.

The U-47 had been put in front of the woodwinds because it is a much brighter sounding mike than the KM-54. The KM-54, to achieve the same brightness with the chorus as had the U-47 was, therefore, raised to the level of the fourth row of voices and pointed downward towards the second row of voices. Thus, it picked-up most of the highs of the singing.

After the first chorale had been recorded, the brass quartet was moved back into the body of the band (they would not solo on any of the others) and the U-47 was moved closer to the woodwinds. For some of the later recordings, a softer sound of chorus was desired at certain times. For this, a Beyer miniature velocity mike was rigged alongside the KM-54 in front of the chorus. This little mike was quite startling and made some of us reconsider our opinion of the velocity mike (which has lately been out of favor). It was quite "hot" and fairly "bright," though not as much as the condenser.

The mikes were all connected, through long cables (at low impedance—150 ohms) to a pair of Altec-Lansing #220-A mixers. These were connected to an Ampex #300 and an Ampex #403 (to produce a master and a protection copy of the recordings). Monitoring was done through an Altec-Lansing #604-B speaker in an Altec-Lansing professional bass reflex cabinet. Playback on the floor was achieved through a smaller speaker powered by an Altec-Lansing amplifier. Talk-back to the floor from the control room (on the balcony) was achieved through a Brush "Soundcell" crystal mike and a small five watt amplifier driving a small loudspeaker on the balcony wall. A relay on the box on

which the mike was mounted applied power to the amplifier (in effect turning it on) and, at the same time, cut out the monitor speaker in the control room (to prevent feedback). At the mixer was Steve with John hovering behind him to help and offer his help when needed. Ernie Farmer supervised the recording. Both Steve and Ernie followed the score of the selection being recorded and Ernie prompted Steve by calling out which instrumental group would be most important at a particular moment, just before it came on, so that Steve could set his mike levels for it. Lloyd monitored his stereo recording through earphones (he was using a brand new Presto R-800 stereo recorder). Dr. Willhoite (conducting) called the "take" number each time and was the final judge of the recording. Judging which take was best was hard but his task was made easier since Ernie kept a record of the takes and how good they were, their faults, etc.

Since we were dealing with a teenaged group, no effort was made to get complete run throughs of the numbers after the first or second try. Since teenagers do get tired easily, all efforts were restricted to intercuts of those portions that were not done to satisfaction the first few times. These were later edited in by John.

Of interest to the amateur recordist in this session was the manner in which the mikes were used. Of course, all professional equipment was used for these recordings, they were, after all, professionals doing a professional job. However, the amateur can benefit from the ideas illustrated. In buying a mike, keep in mind the circumstances under which it will be used. For example, a velocity (ribbon) mike is always bi-directional. It can be used to pick-up two things at once. It also has two dead sides which can be positioned to eliminate pick-up of undesired sounds.

A cardioid mike on the other hand, picks up from the front and both sides but has a dead rear. The omni-directional mike (most frequently used) has no dead sides. The polar pattern (its dead sides and sensitive areas) of a mike can



Ernie Farmer, General Manager of Shawnee Press during the recording of a number. Upper right: the equipment used in the recording. An Ampex 403 portable recorder, its amplifier and the Pultec program equalizer, the main amplifier with the patch bay and the Cinema Engineering filter units. Lower: Steve Temmer setting up mikes for the session. Seated on the podium is Dr. Willhoite rehearsing the wind ensemble. The mikes in the picture are: in the rear, Neumann U-47, behind Steve, Neumann KM-54, at his right hand, Neumann MM-1, alongside MM-1, Neumann KM-54 and at the extreme left of picture an RCA 44 BX. The recording was done in the Music Hall at the Delaware Water Gap, part of the Old Castle Inn.

be put to use in preventing echo, reverberation pick-up, leakage of other instruments, drowning out, etc. Baffles (the card tables) can be put to use to isolate one section of a group from another. Curtains and drapes (and they need not be permanent—they can even be coats etc.), help a good deal in cutting down the liveness of a room. It doesn't take too much imagination to see what walls are going to cause reflection of sound. A flat surface is always dangerous. Flat parallel surfaces cause multiple reverberation. Sound goes in straight lines (except low frequencies). Picture all the various paths a sound can take from its source, it'll give you a good idea of what has to be done in order to get a good recording.

The sound quality of a mike can be put to good use. Just as the R. C. A. 44-BX was used for the bass because of its "tubby" sound and the Beyer for the chorus when a softer sound was needed, so any mike can be best used for a given sound. For example, a ribbon velocity mike has the advantage of overemphasizing bass when very close to the instrument. This is called the "proximity effect," but is quite useful for double bass, tympani, bass drum, tuba, sax and the like. Most dynamic mikes have a peak around 5,000 cycles. This is useful on brasses, flutes, piccolo, cymbals and the like. A ribbon mike is usually good on solo piano because of its smooth sound. A condenser mike may take any of these characteristics.

To be sure, a professional recording is bound to sound better than an amateur. Not because of the equipment though, it's because a professional knows how to use his equipment. If you would like to get better recordings of music, get to know your equipment better.





MAKING MAGNETIC TRACKS VISIBLE

... new kit aids in trouble shooting and editing.

A NEW "do-it-yourself" kit for making magnetic tracks visible has just been released by Reeves Soundcraft.

The solution used is basically a suspension of extremely fine iron particles in a carrying agent which flashes off quickly. It is non-toxic and non-inflammable.

As the tracks on tape are magnetized areas, the iron clings to them, making them visible.

The "developing" of the tracks is very simple. About a quarter inch of solution is poured in the dish (the can should be shaken vigorously before pouring) and the tape immersed in it and kept in motion. When the tracks become visible, the tape is lifted out and the solvent allowed to flash off. Because the iron particles settle rapidly, the solution should be kept agitated during development. The lid should also be placed on the dish as soon as possible after the tape is removed as the solvent evaporates very quickly.

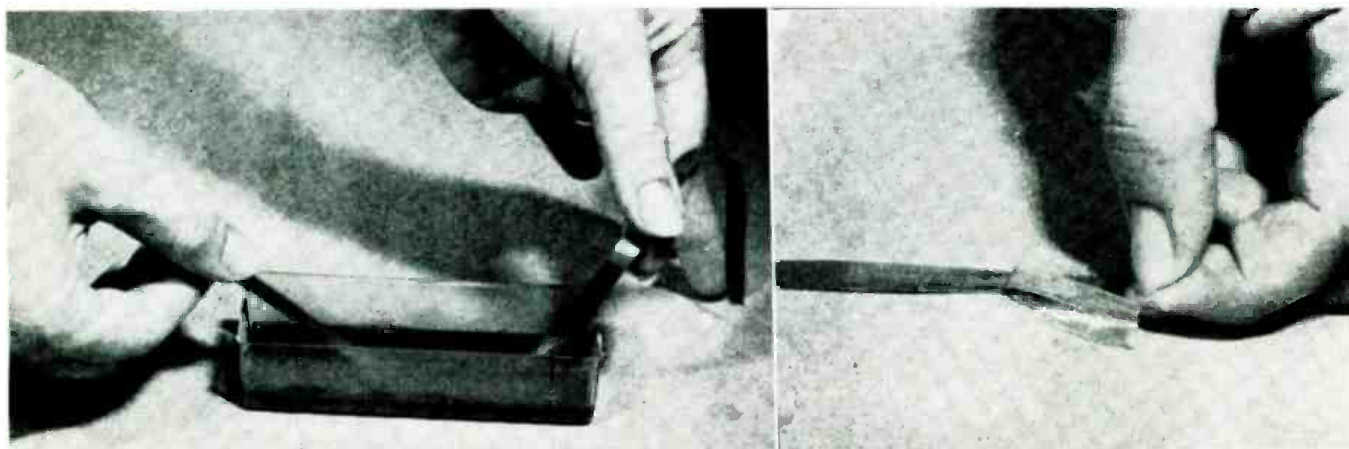
The "developing time" will vary with the strength of the signal on the tape. Too long an immersion in the

solution will pile up the iron and destroy the definition of the tracks. A few trials will show the proper time and the appearance of the track before the tape is lifted from the bath and held horizontally until the solvent evaporates.

The magnifying glass can then be used to examine the track or a piece of cellophane tape may be pressed down on it (sticky side down) and then lifted off. This will transfer the pattern from the tape to the cellophane tape. The latter may then be stuck to a glass slide to make a permanent record.

If you have photo equipment available, the strips of cellophane tape bearing the pattern may be used in the enlarger as negatives to make a photo record of the track.

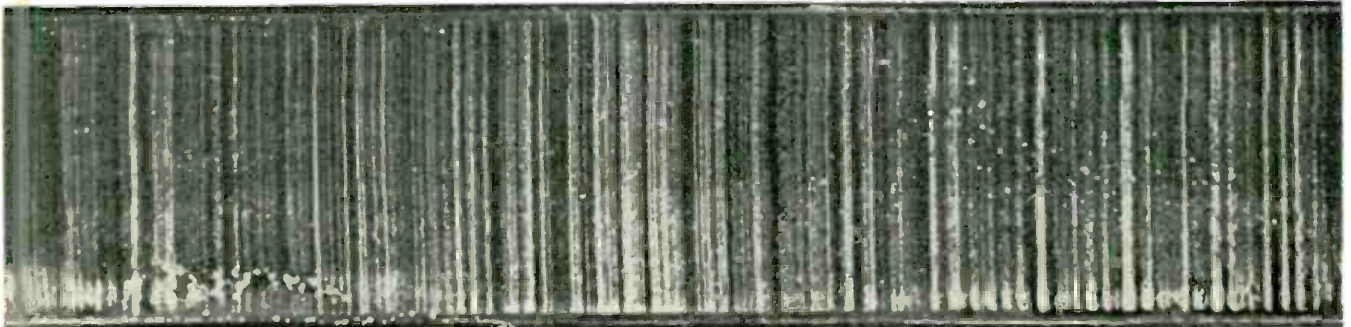
Use of this kit will enable the recorder owner to check for head alignment, track placement, head wear and also help to shoot trouble. If, for instance, the recorder will not play but it will make a visible track on the tape, this would indicate that the trouble is in the playback section. If no track is visible then the record section is at fault.



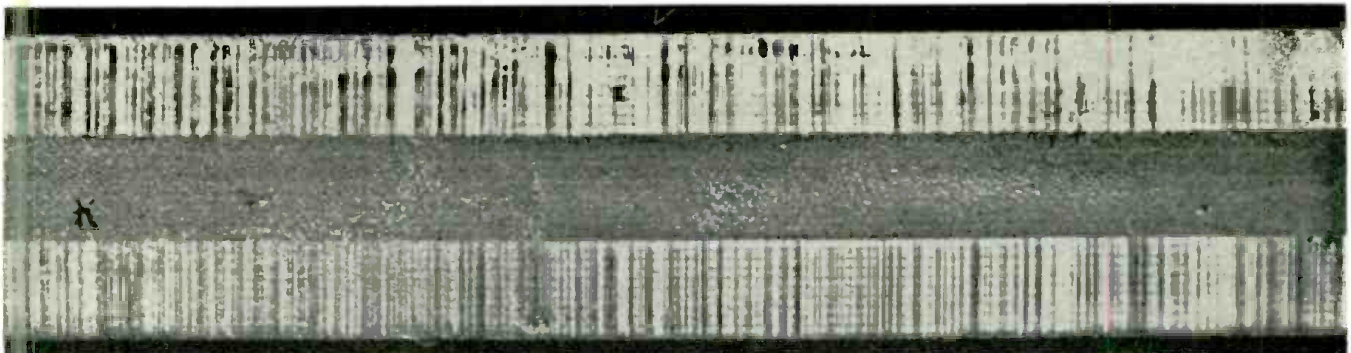
Left: to "develop" the image on the tape, a small quantity of solution is poured in the dish and the tape run through it until the tracks can be seen. Right: to make the tracks permanent, press cellophane tape on them and then lift. The tracks will stick to the cellophane tape which in turn is stuck to a glass slide. Wipe tape clean before using in the recorder or the iron particles will cling to the magnetic heads.



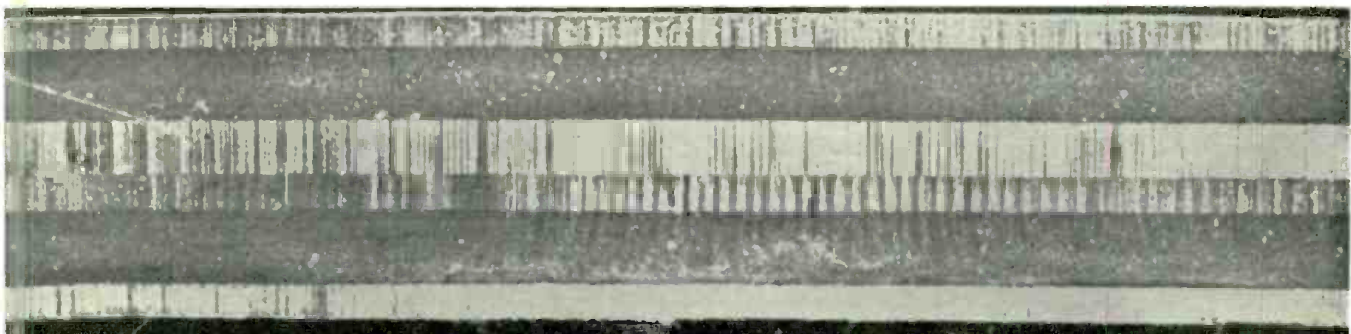
The tracks made visible by the solution can be examined using the magnifying glass furnished in the kit. The slides may also be inserted in a photo enlarger and used as a negative from which to make prints. The strips shown below were made in this fashion. They may also be put in a slide projector and shown on a screen. Visible tracks help in editing and troubleshooting.



This print shows how a full track recording of a music note appears when the track is made visible. The finely divided iron particles cling to the magnetized areas of the tape.



The strip above was made from a commercially recorded stereo tape and shows quite plainly the two tracks with the unrecorded section between them.



This track is four channel stereo on regular quarter inch tape. In this case the visible tracks indicated that the tape was not aligned properly in relation to the head for the two center tracks are touching instead of having an unrecorded section between them.

FOUR TRACK RECORDING DEVELOPED

by
Mark Mooney, Jr.



. . . improvements in heads and amplifiers has made possible the recording of four tracks on one-quarter inch tape and dual track stereo at the $3\frac{3}{4}$ IPS speed.

THE art and science of tape recording never has been a static thing. Developments and changes within the last ten years have been steady and always an improvement on what had gone before.

The early tape recorders which were "liberated" by the Allies, when they went into Germany near the end of the war, were superior to American wire recorders. The few German machines imported into this country became the granddaddies of all present day recorders.

Those early machines used full track recording and one-quarter inch tape. The fidelity was better than anything developed up to that time but even at the speed of 30 inches a second, it could not compare with present day machines.

The first recorders made in the United States were full track, 30 inch per second machines. As the frequency response of a recorder is dependent upon the tape speed and the size of the gap in the head, it was obvious that heads had to be improved. They were.

Tape speed dropped to 15 and then to $7\frac{1}{2}$ inches per second. To get more information on the same amount of tape dual track heads were developed. This advance first appeared on the home type machines, the professional machines, as they do today, stuck with full track recording.

A further improvement in heads and amplifiers meant a further drop in speeds so that today we have dual track $7\frac{1}{2}$ and $3\frac{3}{4}$ inch per second speeds on almost all recorders. Some even feature a third speed, $1\frac{7}{8}$ ips.

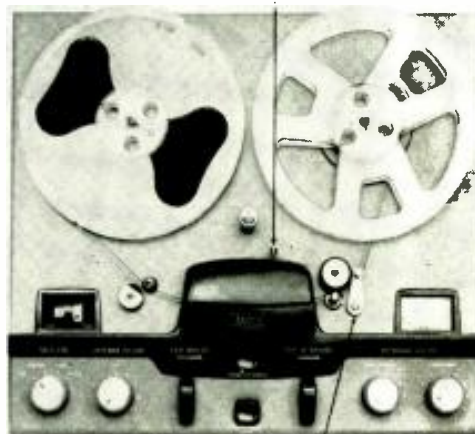
Since dual track tapes were performing satisfactorily it was a simple matter to develop stereo, which as a basic requirement had to have two complete and independent channels.

Two channel stereo on tape worked fine and it works every time. It provided the finest music reproduction that had been heard since the invention of sound reproduction.

But the ever busy engineers were not content with this near-perfect state. Continued development of heads and new manufacturing methods made it possible to make magnetic

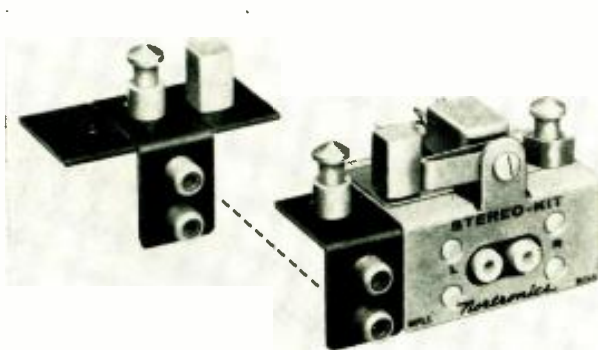


4-TRACK HEAD SHIFT
"UP" POSITION PLAYS NEW 4-TRACK STEREOGRAPHIC TAPE RECORDINGS
"DOWN" POSITION PLAYS REGULAR 2-TRACK STEREOGRAPHIC TAPES; ALSO PLAYS AND RECORDS MONAURAL TAPES.



AUTOMATIC STOP LEVER

Left: the RCA magazine machine which will play dual track stereo and record monaurally on any of the four tracks, it and similar machines are under development. Right: Ampex four track reel to reel machine which will also play full track and dual track tapes and records monaurally in dual track. Lever is used to shift head position. Top of page: new Nortronics adapter.



The Nortronics Stereo-Kit which will fit on any recorder and take either the regular stacked head or the four channel head. An erase unit for use in recording fits against the head holding bracket as shown.

able for hooking into the heads.

Also available from the same company is a four channel head which can be used to replace the head now installed in some brands of tape recorders. If this is done then an adapter would not be necessary.

However before such a head is installed, the owner should be sure that the amplifiers in his present recorder are of sufficient quality to handle the reduced output from the four channel heads. Since the recording and playback area of the four track heads is, of necessity, less than half of that on a dual track head, it follows that the electrical output from the heads is likewise about half. If the existing amplifier has sufficient gain to handle the reduced output the head may be installed and will work satisfactorily.

If the amplifiers will not handle the reduced output, then separate amplifiers may be purchased and the recorder mechanism used simply as a tape transport.

We had the pleasure of trying our prototypes of the Nortronics conversions and found them to be good pieces of equipment. The novelty of being able to do stereo re-

ording is going to add much to the tape recording hobby for the results are extremely lifelike.

A recorder equipped to record stereo as well as monaural will enable the recordist to take advantage of the increasing number of stereo broadcasts and, in addition also permit recording from standard radio and TV as is now being done.

Stereo disc records having been just introduced have not had time to be thoroughly field tested. Some are good and some are poor but the question of wearability has not been determined for any of them. Some quarters report that wearing abilities are satisfactory, others say that the grooves are worn quickly with repeated playings.

Whichever may be the truth, the practice begun years ago of taping a record when it is new and then playing the tapes instead of the discs is still a good idea. Now that stereo recording will be available without breaking the bank or flattening the pocketbook completely, it will be possible to continue this practice with stereo records. Thus it would only be necessary to play a stereo disc once to get it on tape and thereafter all playing could be done from the tape. Thus there would be no question at all about deterioration of quality as the tape would remain as good for the 10,000th playing as it was for the first.

The Nortronics recording amplifiers shown have an input for a radio, tuner or phonograph and, depending upon whether the recordist prefers the two track or four track recording heads on the Stereo Kit adapter, either two or four stereo tapes can be made of stereo broadcasts or stereo records.

Most of the stereo broadcasting which is being done today is by means of one channel on AM radio and one on FM. To record them, it would be necessary to use a stereo tuner, which contains both AM and FM facilities, or two radio sets or tuners, one AM and one FM. Each would be separately hooked up to one of the recording amplifiers which, in turn, would record one of the tape channels.

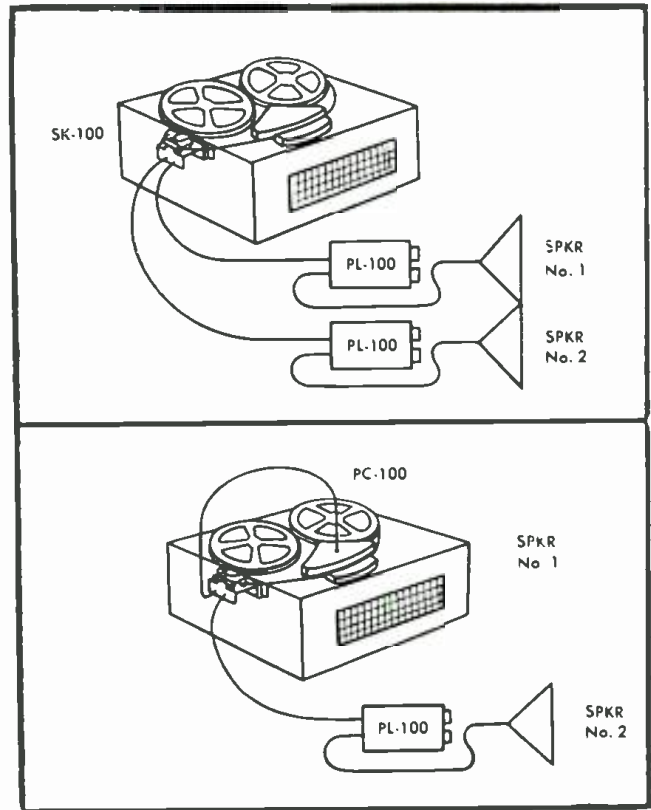
From the amount of equipment that is now available



Left: installing the Stereo-Kit is the work of a few minutes. After the bracket is screwed to the tape recorder the head unit is clipped to it. Right: because of the close tolerances involved, the tape



must travel accurately through the guides. Head position is adjusted by moving the bracket as necessary. The recorder is used simply as a tape transport.



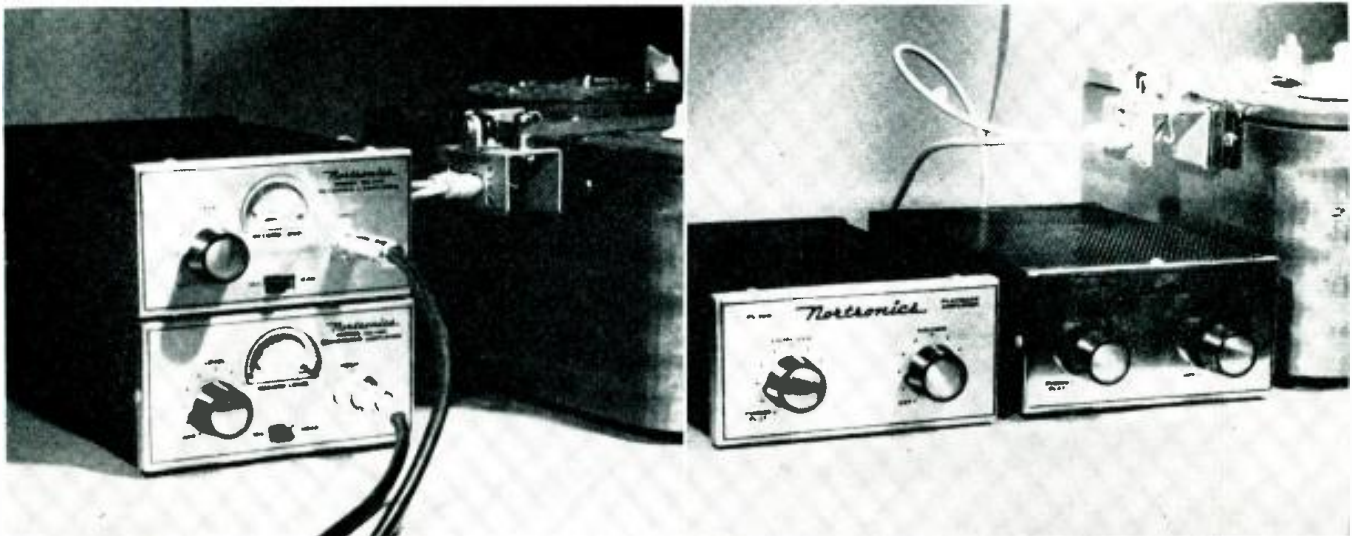
Upper left: rear of Nortronics RA-100 record amplifier. Connections include 110 v. AC outlet, Bias adjustment, Recording head input, Mon input, Hi-level input, Head current, High and low impedance erase outputs and Oscillator Synch. Lower: rear of PL-100 playback. Connections are: 110 v. AC outlet, Hum adjustment, 16, 8 and 4 ohm speaker outputs, Pre-amp output, Phono or tuner input and Magnetic head input. Right, upper: drawing shows connections from Stereo Kit to amplifiers. Lower: one channel of the head may be connected to the recorder if a jack is used to disconnect the recorder head. This permits use of the recorder as one side of a stereo system.

and that which is planned, it is evident that stereo is here to stay, and perhaps in a much bigger way than was originally thought possible.

With the use of four channel tapes at the lower speed, stereo tape prices will be not only competitive with stereo

disc prices but may actually be less. In addition, tape still retains its superiority in the field because it has no wear, no surface noise and complete channel separation.

In addition, and this is most important, *a tape machine will record* which is something no phonograph can do.



Left: Record amplifiers hooked up for stereo recording. Mike cables plug in on face of units. VU meters indicate recording level. Right: the playback amplifiers with tone control hooked up for stereo playback. Better dissipation of heat is had if units are placed side by side instead of being stacked as shown in left hand picture.



Photo by O. Rabb

APARTMENT HI-FI FURNITURE

... How to make a piece of furniture that looks like a built-in but can be transported if you move.

by W. R. Blackwell

EVERY article on built-in Hi Fi written for publication has the home owner in mind. The countless Hi-Fi fans occupying apartments have been left out in the cold. This resulted because the application has presented many problems to the tenant, the prime one being that nothing can be attached to the walls, floor or ceiling and if so it must remain as part of the building, or a questionable permission must be obtained from the landlord.

How can we have a "built-in" eye appeal, sound-perfect Hi-Fi system that avoids the building restrictions mentioned?

We hope this article will prove helpful to those who now endure the unsightly "hook-ups" and scattered appliances—including the little woman's heckling over the disorder.

First, since most apartment dwellers do not have a cellar work shop the thought of cutting and preparing pieces may present discouragement. Take it easy. The job is simple to construct and erect and of course portable, in case of moving. The design must be for containment of all units and primarily the speaker box or sound chamber. It is flexible to fit equipment dimensions as well as the amount of equipment the builder possesses.

This problem hit our house while reading every article on built-in Hi-Fi. "Cut a hole in stairwell to accommodate television." "Use cellar stair well for speaker set up." "Cut through wall of closet for phono installation." With visions of our landlord suing us for vandalism, we discarded each article and its suggestions since they painted a picture mentally of our future residence being very much like a

tent. Here is how it all was aggravated:

"I just don't see why you can't build a complete Hi-Fi in this apartment instead of having all this junk scattered all over my living room."

This from my wife was fightin' words. Especially her reference to my pet "amps" as junk. I went on a local safari of our living quarters and had decided most any blank wall would do when the alcove just off our living room just screamed the location. This floor plan was for us fortunate, but any blank wall will suffice.

"Well let's build it," said the little woman. That is one of her best statements. "Let's paint the kitchen! Let's make a coffee table!" "LETS? Who does it? ME.

The first step was to choose a material that would be easy to work and with the least sawing trouble and be decorative so that our "built-in" could be constructed on the spot. After referring back to construction ideas of lucky home owners, we selected "NOVAPLY" or chip wood made of pressed shavings, sawdust and plastic binder. It is $\frac{3}{4}$ inches thick and has a standard width of 17 inches as we found it. This stock size is ideal. In checking prices I had quotes of 37¢, 31¢, and finally 20¢ per sq. ft. It lists at 45¢. Our plan called for one piece of 6 ft. length x 17" split in half making 2 pieces $8\frac{1}{2}$ " x 6' for the side walls. The lumberman was willing to rip this long cut. All additional cutting is made directly across the 17" width as supplied.

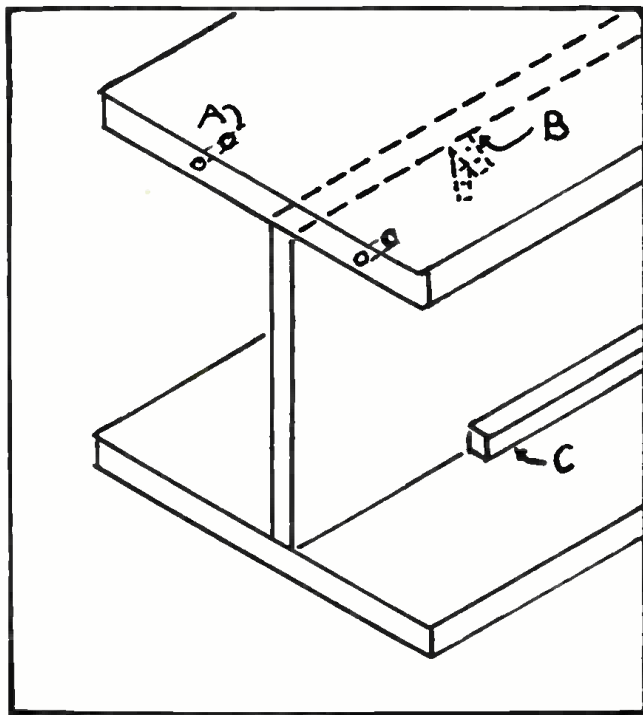
Our chest is up. For an amateur designer, there was very little waste of material. The 17" width is perfect for TV, Tape Recorder and Phonos.

We started with the base or foundation sheet of course. A piece of Novaply $7'4"$ long makes the platform or base plate. This is supported by 2 U shaped pieces, or legs, made of 2 x 1" standard wood stock. The top of each U is screwed to the Novaply sheet just mentioned. To the front side of this base sheet we screwed a $1\frac{1}{2}$ x 2" strip of wood flush with the front edge. This is the upper back plate for the sliding panels track and also acts as a support for the U shaped legs.

The legs of each U are 2' long which brings your platform 2 ft. $\frac{3}{4}$ in. above floor level. Just right for TV viewing. To each of our lengthwise cuts of $8\frac{1}{2}$ " widths, we attached a full sheet of 17 in. Novaply 6 ft. 8 in. long using angles and screws. The narrow sheet we butted against the large sheet. Allow the rough edge of larger sheet to be to the front. This is later covered with molding. A similar section is made for the other side wall. (If your design is larger than that shown here, add another full sheet 6 ft. 8" at one or both sides to inclose the wells if one side is not against wall.) This construction can be made on the floor and then set on the base or platform later. Use long screws through the large sheet into the edge of $8\frac{1}{2}$ " sheet for more solidness.

Between these walls the top support is made of 2- 6 ft. and 2- 15" strips of 2 x 2 wood. The 15" strips are screwed to each top of side wells and the 6' piece is attached to these. This also can be assembled on the floor and mounted later when you raise the side wells. This acts as support for each side well and the speaker cabinet front.

This support is attached to the top of the well sheets. When well sections are in place the main sections are finished. All dimensions are flexible according to your ceiling height and wall width but start from the left hand well and measure off compartment widths as desired. Our



Drawing shows how shelves are put together. At "A" is shown how the screws are toed-in to come out in the middle of the shelf board. Holes should be drilled. At "B" an angle iron is screwed at the bottom center of each shelf $12\frac{3}{4}$ " from the front edge. The wood block at "C" is 1" x 1" x 8" set $12\frac{3}{4}$ inches from the front edge. This simple construction is used on all shelves. Remove one screw and each section comes apart. The screw which goes through the back panel into the wood strip should have its center $\frac{1}{4}$ " from bottom.

first section space was for a recorder. If you plan to use a tape recorder, measure its width. If you plan to use phono measure its width. Allow 2" on either side of the unit for easier pull out and slip clearance. Using this decided measurement, place a line on the base platform square with the side well. (It is a bit late to tell you, but you will need a saw, screw driver, drill, hammer and some small nails or brads and screws, a ruler and maybe a square since crooked cuts won't work at all.)

Two panels 5 ft. 4 in. x 7" are readied. One of these is mounted upright using the first measured line as a foot guide. A wood stop of $1\frac{1}{2}$ x $1\frac{1}{2}$ " is screwed to base plate at the line and panel is raised and screwed to this stop flush with the base front edge. Another stop can be used on opposite side to hold panel upright. Pre-drill all screw holes in Novaply as it is a hard material. Next cut 2 pieces of Novaply 17 x 17" unless your unit calls for greater width. One is our door, the other the platform for amp. unit. (If you have different amplifier widths cut accordingly or if no amplifier is placed as we did it, use as floor board for first knick-knack shelf.)

Pre-drill 4 holes, 2 on each side, $\frac{1}{4}$ inch in from edge of these platform bases on an angle so that they emerge in the center of the edge. These holes will permit two screws to enter the wall of the side well and on the other, two screws will enter the $5'4"$ upright divider panel. This move holds platform in place. Height of the phono or recorder unit plus 5" for top clearance spots the height of this shelf. $12\frac{3}{4}$ inches to the rear of this platform we mounted a 1 x 1" strip of wood parallel with the front edge. This is for anchoring the back panel. Cut 15 " x 17 " from Novaply.

To the under side of each panel platform we also mounted a metal angle strip $1\frac{3}{4}$ " from the front edge with screw holes to the rearward leaving the flat of the angle to support our rear panel as a buck up. This procedure was followed on all platforms. As seen from photo, spacing of each unit is according to your own desire or to the measure of your components.

A small screw, countersunk $\frac{1}{4}$ " from the bottom of each back panel and screwed through panel into the base strips holds each rear panel in place.

Each door of the closed compartment is mounted with a piano hinge and Gov. Winthrop desk brackets as supports, so that units may be drawn downward and have a solid resting shelf when desired. We had a console television. The chassis and picture tube were removed with care and the tube cushioned on a soft towel away from the work area for safety. Taking the console cabinet apart was a simple operation in our case but use care. A chisel, hammer, saw and screw driver are needed for this work. As all consoles except the metal cabinet type are glued together and are thin plywood, open the seams by working slowly along each side joint and open up the cabinet. If you have a table model the problem is more simplified. Just mount the whole unit but space shelvings according to cabinet dimensions.

We wanted the sides of our TV console cabinet, which were now of no use, for the sliding doors in the bottom section which makes a grand storage compartment. Thus the disassembly of the cabinet.

Mount the TV next to the first upright divider panel you set up. We used the front section of the old console to support the picture tube. Before you place the TV in position, bore a series of holes or cut out a section of the floor under the TV compartment, covering it with large mesh wire, for ventilation. Now set the TV and erect another divider panel like the first one set up. Next a base panel or shelf for knick-knack section is placed above the TV as you did over the recorder or phono unit. From here on, each compartment is made as the first but with dimensions to fit your needs.

The two side wells along with the upright divider panels, support the speaker compartment. This compartment we did not line or baffle. After cutting out holes for speakers we covered the front top panel thus made with cloth for decorative effect. Incidentally, the upholstery department of better stores can save you money with remnants galore to choose from. We also covered the bottom sliding panel doors with the same cloth to match. We use 2- 12" speakers mounted to outer sides and 2- 8" speakers in center as tweeters with cross-over networks connecting them. The feed lines from all speakers go to selector switches for connecting control to amplifier, TV, or recorder playback. Our sound, according to a visiting sound engineer, was claimed by him to be out of this world and "surprising," to use his words. In studying the set up he marveled at our use of closed resonance chambers.

Frankly, we had no intention of their use except the top speaker section. I am not versed in the intricacy of acoustics. He claimed the wells created by the construction acted as "stopped resonance areas complementing lower registers through vibratile continuity"—whatever that means.

He totaled the cubic foot area of these closed areas and found the back well of center section as near 24 cu. ft., 21 cu. ft. in the side wells or "stopped" resonators and

24 cu. ft. in the speaker compartment. All he claimed accounted for the sound balance. The speaker cabinet has a base, a back and a front panel. The ceiling acts as top and the two side wells as sides.

All edges of Novaply that are exposed are finished by using wood screen molding on the rough edges. Small $\frac{1}{4}$ round molding is used in each compartment as corner finish. Before placing molding, cut it to size. It can be fastened on with plastic cement or small brads (easily withdrawn if dismantlement is necessary). We also used clear plastic varnish on the Novaply to retain its natural finish. All molding was painted with copper and gold powders mixed in some of the clear plastic. On the TV and Amp. panels we used about 10 coats of this bronzing mix and as each coat set we pulled it with the brush. This produced a hammered gold finish.

A $\frac{1}{2}$ x 4" strip was laid inside the base on the floor full length for the sliding doors. Strips of wood $\frac{1}{2}$ x $\frac{1}{4}$ are nailed to this base to form grooves into which the panels fit. Wax the grooves and you have smooth sliding panels. Remove the bottom locking screw from the back panel to the right of your built in TV and you can make adjustments when necessary. For a table model, just pull out.

The front kick plate is screwed to the inside floor base-board and acts as a hold for front sliding panels. The TV speaker can be removed or disconnected and the wires run to selector switch for feed to the top speakers at will, or for tape recording, etc. The set-up as shown is ideal for stereophonic reception as there are two sound channels available, speaker connections can be split by setting proper switch positions and of course AM and FM tuners can be fed to individual speakers.

To dress up the front side, the bottom slide doors, and under the side wells, 2 pieces of Novaply 8" x 18" were cut to fit base board and wall of building. They were attached at the top to the main base panel and at the bottom to the kick plate and finished with molding. Where this whole installation is set against flat wall space and no side walls are available, dress off the ends with half round knick-knack shelves of your own design.

DIMENSIONS

Base 7' 3" long, 17" deep. Ht.—floor to ceiling.

Sliding panels 20 x 36 inches. 2 needed.

Kick plate 7' 3" x 4".

Top finish strip for sliding panels. $2\frac{1}{4}$ x $1\frac{1}{2}$ x $\frac{1}{4}$ "—6 ft. Stock strip molding.

Legs— $1\frac{1}{2}$ x 2". 2- 2 ft. and 2- 15" lengths.

Upper support for panel doors $1\frac{1}{2}$ x 2" x 7'4" long.

Speaker cabinet 6' x 17". 3 pieces needed, front, bottom and back.

When completed this gives the appearance and performance of a built-in installation. Assembled entirely with screws it can be taken apart and re-assembled when need arises. Remember that two additional 17" pieces of Novaply will be needed on outside of side wells to close in wells when side walls cannot be used to close them. This is important to maintain their resonance. Attach any shelving from here on.

Complete unit, as shown in picture, contains 2 tape recorders, TV, 2 amplifiers, controls, FM receiver. Phono is in bottom compartment. Speakers located at top avoid vortexing to listener positions. Can be tilted up or down according to personal likes in listening or for ricochet when setting speaker panel. Ours are perpendicular.

BLIND SCIENTIST RECORDS EARTH SATELLITES

. . . Haverford College professor records all Sputniks with special gear.

PROFESSOR Thomas A. Benham of Haverford College, Pennsylvania will never be able to see the earth satellites for he is completely blind. Yet he has made excellent recordings of all of them on tape.

These tapes are now being made available to the public or the reproductions may be had in the form of a 10 inch LP disc.

Professor Benham is no stranger to tape. For many years he has been the moving factor in making available to other blind scientists the latest scientific information by recording it on tape so that they may listen to what they are unable to read. At present he has between four and five hundred subscribers to this service. In addition he also puts out a monthly science magazine on tape giving highlights from the scientific world.

Professor Benham is a lecturer in Physics at Haverford College and specializes in electronics. With this background he was able to rig the special equipment necessary to make the recordings of the satellites.

The recording includes all the satellites up to and including Explorer III. More than just a recording of the signals from the satellites, each is explained and the Doppler effect, through the use of which the speed of the satellites could be measured, can be plainly heard.

He began the recordings on October 4, 1957 when the Russians sent up Sputnik I which was 23 inches in diameter and held two radio transmitters, one sending on 20 megacycles and the other on 40 megacycles. This first earth satellite plunged to its fiery doom on January 4, 1958. No one in this generation will forget the consterna-

tion it caused around the world.

The second satellite, Sputnik II, was fired on November 3, 1957 and had a weight of 1100 pounds. This represented a mastery of technical competence which set both the scientific and military worlds buzzing. It also carried the dog Laika who lived for a week. Like its predecessor it too came down in flames. Its career ended April 13 of this year.

The first U.S. effort to be successful was Explorer I which was launched from Florida. The satellite weighed about 30 pounds and did not broadcast in the 20 and 40 megacycle ranges as had the two Russian Sputniks but, instead, used the 108 megacycle frequency. This put it outside the range of most of the world's short-wave receivers unless converters were attached to extend their range.

Explorer II got off the earth but failed to orbit when the fourth stage rocket failed.

Vanguard I was launched March 17, 1958 following some heartbreaking failures. While the satellite weighed only 3.2 pounds, it contained two transmitters, one battery operated and one energized by solar cells. It was the farthest out of all the satellites with a maximum of 2500 miles and a minimum of 400 miles. It is expected to be up for ten years.

Explorer III, launched March 26, was the first satellite to contain a tape recorder but the orbit was unstable.

All these are recorded and explained on the tape which is on a 5 inch reel, dual track at the 7½ inch per second speed.



Professor Thomas A. Benham at the radio and recording gear he used to record all satellites through Explorer III. The Russian Sputniks broadcast on 20 and 40 megacycles, the American satellites on 108 megacycles. Professor Benham is totally blind.

TAKE YOUR MUSIC OUTDOORS

... piping music outdoors is becoming increasingly popular and enhances listening pleasure.

by
Bart Pierson

WITH today's emphasis on outdoor living, the sound should be moved outdoors along with the cooking. Extension speakers fed from indoors need only be connected to the tape recorder or other sound source to provide music in the outdoor area.

Stereophonic sound from tape is brilliant outdoors. Without the reflective difficulties sometimes encountered in rooms, the sound outdoors is clear and clean. Speakers for stereo should be spaced farther apart than indoors, especially if at a greater listening distance. They may be concealed in woods or shrubbery so that the source of the music is hidden and might be compared to an orchestra



Permanently mounted garden speaker. Outlet box shaft extends into ground to hold speaker upright. Buried waterproof cable is run underground to speaker location.



Weatherproof garden speaker suspended overhead from a tree limb. Speakers may be fed from any sound source to bring the music or other program material outdoors.

playing in the distance.

Anyone who has not tried piping the music outdoors has a real acoustic treat in store for them, especially if the music is stereo.

Up to now the only type of horns available for outdoor use have been the regular public address type which are waterproof and may safely be left outdoors but which sometimes leave something to be desired in the way of fidelity.

Newest item on the market in outdoor speakers is the unit shown here which is specifically made for garden use. Resembling a giant mushroom, although on a thinner stem, the speaker is weatherproof and is available in either a portable model with a base stand or fitted for permanent outdoor mounting. A second portable unit has a spike on the bottom of the "stem" which can be pushed in the earth to hold it upright.

If desired, the unit may be hung from a tree branch. As the sound spread is 360° there is no need to beam the speaker in any direction. Accessories such as waterproof cable for burying underground, outlet kits, etc., are also available. The speakers are made by the Shalda Manufacturing Company and list for about \$40.

If desired, the tape recorder itself can be brought outdoors near the scene of the festivities in which case a long extension cord will be necessary if no outdoor source of line voltage is available. If a cord is used make certain that it is heavy enough to be able to deliver the full amount of current required. A small cord will drop the voltage and will not provide enough current to properly work motors and amplifiers.

If lines are strung overhead in trees, to be left there permanently then care should be taken to allow enough slack to provide movement for the tree in a wind without imposing strain on the line. If possible avoid driving nails into trees and, if you must, make sure they are galvanized.

A thick steak charcoal broiled over an open fire tastes wonderful—and music piped out of doors sounds as good as the steak tastes. Try it.

STEREO SECTION

NEW TAPES

By Georgie Sigsbee

CLASSICAL SYMPHONY CHAUSSON

Symphony in B-Flat, Op. 20
Detroit Symphony Orchestra
Paul Paray, Conductor
MERCURY MD55-26
\$12.95 ... 30:35 mins.

But for his untimely death at age forty-four, Ernest Chausson might have gone on to make a greater mark in the world of music. As it was his pen produced along with other compositions but one symphony which is most tender and lyrical. The three movements are filled with lovely strings and horn passages. The conversations between sections of the orchestra are a delight via stereo. There is a Brahms-like quality to the entire composition. Oddly enough both Chausson and his mentor, César Franck, each left but one three-movement symphony for the world to enjoy.

In six years Paul Paray has done a wonderful job in shaping up the Detroit Symphony. Under his direction this performance of the Chausson is one of the best I have heard and *Mercury* has accorded it excellent reproduction.

CONCERTO KHACHATURIAN

Concerto for Piano and Orchestra
Leonard Pennario, Piano
Concert Arts Symphony Orchestra
Felix Slatkin, Conductor
CAPITOL ZF-52
\$14.95 ... 36:06 mins.

Rich in exotic, colorful harmonies and rhythms of Khachaturian's native Armenia, this Concerto is delivered with power and virtuosity by Pennario. Slatkin and The Concert Arts Orchestra collaborate in a highly commendable manner.

Excellent balance is maintained between solo instrument and orchestra. Stereo reproduction is crisp and bright.

ORCHESTRAL MENDELSSOHN

Overture and Incidental Music from
"A Midsummer Night's Dream"
Philadelphia Orchestra
Eugene Ormandy, Conductor
COLUMBIA HMB 16
\$11.95 ... 24:50 mins

A superb reading of lustrous quality. The translucent string work weaves an enchanted musical fairyland from beginning to end.

Besides Ormandy, the engineers waved a magic wand too!

TCHAIKOVSKY

Excerpts from *The Sleeping Beauty*
Prologue: Introduction and March; Pas de six
Act I: Waltz
Act II: Farandole; Panorama
Act III: Polacca; Pas de quatre; Pas de quatre (Adagio, Cinderella and Prince Fortune, Blue Bird, Coda); Pas de caractere; Adagio; Coda; Finale and Apotheosis
London Symphony Orchestra
Pierre Monteux, Conductor

RCA GCS-151
\$18.95 ... 42 mins.

A masterful performance conducted with notable spirit and charm. This rates in the upper echelon of recorded extracts of this ballet.

Vivid concert hall sound which should sweep you off your feet and into a seat right up front in the orchestra.

STRAVINSKY

The Firebird
Introduction, Dance of the Firebird, Round-Dance of the Princesses, Infernal Dance of the Demonic Magician Kashchei, Lullaby, Finale
Petrouchka

Russian Dance, In the Cell of Petrushka, Mardi Gras Fair, Nursemaids' Dance, Russian Peasant with Bear, Gypsies and a Rake Vendor, Dance of the Coachmen, Masqueraders
Berlin Philharmonic Orchestra
Leopold Stokowski, Conductor
CAPITOL ZF-49

\$14.95 ... 37:17 mins.

Kaleidoscopic music rendered a dynamic performance by Stokowski and the Berlin Philharmonic and blessed with topnotch stereo sound. A first-rate recording.

LIGHT CONCERT MUSIC FOR AN EVENING MOOD

Granada
Ballad of the Rose
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The Wedding Waltz
Anna Polka
Little Vienna March
The Girl in Satin
The Gainsborough Waltz
The Toy Soldier
Tango of the Bells
Spanish Fiesta

LIVINGSTON 1102 F
\$11.95 ... 30:24 mins.

Lilting orchestral arrangements of a musical potpourri furnished by a skilled, but nameless, orchestra. Gay "salon" music rendered without excess styling thus making the entire half hour thoroughly palatable and most pleasant. Almost like having your own private gypsy-like orchestra.

Excellent reproduction.

HYMNS

THE HOLY CITY
Bless This House
The Lord's Prayer
Just for Today
The Holy City
The Penitent

Tapebook #2

HOW'S YOUR HEARING?

by James M. Loing

Are You Getting The Most Out of Your HI-FI or Stereo?
Can You Understand Speakers? Hear Lyrics Plainly?

Protected hearing is the key to your listening enjoyment.

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

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

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

Test your hearing . . . and be sure!

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

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full direction booklet

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Severna Park, Md.

The Prayer Perfect The Palms

Jerome Hines, Basso
Concert Orchestra and Choir
Paul Mickelson, Conductor
RCA CPS-114

\$10.95 . . . 24:30 mins.

Jerome Hines, who lends his rich voice to both underprivileged (the Bowery) and privileged patrons of the arts (Metropolitan Opera), is heard on this record in some familiar sacred classics and hymns. His sincerity is evident throughout but it is in the title song that he reaches a peak of vocal expression. Our family went around the house singing these anthems along with the recording artists.

The balance between soloist, the choir and orchestra is all right but I found myself wishing Mr. Hines had performed these selections with but an organ to accompany him.

POPULAR

THE ROARING FLIRTY 30's Vol. I

The Object of My Affection
Got a Date with an Angel
My Heart Belongs to Daddy
You Must Have Been a Beautiful Baby
Three Little Fishes
Oh, Johnny! Oh, Johnny! Oh!
The Very Thought of You
Cheerful Little Earful
Music, Maestro, Please!
Shuffle Off to Buffalo

Enoch Light and the Light Brigade

GRAND AWARD G.A. ST-3

\$9.95 . . . 27.5 mins.

As a companion to its "Roaring Twenties" series, Grand Award now presents this collection of tunes to recall to us the next decade. Enoch Light and the Light Brigade have done a fine job playing these old

favorites in the authentic style of that era, quite reminiscent of how they sounded when played by our favorite orchestras of that day. Technically, the recording is excellent, and if these don't happen to be your favorite melodies of the thirties, you can look forward to further releases in this series. J. L.

THE BEAT OF MY HEART—

TONY BENNETT

Let's Face the Music and Dance

Let There Be Love

So Beats My Heart for You

Love for Sale

Blues in the Night

Lullaby of Broadway

Let's Begin

Just One of Those Things

COLUMBIA GCB 20

\$10.95 . . . 20:30 mins.

Bennett's original idea behind this album was to have just the beat of the drums with his voice. As things developed and nurtured trombones, bass, piano, trumpet, vibes, and flutes were added. However, the beat is still predominately percussive as Bennett roars along with his fine vocalizing.

The lineup of artists is quite good. You'll hear such drummers as Jo Jones, Candido, and Art Blakey; Kai Winding on trombone; Herbie Mann, Vin Vittorio playing flutes; Al Cohn blowing tenor sax; Eddie Safranski and Milt Hinton on bass as well as other fine musicians.

Devised and produced by Bennett in partnership with pianist, arranger, conductor, Ralph Sharon, this is a very good recording. The sound has depth and width but here again, as in so many recordings of late, the voice is miked in the blown-up echo technique. One way to keep Bennett from being drowned out by the drum-though.

MISCELLANEOUS

CONCERTAPES STEREO STARTER SET

Silk, Satin and Strings—Sorkin Strings
Jalousie, Sleepy Lagoon, Holiday for Strings, From This Moment On, Laura, Fallin' in Love with Love (15:20)

Big Beat with Mike—Simpson and Band
Take the "A" Train, One O'Clock Jump, Cherokee, After You've Gone, Lover, "C" Jam Blues (16)

Lighting the Torch—Norman Quintet, Vocalist Wright

There's a Small Hotel, It's Alright with Me, Take Me in Your Arms, Taking a Chance on Love, Moonlight in Vermont, Thou Swell (14:56)

Symphony of Dance—Musical Arts Symphony

Dance of the Clowns—Rimsky-Korsakov
Valse Triste—Sibelius

Minuette from L'Arlesienne Suite—Bizet
Russian Sailor's Dance from "Red Poppy"—Gliere

5 inch reels, Value \$32—Price: \$19.95
61:30 mins.

As its label signifies *Concertapes* has produced a neat little package of various musical selections which will help start the beginner or, for that matter, fill in some gaps in more extensive tape libraries.

Album #1 is served up in a smooth style by the Sorkin Strings. Makes for easy dancing or relaxed listening. You'll hear not only the "singing strings" but additional orchestra voices such as the piano which is featured in "Sleepy Lagoon" and the "Holiday" which is taken by a glockenspiel (?!). Then follows an uptempo Latin beat to "From This Moment On." Vety fine reproduction.

Mike Simpson and his Big Band rock out on "Take the 'A' Train" and highball it on the musical track all the way.

Of all four reels this is the one which in my estimation falls short insofar as reproduction. The recording is not as sharply defined as it should be. Some of the solo work seems close in while other soloists seem to perform behind a curtain. The same effect exists within the orchestra; i.e. at times the brass, etc., is way, way gone. Although the overall sound is spread out and reverberant, the engineering just doesn't come off as it could have . . . at least for my taste.

The combination of the Norman Quintet and Nancy Wright is satisfactory but once more it is with the technical aspect I find fault. When singing her two numbers Miss Wright seems to be on Cloud 9. I have arrived at the point where I feel echo effects may be fun to hear in the mountains but it is not particularly attractive to "blow up" the human voice . . . well, at least not to extreme.

The final reel is a happy interlude of light orchestral works effectively played by the Musical Arts Symphony Orchestra conducted by Leonard Sorkin. Fine stereo engineering.

Watch your listings on the back of the albums. You may wish to number them in order on the back of the box as there is no label on the reels to guide further.

These releases come in an attractive box and are certainly most appealing both as a mixed musical "concert" as well as a money-saving venture when adding to your tape library.

“YOU-BE-THE-EDITOR” CONTEST

Here's your opportunity to make up an issue of TAPE RECORDING. What articles, what departments would you include? For the best suggested list we will award 30 reels of tape. Second and third prizes, too. CONTEST CLOSES AUGUST 1, 1958. ENTER TODAY—IT'S EASY AND IT'S FUN—

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5—RCA, 5—Scotch,
5—Sonoramic

2nd PRIZE

18 REELS OF TAPE

3—Audio, 3—Irish, 3—Reeves,
3—RCA, 3—Scotch,
3—Sonoramic

3rd PRIZE

6 REELS OF TAPE

1 each, Audio, Irish, Reeves, RCA,
Scotch, and Sonoramic

EASY RULES

- 1—Make up an issue as you would like to see it. Titles should be descriptive of article rather than clever.
- 2—List the departments or regular features that you feel should be in the magazine. You may list existing features, such as New Products, Questions and Answers, etc. or new ones you would rather see published.
- 3—Answer the few questions in the blank concerning your own recording activities.
- 4—Contest CLOSES midnight August 1, 1958 and all entries must be postmarked no later than that. Address entries to: Editor Contest, Hi-Fi Tape Recording, Severna Park, Md.
- 5—Decisions of the judges will be final. Awards will be announced as soon as possible after the closing date.

ARTICLES (please print or typewrite)

1 _____
2 _____
3 _____
4 _____
5 _____

DEPARTMENTS OR REGULAR FEATURES:

Do you own a recorder? Yes No

Brand

What is principal use for your recorder?

Will it play stereo tapes? Yes No

Do you buy stereo tapes? Yes No

Are you interested in stereo recording? Yes No

Name _____

Address _____

City _____ Zone _____ State _____

NEW PRODUCT REPORT

STA **F**OKSTED



FILMAGIC PYLON

... cleans and lubricates tape and film as it runs through machine

THE Filmagic Pylon is a device built to restore the lubricating qualities of the tape and, at the same time, to help keep it clean by wiping away dust and oxide particles.

The unit consists of a central core containing silicone impregnated cloth. A small "window" permits filling with the activating solution, called "Re-loader" fluid and then a cloth sleeve is slipped over the shaft. The fluid is transferred to the sleeve which in turn wipes it on the tape.

The unit is available in two forms, one with a suction cup on the bottom for mounting on recorder decks and

the other with a flange for screw mounting. Either may also be mounted on a motion picture projector to lubricate movie film.

The suction cup unit may be mounted permanently by applying a drop of cement to the bottom of the suction cup if desired. Otherwise, merely moistening it is enough. It should be placed between the pay-off reel and the heads so that the tape oxide surface can pass over it freely.

If there is not enough room for the suction cup, the flange mounted bracket may be used, holding it in place with a screw.

Product: Filmagic Pylon Kit

Manufacturer: Distributor's Group, Inc., 204-14th St. NW, Atlanta 13, Ga.

Price: \$2.95

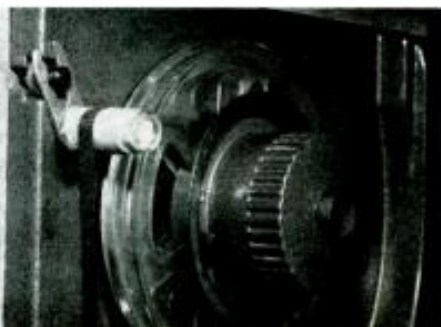
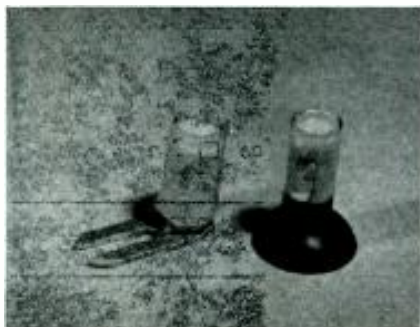
To activate the material, the fluid is fed drop by drop into the window of the upright portion. When the material inside assumes a mottled appearance, enough fluid has been used. *Very important*—do not use too much fluid!

The sleeve is then put over the pylon and pressed slightly with the finger over the window spot. This will transfer some of the fluid to the sleeve. The unit is now ready for operation.

Avoid excess. If too much is used the silicones may affect the operation of the capstan and pressure roller. The amount transferred to the tape will not be visible.



Fill the pylon with fluid sparingly until it assumes a mottled appearance. Too much will cause over lubrication of the tape.



Left: The pylon is available in flange mounting or with a suction cup base. Center: the tape should pass over the sleeve squarely and evenly. Sleeves should be replaced when dirty. Right: the flange type mounted on a professional recorder.

FOR YOUR AUDIO BOOKSHELF



YOUR TAPE RECORDER

by Robert and Mory Marshall

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

5 1/8" x 8", cloth bound, 288 pp. Illustrated.
\$4.95

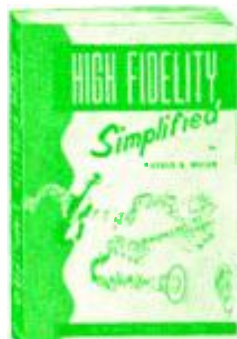
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by Harold D. Weller

This book has sold more than 65,000 copies and is one of the most popular books on the subject. It covers the How, What, Why and Where of Hi-Fi. Sound, Acoustics, The Simple Loudspeaker, The High-Fidelity Loudspeaker, Loudspeaker Enclosures, The Basic Amplifier, The Amplifier, The Record Player, Tuners, Use of a Home Music System, and Tape Recorders. It is illustrated with numerous drawings, charts and pictures. While authoritative, it is written in an easy-to-read style.

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Severna Park, Md.

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TAPE EXPERT



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