

# audio record

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The new "Multitape" magnetic tape duplicating machine in process of loading by Dr. F. Rawdon Smith, president of Rawdon Smith Associates, Inc. Story on page 2.

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# "Multitape" System for Tape Copying Announced by Rawdon Smith Associates, Inc.



## New Tape Duplicating System Permits Quantity Reproduction of Recorded Tapes at Low Cost and Without Loss of Quality

Most tape users who have had access to two tape recording mechanisms simultaneously have tried the experiment of recording a tape on one from a "master" played back on the other. Oftentimes, the results of such an experiment are remarkably satisfying and, particularly where equipment of limited frequency response is used for the final listening, it may even be difficult to tell the copy from the original tape.

Where home recorders are used, such satisfactory results are most often obtained where both sets of equipment are in good condition and where the recorded material is such as to be relatively undisturbed by small transient changes in pitch, i.e., wow and flutter. Where a piano or organ recording is involved, however, the results are usually less satisfactory, since both these instruments are capable of giving out sustained notes of remarkably constant pitch and will hence sound unnatural where a pitch variation is introduced in the process of reproduction.

Magnetic tape, however, is used for the original recording for virtually all present day commercial discs which are produced by re-recording from the master tape—so there would seem no impossibility in producing tape copies by the use of a similar re-recording process, provided both the play back and the re-record tape mechanism are in proper adjustment. The cost of

producing copies in this fashion, however, is high and when an attempt is made to lower this by the simultaneous use of several recorders coupled to one play back mechanism, a number of difficulties become apparent.

In the first place, it is difficult and expensive to maintain many recorders in first-rate order. Secondly, even when recorders of identical manufacture are used, the bias frequencies will vary by an amount which is often sufficient to cause "birdies" in the final tapes. If this is overcome, either by the use of a common bias oscillator or by synchronizing several oscillators, there remain such problems as increased wow from master to copy and—particularly important for broadcast use—slight differences in timing between the master and copy and between one copy and another, as a result of very slightly differing tape velocities on different machines.

All the foregoing difficulties, and others with which those who have tried "multiple dubbing" are well familiar, were in the minds of the co-developers of the Multitape machine pictured above. The mechanical arrangements of this machine are the brainchild of L. S. Toogood of the Toogood Recording Company, 221 North La Salle Street, Chicago 1, Illinois. A common, large diameter mandrel is used to drive all the tapes involved, both master and "slaves", powered by a large synchronous motor. This mandrel holds the speed of master and copies so closely that the latter are to all intents identical in length with the former, and hence pose no timing problems in broadcast use.

But the problems of tape duplication by this process do not end with the evolution of a satisfactory mechanical design. On the electronic side, the problem of providing bias for as many as ten channels means the design of an unusually high-powered bias source. Equalization problems also differ from those in a plain recorder, since the higher tape velocity which most duplication systems employ means that both low and high equalization must be designed on a wave-length basis and will therefore depart materially from that used at standard tape speeds.

Yet another very difficult problem in the tape duplication field is that which results from the fact that not all play back heads on all play back machines are always in perfect alignment! In the machine pictured, a novel arrangement has been introduced to make the duplicate tapes relatively insensitive to minor play back head misalignment.

The equipment shown is installed in the laboratory of Rawdon Smith Associates, Inc. of Washington, D. C., who developed the electronic equipment which is utilized. It has been exhaustively tested for fidelity of the duplicate to the original, for freedom from introduced harmonic distortion and, in particular, for any increase in wow produced by the duplicating process. In this latter respect, the machine is particularly successful, a matter of importance since, however insensitive the average listener may be to degraded frequency response, or even to moderate harmonic distortion, he readily perceives (even on a \$10.00 radio) that his music is "canned" if sustained piano notes, for examples, have a pitch waver.

Many tapes made on this machine have now been used by broadcasters, by educational institutions and by the U. S. Army, which broadcast a Christmas message to all troops overseas by "Multitape." The most influential local radio station paid the process the most welcome compliment of all by broadcasting a 15-minute program devoted to praise of the process and its co-developers—all from the 150th "Multitape" copy of the original tape recording!

The economy of this method of tape duplication is reflected in the following price schedule, which includes the highest quality plastic-base tape (Audiotape, of course):

Number of Reels	7" Reel	5" Reel
2 - 4	\$5.50	\$3.30
5 - 10	4.70	2.80
11 - 50	4.40	2.65
51 - 100	4.00	2.40

Further information on this Multitape process can be obtained by writing to Rawdon Smith Associates, Inc., 2217 M Street, N.W., Washington, D. C.

# Purdue University Opens New Electronic Language Laboratory

**Large, Fully-equipped Laboratory is Designed to take Full Advantage of both Audio and Visual Aids in Language Study**

The Department of Modern Languages of Purdue University, Lafayette, Indiana has announced the opening of its new language laboratory for elementary classes, beginning this semester. This large and fully equipped laboratory marks still another addition to the roster of key educational institutions to attack the problem of improving language skills of college students.

The facilities of the laboratory will first be concentrated on students undergoing training in basic familiarization with a new language. At a later date, the facilities can be directed to training for higher academic achievement and for experimentation. The installation, entailing an expenditure of more than \$15,000., was designed and equipped by Educational Laboratories, Inc., of Washington, D. C.

The main laboratory has twenty-eight semi-soundproof booths with sliding front panels which can be raised to isolate the student during intensive audio work. The booths are aligned by rows in "chevron" formation which, with the front panel lowered, facilitates viewing of the screen. Each booth is equipped with a flush-mounted custom Brush Soundmirror tape recorder, button controlled microphone and high quality earphones. Additional audio equipment includes a master tape recorder, disc recorder, radio and associated equipment and connections for piping recorded material or the instructor's living voice directly into each booth. Visual equipment includes the new Bessler opaque projector and a Speed-Reader.

The switching system of the Laboratory is custom designed and permits complete flexibility in the use of the equipment. One important asset of the system is apparent in that each student is in contact with the instructor by way of his earphones for every minute of the class period. Moreover, in supplementing this electronic communication, with the individual recorders in operation the students respond to the instructor's questions and directions while



A portion of Purdue University's new electronic language laboratory, showing 23 of the 28 semi-soundproof recorder booths with front panels lowered.

the recorder makes a tape record of the voices for later comparative study. The effect is thus to eliminate a division and a spreading of the instructor's efforts over the twenty-eight students and each student participates 100% of the class period. The switching system also provides for a recorder to conduct the class, as it were, by means of a pre-recorded tape, while the instructor at the same time is auditing by earphones the responses in any booth. The instructor can cause any booth to function independently or as a master control for a variable number of its neighbors. In this way, using each row of booths as a unit, it is possible to conduct five different activities simultaneously. Students are not disturbed by events taking place which do not concern them due to the acoustical treatment of the installation and to their earphones, which command attention and narrow their concentration.

Multi-sensory impression, a potent ingredient in language learning, is achieved through use of visual material combined with oral texts, both keyed to the class work. Excellent contemporary visual material for the opaque projector is available in the nearest magazine. Neither the opaque projector nor the Speed-Reader

requires total darkness for projection: enough light can be maintained to conduct opaque projector nor the Speed-Reader operates without shutter and projects printed matter at a chosen speed from very slow to very fast. The image moves upward out of vision similarly to the "leader" in an entertainment film. Incorporating visual material by projection into the laboratory system permits the student in one case to identify an unknown sound with a known object, and in another case involving reading, to associate a newly learned sound with its written equivalent in the new language.

The past two years have seen the inception of the modern language laboratory such as has been installed at Purdue, the University of Puerto Rico, Georgetown University, American University, a special project in Manila and in the United States Government. The methodology being developed in these projects is well along towards setting the standard for language teaching in our country. These new techniques where sound is used as the bridge in learning are bringing language classes back to life again, making the learning process a stimulating, exciting adventure for the students.

# Audio Devices Announces Winners of Educational Recording Contest

**Twenty-six Educators Awarded  
Prizes Totaling \$275.00 in Cash,  
Plus \$1,430.00 Worth of  
Audiotape**

The Educational Recording Contest announced in the August-September 1951 issue of *Audio Record* brought in a total of more than one hundred scripts, submitted by educators in 24 States, and even from Hawaii, South America and Europe. Entries varied in length from a single sheet written in longhand to 17 typewritten pages. The applications mentioned included just about every conceivable use in practically every field of education. But they all had one thing in common — a tremendous enthusiasm for sound recording as a teaching tool.

Selecting the prize-winning scripts was a much more difficult job than our judges expected it to be. As is the case in any contest of this type, many excellent and well-deserving scripts had to be eliminated in the "Finals". We know, too, that many of the contestants will be disappointed that their entries were not selected. Frankly, we feel the same way about it. But a contest would be no contest at all if every entry received an award, and the judges had to do the best they could in evaluating all of the scripts on an equal and impartial basis. It was originally planned to award ten first prizes and ten second prizes. In view of the nature of the material submitted, this was changed to eleven first prizes and fifteen second prizes. And still a great many very fine scripts had to be passed up entirely.

To the winners, we extend our sincere congratulations. To all others who devoted their time and effort in preparing material for this contest, we wish to express our thanks and wish them the best of success in the work which they are doing so well.

All scripts were judged on the basis of the completeness of the information—its probable value to other educators—the scope of applications covered—the unusual interest of certain unique and special applications—and also, but to a lesser extent, the availability of suitable illustrative material for use with the articles when they appear in published form. All of the first and second prize-winning articles will be published in future issues of *Audio Record*. In addition, many of them will also be

made available in convenient booklet form, to provide teachers with a complete educational recording guide that will help them to realize the full potential of this powerful new teaching tool.

A glance at the titles of the following 26 prize-winning scripts will give some idea of the wide range of applications covered, as well as the educational levels from which they originated.

## FIRST AWARD WINNERS (\$25 Cash plus 10 Reels of Audiotope)

1. "Our Busy Tape Recorder"  
by Sister Mary Agnetta,  
Band Conductor,  
Immaculate Heart of Mary Home  
for Children,  
Buffalo, New York
2. "Building a Library of Radio  
Programs on Tape"  
by Harold Hainfeld,  
Roosevelt School,  
Union City, New Jersey
3. "Tape Recording in Educational  
Theatre"  
by James W. Thompson,  
Yale University Drama School,  
New Haven, Connecticut
4. "On the Listening Road to Learning"  
by Margaret Seberger,  
Director of Research and Guidance,  
Monrovia City Schools,  
Monrovia, California
5. "The Use of Recordings at the  
Berkeley Opera Workshop"  
by John E. Meeker,  
Director of Recordings,  
Berkeley Opera Workshop,  
Berkeley, California
6. "The Use of Audiorecords in College  
Speech Classes"  
by Clara B. Weir,  
Ithaca, New York
7. "Every Man Heard Them Speak in  
His Own Language"  
by Joseph Hocking,  
Pucallpa, Peru, South America
8. "Tape Recording in Cardiology"  
by J. Scott Butterworth, M.D.,  
Associate Professor of Medicine,  
University Hospital,  
New York, N. Y.
9. "A New Technique Utilizing Tape  
and Disc Recording in Speech  
Training"  
by Duncan Whiteside,  
Director of Radio,  
University of Mississippi,  
University, Mississippi
10. "A Syllabus of the Tape Recorder"  
by Claude D. Bickler,  
Assistant Principal,  
Lincoln School,  
Wausau, Wisconsin
11. "Recording Activities at Yakima  
Radio Workshop"  
by Miss Murlie J. Birk,  
Director of Radio Education,  
Yakima Public Schools,  
Yakima, Washington

## SECOND AWARD WINNERS (10 Reels of Audiotope)

1. "A Precision Tool"  
by Miss Minnie R. Moore,  
709 West 15th Street,  
Tyrone, Pennsylvania
2. "Teaching French with Tape"  
by Fernand L. Marty,  
Instructor in French,  
Middlebury College,  
Middlebury, Vermont
3. "Inter University Recording"  
by Edgar G. Will, Jr.,  
University of Hawaii,  
Honolulu, T. H.
4. "Unusual Uses of a Recording  
Machine"  
by Charles R. Morris,  
Milton Academy,  
Milton, Massachusetts
5. "Tape Recording in Citizenship  
Classes"  
by Louis Ratner,  
Teacher of English and Citizenship,  
P. S. 178,  
Brooklyn, New York
6. "How Tape Recording Helps the  
Drama Instructor"  
by Daniel Seidman,  
2 Peter Cooper Road,  
New York 10, N. Y.

7. "How We Use Recording to Improve Our Public School Music"  
by Frank H. Groff,  
Director of Music,  
West Hartford Public Schools,  
West Hartford, Connecticut
8. "Making Assurance Doubly Sure"  
by Robert C. Schimmel,  
Radio Coordinator,  
Boston Public Schools,  
Boston, Massachusetts
9. "The Recorder in a Propaganda Unit"  
by Sidney B. Simon,  
Bradford Senior High School,  
Bradford, Pa.
10. "Educational Recording"  
by Sister Mary Constance,  
St. Agnes Academy,  
Alliance, Nebraska
11. "How Recorded Sound Helps Teach Anatomy and Physiology"  
by R. Dean Schick, Ph.D.,  
Science Department,  
State Teachers College,  
Cortland, New York
12. "Now We Tape It"  
by Worthington A. Gregory,  
Director of Radio,  
Sewanhaka High School,  
Floral Park, New York
13. "How Tape Recording Lightens the Teaching Load"  
by John Wall,  
Del Norte Consolidated Schools,  
Del Norte, Colorado
14. "Radio Expression in Elementary Schools"  
by Armin H. Beck,  
Grant School,  
Decatur, Illinois
15. "How Tape Recordings Stimulate Creative Imagination"  
by Bethel Jane Graves,  
Junior High School English Teacher,  
North Syracuse, New York

## TAPE RECORDING IN CARDIOLOGY

by J. Scott Butterworth, M.D.

Associate Professor of Medicine

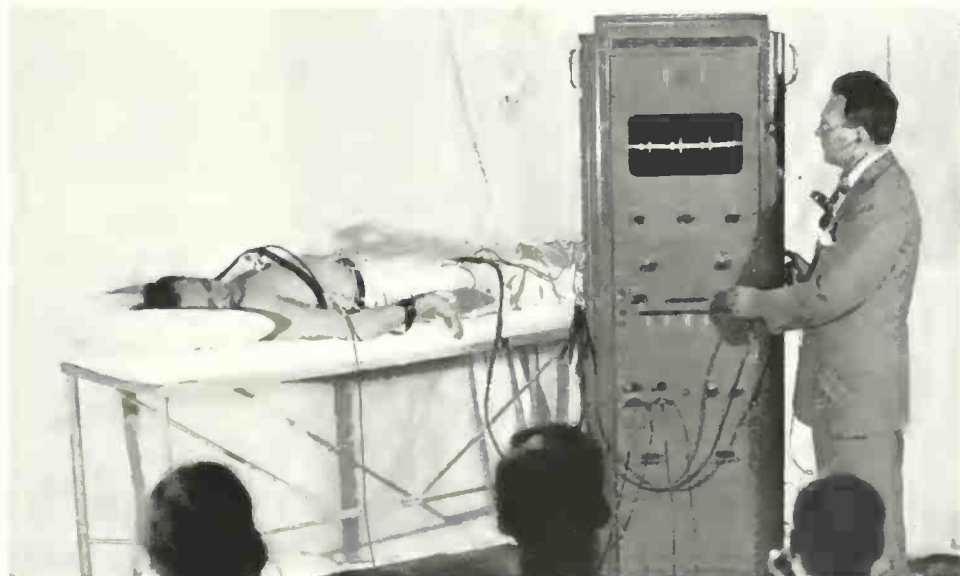
University Hospital, New York, N. Y.

(One of the First Prize winners  
in the Educational Recording Contest)

The teaching of cardiology at New York Post-Graduate Medical School has posed many problems. Cardiology, or the study of heart disease, depends to a great extent upon training the sense of hearing and particularly the appreciation of low frequency sounds. For a number of years we have been engaged in developing and working with an electronic type of amplification that would exactly reproduce the sounds a physician hears through his own stethoscope. This seems rather a simple proposition but it is complicated by the fact that the frequency of the sounds produced by both normal and diseased hearts is in the low spectrum. Most of these sounds are below 200 cps and go as low as the threshold of audibility at the intensity produced by the heart (there are many frequencies below the threshold which we do not hear).

It was formerly necessary for each student to examine a patient individually with his own stethoscope. This not only consumed a great deal of time and wasted the time of the group, but also left much to be desired as far as a teaching method was concerned since the instructor was never entirely sure of what the student was hearing.

We now use a system composed of a special microphone for picking up the sounds from the patient's chest, a good amplifier flat in the low frequency range and multiple electronic stethoscopes so that an unlimited number of students may



In this typical set-up, the microphone on the patient's chest which feeds into the amplifier in the Educational Cardioscope. The output goes to the individual stethophones of the students and also to the tube of the Cardioscope. The instructor has a microphone and earphones and can talk to the group at will. The tape recorder can be used at the same time for recording the heart sounds.

all listen at the same time (see illustration). We have found loud speakers rather unsatisfactory because of the very low frequencies which in a room that is not specially sound conditioned tend to feed back even at low intensity. With this equipment we are able to examine patients with ease, accuracy and speed and at the same time to visualize the sound at the same instant it is being heard, on a special 16 inch tube coated with a long persistent material. There are many times, however, when we do not have a patient easily available to illustrate the particular subject in which we are interested and that is where tape enters the picture.

We originally used discs for our records but were troubled by surface noise (which stands out much more where only lows are

present) which tended to become more pronounced the longer the record was used. We turned to tape for the solution and we now have several recorders which have been adapted to the recording of heart sounds.\* This requires extremely good fidelity in the range from 500 to 20 cps and the additional use of filters to accentuate certain frequencies in this range.

Over a period of time we have developed a large library of tape recordings of all types of heart sounds and murmurs so that we are no longer dependent upon the presence of an actual patient. The records may be played in continuous recordings of an hour or more with lectures and comments interspersed or endless tapes may be used to play a certain type of record endlessly until the student has had plenty of



Tape Recorder replaces the patient and the output goes to the stethophones (one illustrated) and also to the Educational Cardioscope where the sounds are visualized on the face of the special picture tube. In this illustration a continuous tape is shown in position which will play 30 seconds at  $3\frac{3}{4}$ " or one minute at  $1\frac{7}{8}$ ".

time to become accustomed to the sounds. Most of the recording is done at  $3\frac{3}{4}$ " or  $1\frac{7}{8}$ ", which enables us to put a lot of material on a 7 inch reel and which does not detract from the low frequency response.

This system of tape recording has many other advantages: It is easy to edit the tapes; It facilitates teaching since the record may be played as long as desired by either the instructor or the student; It produces a permanent record of a patient at a given time. The latter is most useful in following changes in the sounds of an

individual patient over a period of months or years, or in illustrating the changes that occur as the result of our modern cardiac operations where certain types of cardiac murmurs may be entirely abolished by the proper surgical procedure. The field is still new and the possibilities are relatively unlimited.

\* These recorders are not commercially available at present but any tape recorder having good low frequency characteristics may be adapted. Our recorders were originally developed with the fine cooperation of Mr. Jack Bieger of Tapetone Corporation.

## "Every Man Heard Them Speak in His Own Language"

by Joseph Hocking  
Pucallpa, Peru, S. Amer.

(Another First Prize Winner)

The arrival and development of magnetic recording has opened vast possibilities for the missionary to reach and teach illiterate Indians or Indians without a written language. Something has been done and more will be done so that the red skin seated in darkness may receive the light as he listens rather than as he reads. The problem of illiteracy disappears when we seek to reach the uncultured through the ear-gate. Let us talk of what has been done.

We have been carrying on a campaign here in the jungle country to try and give every missionary and linguist working with primitive people an opportunity to produce a set of records presenting his messages to that group in their own language. Before tape recording became available Presto portable disc recording equipment was used here. Centers were set up as near the tribe as possible where electric current and other facilities were available or the entire equipment with a portable generator was carried or flown to the Indian center. This method was expensive and the equipment cumbersome. No matter how well coached by the missionary, the native reader would often make mistakes, spoiling blanks and adding to the expense. One native Quecha boy was very polite when he made a mistake always saying "pardon me" and then making the correction. He couldn't understand and was quite put out that we recorded his "pardon me's". Editing the tape now it is quite a simple matter to cut out the error and the "pardon me". I must someday go back and tell that boy that he can now say "pardon me" and we won't play it back.

Just as the sulfas and the biotics have simplified our medicine so the magnetic tape recording has simplified our record-

ing problems. Now, even when traveling lightly, one can still take a tape recorder along to the tribe. For several years we have been using Brush portable equipment. Our Audiotape often comes out parcel post bringing a message from a friend or a favorite program. Sometimes the custom charges are high, sometimes the tape comes in as gummed tape or the like with little or no charge. These same tapes go back carrying Indian programs to be duplicated and returned. As the prices come down more and more workers arrive in the jungle country bringing a magnetic recorder. Recently we have seen Wilcox Gay portable equipment and Minitape brought in.

The field recordings are usually made up into three and a half minute programs. These are sent to a group in Los Angeles (Gospel Recordings Inc.) to be dubbed and a hundred or more pressings made of each. These records are sent or brought out to the Indian area to be used with suitable portable victrolas. The records are usually given to the Indians and the play back machine lent or sold below cost.

You can imagine the surprise of the Indians as they hear for the first time the box that talks their language. Some chatter like monkeys forgetting to listen. One

Indian stood up and repeated word for word the message as the record was first played. Others want to add their comments to the record after it is played. Often they look around and in the box to find the voice. It is amusing to see them examine the needle and record to try and understand how it is done. One Indian jumped to his feet after the second playing calling attention to all listening that the record has said the same thing the second time it was played. He was so impressed by this that he said it must be the truth and he would believe it if it said the same thing the third time. Of course a convert was won. One Indian group traveled days to return their victrola which they said was broken. It was discovered that they had played their records till they were no longer understandable. With a new set of records their machine was fixed.

Our little wooden missionaries are untiring workers, willing to repeat their messages any number of times at any hour of the day or night. They don't mind the mosquitoes and other insects and they don't get sick from poor food and disease. They speak fluently many difficult languages. We take our hats off to them—they are doing a good job.



A linguist, James Lauriault, coaches his native informant before making a tape recording at Roahoya, Rio Ucayali, on the Upper Amazon, Peru.



Shipibo Indians listen to a phonograph record made from the tape recording in their own language. Taken at Roahoya, Peru.

# audio pointers for the Recordist

By C. J. LeBel, Vice President  
Audio Devices, Inc.

## EDUCATIONAL RECORDING

We have just had a most interesting several days reading the manuscripts entered in our Educational Recording Contest. Especially surprising are many of the uses to which tape recording is being put today, ranging from standard school applications to psychiatry and missionary work.



C. J. LeBel

Although the total number of entries was not sufficiently great to permit drawing any hard and fast conclusions on educational level and territorial distribution, some interesting trends seem to be indicated.

Papers were submitted at all levels, with the following somewhat surprising distribution:

Elementary School . . . . .	16%
Junior High School . . . . .	12%
High School . . . . .	37%
College . . . . .	17%
Miscellaneous . . . . .	18%

Based on the number of institutions in each field, one would expect a higher percentage of returns from the elementary and junior high school groups, and a lower percentage in the high school and college brackets. Since writing ability is possessed at all levels, it looks as though sound recording equipment is still too scarce in elementary and junior high schools. This, however, is a situation which is sure to correct itself as more and more educators in this group become familiar with the advantages and economy of tape recording.

When we come to the state of origin we have another surprise. Although scripts were submitted from a total of 24 states, 71 per cent came from the following group:

New York . . . . .	26%
California . . . . .	10%
Massachusetts . . . . .	8%
New Jersey . . . . .	7%
Pennsylvania . . . . .	7%
Illinois . . . . .	7%
Wisconsin . . . . .	6%

## NEW SELF-TIMING LEADER TAPE ON PLASTIC BASE



Audio Devices, Inc., has now perfected an improved, self-timing leader tape made of a strong, durable white plastic material. It can easily be marked with pencil or ink to identify selections and will outlast paper tapes many times over. Used with standard 1/4-inch magnetic recording tape, it offers the following advantages.

*Saves Recording Tape* — leaders at beginning and end of reel permit full length of magnetic tape to be used for recording.

*Protects Recording Tape* — outer wrap of leader tape protects outer turns of magnetic tape from accidental damage.

*Easy Identification* — marked leader tape between selections on a reel permits quick spotting of any desired material.

*Accurate Timing* the words "Audiotape" are spaced exactly 7 1/2 inches apart, providing a simple and accurate method of timing at all standard tape speeds.

Another way of putting it might be that only four states supplied over 50% of the replies. Are some states too slow to adopt improved techniques? Or is it that their teachers are just more reticent to talk about their accomplishments?

Finally, our analysis comes to a point which has been a pet interest of the writer: quality needs. Administrative personnel have often told him that most schools do not need high quality equipment — for very few engage in activities that require high quality results. It is therefore significant that 26% of the users have applications where quality is vital: speech correction and/or music. This does not mean that all are full time teachers of speech correction, but rather that child speech (for example) is often bad enough so that correction becomes an accompaniment to other work.

## What is a CHIP CHASER?



Several people have asked us this question, after seeing a reference to it in a recent Audio Record Article.

Briefly, the Audiodisc Chip Chaser is a simple and effective device for keeping the thread out of the way of the stylus when recording outside-in. It has a heavy base which is placed beside the turntable and requires no fastening down or adjusting. The wiper blade is set on the disc before starting the recording.

It automatically and infallibly brushes the thread toward the center of the disc where it winds up on the center post or drive pins, without any danger of fouling the stylus. Once in place, it operates without attention — fits any machine — is self-adjusting and tips up out of the way when not in use. The blade cannot scratch or damage the disc surface.

Two sizes are available from your Audiodisc dealer:

For up to 12" Turntable	\$5.00 List Each
For up to 16" Turntable	6.25 List Each

Audio Self-Timing Leader Tape is available in 150-foot rolls, individually packaged in a self-dispensing container for easy use. List Price, 60 cents per roll.

Bearing in mind the number of schools which have only one recording machine, it is evident that most machines should be capable of good enough quality for speech correction. Yet many of the contestants are still limited in their activities by obsolete and inadequate equipment. It is indeed a tribute to their perseverance and ingenuity that they have been able to do so much with so little. We sincerely hope that these limitations will soon be removed that their efforts will be rewarded by the purchase of recording equipment capable of performance that is commensurate with the basic minimum requirements for the job to be done. We will then see a tremendous increase in the effectiveness of sound recording in all phases of educational work.

A reprint of an article on quality requirements for educational recording, by Mr. LeBel, is available from Audio Devices, Inc. on request.



*They bring true listening enjoyment to millions—through the finest in modern sound recording methods and equipment*

RCA Victor's modern Vinylite phonograph records are infinitely superior to the old shellac pressings of a few years ago. Better in tone quality, distortion, surface noise and frequency range. This improvement in quality requires more precision than ever before in every step of record manufacture and processing. That's particularly true of the original sound recording and the master discs from which the stampers are made. And RCA Victor has found that Audiotape and Audiodiscs are an ideal combination to meet the exacting demands for today's high fidelity phonograph records — Audiotape for clearest recording of the original sound and Audiodiscs for fast, easy processing without loss of sound quality. In fact this record-making combination is now being used with outstanding success by America's leading producers of fine phonograph records and broadcast transcriptions.

Whatever *your* recording work may be, Audiotape and Audiodiscs offer you this same sound perfection — the result of more than 12 years of specialized experience by the only company in America devoted solely to the manufacture of fine sound recording media, both discs and tape.

## **AUDIO DEVICES, Inc.**

444 MADISON AVE., NEW YORK 22, N. Y.  
Export Dept.: 13 East 40th St., New York 16, N. Y., Cables "ARLAB"

...including  
**audiotape**\*  
for the original sound



...and **audiodiscs**\*  
for the master recording



\* Trade Mark