

THE PROTESTANT RADIO CENTER, INC.

An Example of Cooperation in Inter-denominational Recording and Broadcasting

There recently opened in Decatur, Georgia, a part of greater Atlanta, a unique radio and audio visual production center which is attracting national notice. It is known as the Protestant Radio Center. It is not a radio station, but it has the finest equipped studios for broadcasting, recording, and producing programs for radio and for audio visual aids. It is unique in that it is the only inter-denominationally owned and controlled institution of its kind in America.

The Center is a venture in Protestant cooperation, and the one word which sums up its purpose is just that—*cooperation*.

Cooperation among the denominations. Four years ago four denominations interested in producing religious radio programs formed the Southern Religious Radio Conference. They have produced one or more programs every week ever since January 1, 1946.

Cooperation with the radio stations. The Conference started with 26 stations which accepted the programs on a sustaining basis. There are 97 stations now affiliated with the Conference. This is one of the biggest networks for a sustained religious radio program in the nation today. The stations at present extend from Washington, D. C. to Amarillo, Texas and Gallup, N. M.; from Kearney, Nebraska to Miami, Fla. Most of the fifty thousand watt stations in this territory accept these programs.

Cooperation in production. These denominations, with this large number of stations, felt the need of a production center, jointly owned and controlled by the members. Consequently an application for a non-profit charter was drawn up and filed by the late Allen W. Clapp, one of the outstanding Atlanta attorneys. The charter was granted by the state of Georgia, and the corporation has been recognized by the Federal Government as a tax-exempt corporation, gifts to which

(Continued on Page 2, Col. 1)



Disc recorders and control console being installed in Protestant Radio Center's headquarters, at Music Building of Agness Scott College, Decatur, Georgia.

HOW WE USE RECORDINGS IN THE ST. LOUIS SCHOOLS

By Llewelyn Lieber — Director of Audio-Visual Education

"Oh, how I wish my students could have heard that!" is no longer a familiar cry in the St. Louis public schools. For now tape and disc recordings bring treasured auditory experiences right into the classroom. The Division of Audio-Visual Education maintains a recordings library which incorporates all the regular uses of recordings and a few which may be unique. For instance, at an Open House two exchange students from Bangkok were guests. They were escorted into a room and a recorder took down their impressions of education in the United States and their answers to questions concerning the Siamese system. And when the Freedom Train visited St. Louis, it called forth the presentation of two radio programs on the Revolutionary Era. The Division of Audio-Visual Educa-

tion made recordings of these broadcasts so that they might be used for future history classes; for demonstrations on recorder techniques; and for the personal benefit of the participating students.

The in-service teacher training program has benefited from the synchronizing of Kodachrome slides with magnetic recordings. This device has been used to show student-teachers how a St. Louis teacher in special education, developed a Christmas program—how deaf children are taught in Gallaudet School. These sound-picture projects have been used in talks to parent groups, members of the Board of Education, and to other civic groups.

Radio programs originating from the Division of Audio-Visual Education have

(Continued on Page 2, Col. 2)

audio record

Published monthly by Audio Devices, Inc., 444 Madison Avenue, New York City, in the interests of better sound recording. Mailed without cost to radio stations, recording studios, motion picture studios, colleges, vocational schools and recording enthusiasts throughout the United States and Canada.

VOL. 6, No. 1 JANUARY, 1950

Protestant Radio Center (Continued from Page 1, Col. 1)

may be deducted in estimating federal income tax.

The basis of the corporation was extended to church affiliated educational institutions and inter-church agencies. The charter authorizes radio production, recording, audio-visual aids, laboratory research and teaching.

The founders of the corporation were Emory University, Candler School of Theology, Agnes Scott College, Columbia Theological Seminary, the Southeastern Inter-Council Office, and the radio committees of the Methodists, Presbyterians, Episcopalians and Lutherans (United). Aided by an anonymous grant, the Center starts off with assets of \$25,000 cash and equipment.

The Center is installed in the music building of Agnes Scott College, one of the finest of its kind in the land. The equipment is of the latest model. The Center has a portable tape recording unit for remote use. It is equipped to cut recordings for radio use: 16 inch at 33 1/3 rpm. It can also cut phonograph recordings at the conventional 78 rpm and also the long playing microgroove type.

Cooperation on the national level. The Protestant Radio Center is the official regional outlet for the programs of the newly organized national Protestant Radio Commission of New York. In addition to that the Center produces programs for the nation-wide networks. This fall it produced a program for the Mutual net. A program for the Columbia Church of the Air originated here. For four months during the summer of 1950 the NBC National Radio Pulpit will originate at the Center.

Dean H. B. Trimble of the Candler School of Theology is the President. Dr. John M. Alexander, secretary of the Radio Division of the Presbyterian Church US, is the Executive Vice President. Dr. John R. Brokhoff, pastor of the United Lutheran Church of the Redeemer, is secretary, and Mr. George H. Mew, of Emory University, is the Treasurer. Mr. Warde Adams, Jr., is the Production Manager, and Mr. M. F. Adams, Jr., is consulting engineer.

Recordings in St. Louis Schools (Continued from Page 1, Col. 3)

profited from the use of tape and disc recordings, for it is a most effective way to develop new series. For example, Dr. John Whitney, Consultant in Science at Harris Teachers College, inaugurated a new series of programs designed to guide elementary children with scientific experiments in the classroom. Before going on the air, tape recordings were made and taken into classrooms where the teachers and pupils listened critically for flaws in technique. These were corrected and a new recording tried out on other groups until pace, content, and voice quality were satisfactory. Finally, a disc was made and tried out with a regular elementary classroom on their school stage following the recorded directions while an audience of teachers and principals observed the entire procedure from the auditorium. Acceptance was unanimous so the series was put on the air.

All radio programs sponsored by the Division of Audio-Visual Education are recorded on discs, and these are auditioned by a committee of ten St. Louis Public School teachers who make a written evaluation of each program. At the conclusion of the series a tally of the recommendations is made and if the teachers believe the programs merit inclusion in the recording library, dubs are made and placed in service for issue to the schools whenever teachers request them.

To celebrate "Writer's Day," Blewett High School invited Miss Clarisa Start, feature writer for the St. Louis Post-Dispatch, Robert Hereford, author of "Old Man River" and feature writer for the Globe-Democrat, and Mrs. Fannie Cook, author of "Mrs. Palmer's Honey" and other novels, to speak to the student body. The speakers told the techniques employed when writing for a newspaper and when writing a book. Now future English classes can benefit from these authorities for the Division of Audio-Visual Education made a recording of the entire program.

When eighth grade pupils of Cupples School visited Missouri's capital in Jefferson City, the Division of Audio-Visual Education made a recording of their impressions of the trip after they returned. Seventh grade pupils of the same school interrogated the children who had made the excursion and this resulted in a clarification of benefits derived from the trip, a review of facts learned and a permanent record for future reference.

Celebrities visiting the Division of Audio-Visual Education are usually interviewed with a recorder so that a library of talks by outstanding authorities on various subjects is gradually being assembled. This is available for use in public relations work, teacher training, workshop courses and

special subject classes, and will be valuable to posterity as a means of hearing famous people express themselves.

The Division of Audio-Visual Education follows the routine procedure of using recorders for perfecting speeches to be made by staff members; for correcting errors in children's classwork in English, dramatics and reading; and for recording radio programs for school use which come over the air after school hours or at inconvenient times during school hours. Yes, the schools have really "gone on record" here in St. Louis.

AUDIOSCRIPTS 1949 NOW AVAILABLE



A collection of
16 Prize-Winning
Scripts from the
AER and Scholastic
Magazines'
Contests

Audio Devices has prepared, in convenient booklet form, a collection of 16 complete prize-winning radio scripts, selected from the 1949 Scholastic Magazines' Script Writing Contest (for high school students) and AER National Radio Script Contest.

These outstanding scripts are the creative work of the best student writers in the country—many of whom may well be among the ace scripters of tomorrow. Their work will be of great interest to all teachers and students, as well as to anyone concerned with the preparation of scripts for radio or other recording applications. They will, of course, be of particular value to high school and college teachers whose students are entering the 1950 contests. School and home recordists will find this collection very worth-while for still another reason, too. For practically all of these scripts—particularly the original radio dramas—make excellent material for recording in the classroom or at home. This booklet, 8½ by 11 inches in size, is being offered at actual cost, as a service to educators and others interested in script writing. It sells for \$2.00 List per copy. Readers of Audio Record, however, can obtain copies at \$1.00 each. Send check or money order to Audio Devices, Inc., 444 Madison Ave., New York 22, N. Y. (Dep't S-1).

audio pointers for the Recordist

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

REMARKS ON MAGNETICS

With the advent of magnetic recording, many engineers have suddenly developed a new interest in magnetic fundamentals, a subject carefully forgotten since college days. To appease them we will proceed to discuss some basic magnetics, using industry practice in terminology rather than the official AIEE standard. Finally, we will give magnetic data on both red and black AUDIOTAPE.



C. J. LeBel

In Fig. 1 we show a typical relation between the magnetizing force applied to a material and the resulting magnetic induction (magnetization). This curve shows what happens when you start with a completely de-magnetized material, and increase the magnetizing force progressively. Note that the curve levels off at the upper end as saturation is approached (point A). If we now decrease the magnetizing force from its peak value A back down to zero, the magnetic induction will fail to retrace the curve previously followed. Instead, it will decrease much more slowly, following the dotted line AB shown in Fig. 2. Even when the magnetizing force has dropped to zero, a certain amount of residual magnetization remains (point B). To remove this, it is necessary to apply a

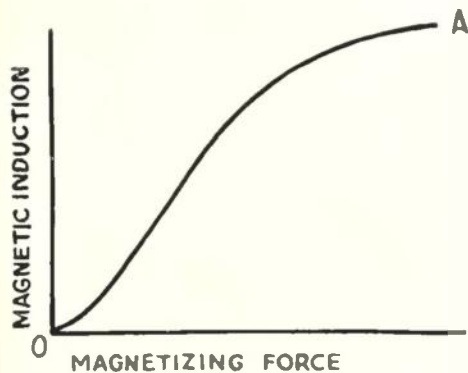


Fig. 1 Magnetizing force and initial magnetic induction for a typical magnetic material.

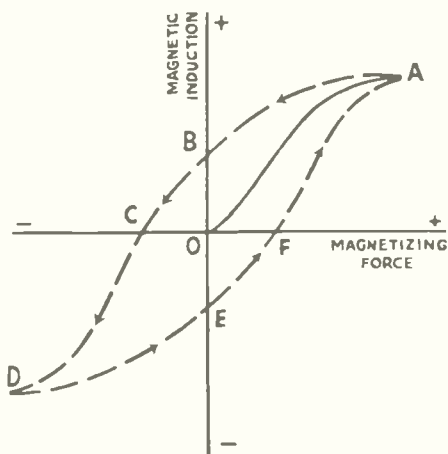


Fig. 2 Development of typical hysteresis loop by cyclically varying magnetic field.

magnetizing force of opposite polarity. The curve will then be as shown by the dotted line BC in Fig. 2. Then, if this negative magnetizing force is progressively increased, the curve will continue along dotted line CD, approaching negative saturation and returning along dotted line DEFA as the magnetizing force is reduced to zero and then increased positively again. This failure of the curve to retrace its original path is called hysteresis, and the dotted curve shown in Fig. 2 is a hysteresis loop, the magnetization curve which results when we increase and decrease the magnetizing force cyclically.

Actually, we have oversimplified the matter in Fig. 2, because we do not ordinarily get back exactly to the starting point (A) the first time around the loop. After thirty or forty cyclic variations the loop retraces itself exactly, and it is this which is ordinarily shown, rather than the first loop traced after the initial magnetization curve (line OA).

In Fig. 3, we show typical hysteresis loops for plastic and paper base AUDIOTAPE. In these illustrations we have, for the first time, introduced units. Magnetizing or magnetic force (usual symbol H) is measured in oersteds, one oersted being the value which would produce a magnetic induction of one flux line per square centi-

meter in air. Magnetic induction is measured here in maxwells (usual symbol B), the maxwell being a unit indicating the total induction. Another unit of magnetic induction is the gauss, a measure of flux density. One gauss is equivalent to one maxwell per square centimeter.

A great deal of magnetic testing equipment is calibrated in gauss, because it was originally built for testing wire. Since a curve tracer fundamentally reads total induction, the gauss scale is produced by assuming an area of 160 circular mils, a standard wire area. On tape the total coating cross-section will vary, but the customer really buys and uses the total induction, so all of our test data are given in maxwells.

It is easier to classify materials if their characteristics can be summarized in a few numbers, rather than by the infinite number of values given by curves. In the case of magnetic oxides it has become customary to use two index values: the retentivity and the coercive force.

Retentivity is the magnetic induction at which the magnetizing force is zero, in a symmetrical cyclically varying magnetic field. It is marked B_r in Fig. 3. The other number is coercive force, which is the magnetizing force at which the magnetic induction is reduced to zero in a cyclically varying magnetic field. It is marked H_c in Fig. 3. Coercive force and retentivity will define the characteristics of most magnetic materials at 60 cycles, but they are somewhat indefinite as a guide to recording properties, as will be discussed later. As a matter of actual practice, the retentivity is generally determined by application of a 60 cycle field with a peak value of 1,000 oersteds, which is well beyond saturation.

The following are the magnetics of plastic base AUDIOTAPE:

Red:	$H_c = 240$	270	oersteds
	$B_r = .5$	$.58$	maxwell
Black:	$H_c = 300$	340	oersteds
	$B_r = .5$	$.58$	maxwell

Paper base AUDIOTAPE will have the same coercive force. Retentivity will normally be in the same range, but it is subject
(Continued on Page 4, Col. 2)

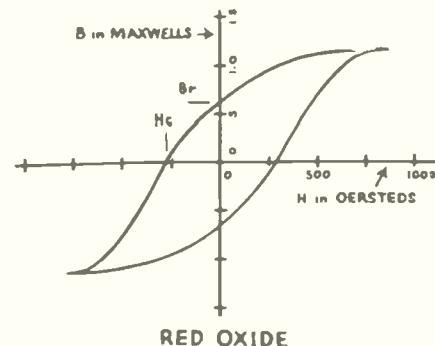
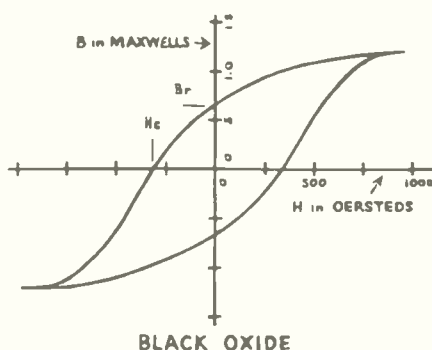


Fig. 3 Hysteresis loops for typical AUDIOTAPES.

TAPE-RECORDED PROGRAM REVEALS FACTS OF LIFE

"It's Your Life" lifts the lid on hitherto taboo subjects, in its continuing battle for better health

Chicago's tape-recorded, award winning documentary radio program, "It's Your Life", has blazed many important trails in the broadcasting field. Noteworthy among these has been the fearless and straightforward manner in which they have tackled the delicate problem of sex education. This subject, which has so long been discussed only in whispers or behind closed doors, was given the full treatment in a unique two-part program which pulled no punches and did not obscure its important message with mincing references to the birds and bees.

The first program featured Chicago children discussing sex education with a prominent physician. Segregated groups of 12 year olds told their problems, described physical changes, and explained their feelings on the subject. And the doctor answered all their questions in an equally frank manner. In recording such a discussion, one may readily appreciate the advantages of using tape—with its easy editing (and easy censoring) qualities.

The second program in the series highlighted the lives of two girls—one who suffered tragic consequences as a result of improper sex education, and another who had the benefit of intelligent guidance. The contrast in the lives of these two girls effectively dramatized the importance of sex knowledge in helping adolescents to adjust themselves normally to the physical and mental changes coincident with "growing up".

These two programs achieved a two-fold purpose. One, to give helpful suggestions to parents and point out the value of intelligent sex education in the lives of their children; and two, to instruct the boys and girls themselves who were listening at their radios.

Produced by Ben Park, who has an outstanding record in the Mid-West as a producer of award winning documentary radio programs, "It's Your Life" is designed to show how better health means better community living. Since its inception little more than a year ago, the program has won five awards for excellence as the "most outstanding program of the year" and gained nation-wide attention in the health education field.

In collecting material for "It's Your Life", interviewer Don Herbert and his tape recorder visit homes, hospitals, nurseries, welfare agencies—wherever in Chicago people live and fight battles for better health. For the first time in radio history, listeners have been taken behind the scenes of such real-life dramas as the delicate blue baby operation performed in a Chicago hospital; the birth of a baby in a Chicago home; the treatment for such ills as alcoholism, mental illness, tuberculosis and venereal disease.

"It's Your Life" is produced for the Chicago Industrial Health Association—a non-profit agency made up of 39 member agencies for the good of Chicagoans—and sponsored by Johnson & Johnson, makers of surgical dressings. All programs are reviewed by a medical advisory board for authenticity before being presented over the air. These programs are broadcast at 3:30 P.M., Sundays, over Station WMAQ, the NBC outlet.



Producer Ben Park (left) and interviewer Don Herbert time "It's Your Life" with a ruler instead of a stop watch. An average half-hour broadcast requires hours, and sometimes days, of actual recording. The completed reels are edited down to comprise the finished program.

Remarks on Magnetics

(Continued from Page 3, Col. 1)

to variation over a rather wider range due to variation in paper thickness.

A number of writers have expounded the theory that the high frequency response of a magnetic recording medium correlates directly with its coercive force. This may be termed a cornerstone of the classical theory. Unfortunately, the classical theory is badly oversimplified, and the gap between theory and practice is too wide to be overlooked. The correlation between coercive force and high frequency response exists only when comparing successive batches of nominally identical oxides. It is a fairly satisfactory production control tool, but very dangerous if applied to research results. For example, in comparing a red with a black oxide, it becomes entirely valueless.

Classical theory also indicates that retentivity correlates directly with low frequency response. Again, this is a very oversimplified picture, for the relation works well as a production tool on nominally identical oxides, but fails hopelessly when comparing hundreds of oxides in research. The error may then be as much as 20 or 30 db.

It is possible to derive another magnetic characteristic by producing a series of hysteresis loops with different values for Hm, the maximum magnetizing force. We get a series of values for Hc and Br corres-

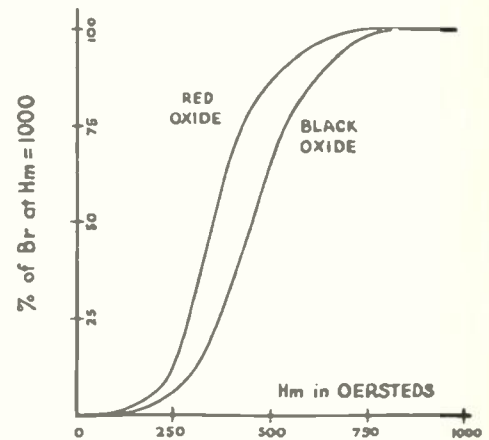


Fig. 4. Relation between retentivity and maximum magnetizing force.

ponding to various values of Hm. The more useful relation is the one between Hm and Br, which we have shown in Fig. 4.

A useful index point which can be derived from this curve is the saturation magnetic force, which is marked on Fig. 4. This is of interest because a tape has to be saturated, at least momentarily, to erase it. The higher the saturation force, the harder to erase. For the particular oxides shown in Fig. 4, the values are 810 oersteds for the black and 710 oersteds for the red.

Seeing that magnetic characteristics are so far from linear, we can only marvel at the effect of AC bias in linearizing the transfer characteristics.