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Title of Study: The Use of Projected Pictures in Industrial Arts Classes.

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Engineering Shopwork.

Scope of Study: This study is an analysis of current films, filmstrips and slides as listed by 575 companies, whose names and addresses are given in Chapter III.

In this study only the visual aids concerning the nineteen most commonly taught Industrial Arts' subjects were listed. Films and other visual aids relative to these subjects, are the ones most generally used by all institutions.

No attempt was made to discuss the various models of projectors and other equipment because of its discussion by others, in previous investigations.

Requests for information relative to visual aids were mailed to 200 companies. One hundred and eighteen replies were received. This information was supplemented by a study of available magazines, booklets and other material in the Oklahoma A. & M. College library.

Findings or Conclusions: Educators, administrators and others are aware of curriculum changes due, perhaps, to our complex industrial world. These individuals are generally agreed that visual aids will assume a vast share of the burden in contributing to these curriculum changes.

One hundred and eighteen motion picture catalogs were searched for pictures relative to Industrial Arts Fields. The visual aids are listed under nineteen industrial arts subject headings. Each visual aid is described by title, type, and paragraph summary. A total of 826 films and 279 filmstrips are listed by subject title and the contents are described.

The organization of a visual education department and the care and operation of equipment are described in Chapter II. The duties of a director of visual education are stated. A list of eight subjects is suggested for further study in the section on Recommendations for Further Study.

Advisor's Approval: _____

W. J. Howard

THE USE OF PROJECTED PICTURES
IN INDUSTRIAL ARTS CLASSES

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THE USE OF PROJECTED PICTURES
IN INDUSTRIAL ARTS CLASSES

By

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Bachelor of Science

Southwestern State Teacher's College

Weatherford, Oklahoma

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And Engineering Shopwork

Oklahoma Agricultural and Mechanical College

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For the Degree of

MASTER OF SCIENCE

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CHAPTER I

THE NATURE AND EXTENT OF THIS REPORT

This study was attempted for the purpose of bringing up to date a fairly complete list of films, slide-films and film strips that would be useful to industrial arts teachers and others interested in various phases of industrial subjects.

The purpose of this study then, is to provide the shop teacher with a complete and currently available film list, desirable for the various industrial arts subjects, along with a short, but concise description of the type of film, and the name and address of the firm or depository supplying them. The list of films arranged under the proper subjects appear lengthy but will be fairly complete for any person seeking a particular film on some phase of a certain industrial subject.

Commercial film companies in the past have been slow to produce films on industrial arts subjects. The alert teacher has been compelled to turn to industry for help.

While incomplete, on account of the magnitude of the subject, this study presents many valuable possibilities and problems in visual education, along with the opinions of modern educators as to these possibilities and problems.

Origin of the Study

During the school year 1945-46, the writer, in addition to his

duties as teacher of shopwork in his local high school, was selected by the superintendent to take charge of the visual education program for the entire school. This involved many duties besides becoming familiar with the projector and other equipment. One of the chief problems was assisting and advising the various teachers on suitable films; securing information from the film companies regarding content and pupil level of their films, and arranging dates for the showing of the pictures. The experience thus gained led to the selection of this study for further investigation.

The selection and grouping of films on industrial subjects, with the name and addresses of the firms supplying them, was a problem constantly asserting itself. The war provided great impetus to the production of industrial films. The armed forces probably used more visual aid than all the high schools of the nation combined. Thus film lists that had been prepared previous to 1941 quickly became obsolete.

The task foremost to the writer, it seemed, was to prepare and bring up to date all previous film lists, using in a large measure the recently released lists of all war training films as approved by the U. S. Office of Education.

Need for the Study

Not until the last decade was very serious thought given to the

use of visual aids as an extra tool of instruction for the industrial arts teacher. Many shop teachers do not have available a list of firms supplying free or nearly free films. Others, who have attempted to find appropriate films have found that present lists on hand in their libraries or files were entirely or partly obsolete.

Many firms supplying films furnish those that relate only to their particular products. Many films are either too technical in character or contain too much advertising to be of any instructional value to the average high school boy.

Objectives of Visual Education

The extensive use of the various forms of visual training by the armed forces has focused attention on this phase of educational activity. The usual visual aid is not intended as a substitute for the teacher but rather as an aid to him. These aids are used according to the teaching requirements, the nature of the subject and the experience and intelligence of the learner.

The question is many times asked: "What are visual aids"? Much has been written in this particular. Dent (8, page 1) defines very well the social goal of visual education in his statement:

In the early history of the development of the use of visual aids it was thought the eye was all-powerful in the educative process. Some were enthusiastic enough to state that eighty

to eighty-five per cent of all we know is learned thorough the eye. Thought texts would be replaced by pictorial substitutes for the printed word. Later it was found that some of these speculations were a bit extravagant if not absurd, and that the other senses are very important in receiving a clear impression of the material to be used. The term is applied to all materials used in the classroom or in other teaching situations to facilitate the understanding of the written or spoken word.

In the same reference, Dent (8, page 16) quotes Dr. Frank N. Meerman as placing further values on visual aids. In summarizing the results of a series of experiments conducted by himself and twelve others in eight cities and three universities, Meerman makes these remarks:

No support can be given to a belief that pictures may be substituted for language. It does indicate, however, that they have a definite function to perform. This function is determined by the nature and purpose of the instruction. The purpose of instruction at one time is to lay the foundation for thought, reflection, generalization and application. This foundation consists in direct experience with material objects. The evidence is that pictures are an invaluable means of getting certain kinds of experience of a concrete sort.

The success of the armed forces in using the films listed by the U. S. Office of Education, and other approved lists, leads the conscientious shop teacher to analyze the literature about the war training programs and to summarize their findings. All visual aids are generally conceded to have certain limitations and certain advantages. They do not do work of themselves, but have to be used in order to do their work. In the hands of a skillful teacher, they are a

valuable adjunct to instruction and demonstrations with tools, and provide the best combination for enabling both tool and person to make the maximum contribution. Brooker (6, page 8).

He further clarifies this problem in his summary of the article. Brooker (6, page 8, 9).

Effective films have all the specificity of effective tools. They are a medium of communication. They communicate their messages largely by pictures. As instructional tools conveying their messages via pictures, films, if they are properly used and have been carefully prepared with the interest of the learner in mind, can do many things to assist the instructor. Indeed, they can do some things the instructor himself cannot do:

1. Films can speed up training. (Army estimates 40%)
2. Facts learned from films are retained longer. (Army estimates range around 55%)
3. Films standardize training.
4. Film use may make the total training better and more effective.
5. The use of films secures better attention and holds the interest of the class.
6. The film demonstration can be definitely superior to the average class demonstration because:
 - a. Groups of students can see what is being done with equal clarity and from identical viewpoints.
 - b. The machine can be slowed down to emphasize important operations or speeded up on those operations of little value.
 - c. The film eliminates all extraneous noises and all views of the machines except the exact part in which the students are interested.

- d. The selection of the scenes, words, and their organization are the result of hours of painstaking care by outstanding authorities -- far more time and care than the average instructor can spend organizing a single demonstration.
- e. The demonstrator in the film has been selected for his skill. He always repeats the demonstration exactly as it was done the first time.
- f. Animation can explain the action and the basic principles in the demonstration at the time those principles need explanation; using a technic of explanation that is superior to all others.
- g. It can be repeated for the slow student or for the absent student without thus requiring the full time of the instructor.
- h. The film demonstration possesses an objective unattainable by the usual instructor demonstration.
- g. The film demonstration provides a way of giving school shop students a degree of familiarity with production machines that they do not possess in the school shop.

Specific Aims or Objectives

From the summary given in the preceding material from Brooke's study, one would perhaps draw the following conclusions regarding the specific objectives of visual aids:

1. Enrichment of courses in industrial arts by additional related information and visualization of teaching material.
2. Imparting technical knowledge of various subjects, covering many fields, to the students.
3. Using the visual aid, in connection with an actual shop demonstration if possible, to teach proper usages of tools, skills, procedures and attitudes.

4. To teach appreciation of occupations, skills, industry and materials.
5. To teach consumer's knowledges and appreciations.

Uses of the Study

The use of the list of film-slides, films and film strips which are arranged under subject headings will be helpful to the shop teacher whether in a large or small high school. Being divided according to the various subjects, the teacher can quickly find a film or other visual aid, suitable to his particular lesson at hand. The list of films will assist him in case he wishes to write for additional information. He will probably desire to correspond with many of the firms listed, particularly if he is anxious to obtain lists of currently available films.

Teachers in other fields, such as chemistry, physics, general science, vocational agriculture and others will find a number of films useful in their departments. For others, the films on vocational education, vocational guidance, safety, etc. have definite possibilities for any program in their field.

A suggested program of films, for one year's work is given at the end of Chapter III, which will be found useful. The instructor may wish to omit or add to the list, according to his teaching requirements, nature of the subject and the experiences and intelligence of the learner.

Reviews of Previous Studies

A form card was sent to two hundred firms (a copy of this card is included in Chapter III), requesting them to send any information relative to films, film strips and slides, usable in shopwork classes, to the Department of Industrial Arts Education and Engineering Shopwork, Oklahoma A. and M. College. 118 replies were received. Many useful catalogs, pamphlets and circulars were received. By checking this list carefully, the obsolete films were noted as well as the newer films produced during or since the war. Many films, which were listed previous to 1941, were listed as withdrawn. This was due either to the fact that the subject was considered obsolete or the manufacturer was revising the technical phases of the film. Many silent films were revised into sound films. Many sound films and film strips were prepared by the same company on the same subject with the idea of getting the highest degree of correlation possible.

The majority of the film depositories and distributing agencies are also listed. Many of these are located in the extension departments of the various state colleges and universities. Such depositories and distributing agencies do not produce films but have a wide variety of film subjects and other visual aids available on a small rental basis. Some also require a nominal registration fee. Others urge administrators to buy "A Program of Films". Such a plan is

usually the most economical if the depository has the films that the teacher desires.

In searching for similar studies, the earliest listed study in the Oklahoma A. and M. College library was the Charters Study. This study is not a thesis but a small publication: Motion Pictures and Youth (7).

It covers an investigation regarding the effect motion pictures have upon youth of all ages. The effects were classified under: attitudes, information, conduct and health. Several motion pictures were viewed by two groups; one being superior adults, the other children ranging from five to ten years old. The amount of information retained by the two groups is given in percentages. It shows that young children remember 50 to 60 percent of what they see. The children's attitudes were influenced by the type and frequency of shows. It was revealed that those who attended shows only once a week rated much higher in school deportment than those attending more often.

Similar results were found in checking the effect upon the children's emotions by the films which showed horror pictures, love scenes, etc.

Fulton's Study

W. R. Fulton, in 1939, completed a Master's thesis entitled:

Problems In Administration of Projected Visual Aids Based on Industrial Data (9). He made a study of the amount of projection equipment in Oklahoma high schools. His findings are: (1) Lack of competent operators, (2) Lack of finance, (3) Lack of knowledge on the part of the school boards and superintendents as to the many possibilities in visual projection equipment.

Films and distributing agencies are listed along with costs, sizes, and uses of the various machines. Photography, as listed by colleges as a course taught, is indicated by a table.

Most of his information was obtained by means of a questionnaire addressed to county superintendents, high school superintendent and presidents of institutions of higher learning. Tables showing sizes of various machines, costs, and films are also included.

The Barefoot Study (2)

In 1939, Olen G. Barefoot completed a study entitled: Audio-Visual Aids in Public Schools, which was his master's thesis. His study covers a survey of 8,806 school systems. He found 37,671 machines for picture projection, 11,501 radios, a thousand centralized sound systems, three-quarters of a million phonograph records and more than three million glass slides. A short history is given of the use of the phonograph record for instructional purposes. A short resume of radio and its place in the schools is also given. He

discusses sound films, slide films and projectors and adds that the wide-spread use of the sound motion pictures has been retarded because of the lack of variety and quality in educational sound films. He gives a good summary of costs of projectors, types of auditoriums for projection and costs of equipment. The writer summarized his thesis with ten factors to be considered when contemplating purchase of a projector.

Beckham's Study (3) entitled: The Use of Opaque Pictures in Visual Education

This was also a master's thesis produced in 1940. The writer conducted a survey of Oklahoma high schools to determine the number of teachers using various forms of pictures in their teaching. A number of teachers, principals, superintendents and others who were in summer school were interviewed. The object of the study was to determine the knowledge of visual aids that the teachers had access to in their teaching situations in their schools. The Teacher's Colleges that were listed in Educational Screen, that offered visual education courses were also mailed questionnaire forms. One hundred sixteen forms were sent and sixty-six returned. Sixty-two courses in visual education were offered in the summer of 1940. Three of the courses covered production of visual aids; fifty-two courses were devoted partly to production of visual aids. Forty instructors expressed their belief that a course should be given in teacher

training institutions covering the production of visual aids.

The writer concludes his thesis with the following recommendations:

1. The main reason opaque pictures are not used so extensively in Oklahoma is due chiefly to the lack of information on the teacher's part or the abundance of materials that might be used in this type of visual aid.
2. Every classroom teacher should make it a part of his training to take a course in the production of opaque pictures.

The Foreman Thesis (8)

George C. Foreman, in 1941, completed a thesis entitled: The Use of Still and Motion Pictures in Industrial Arts Classes. In this investigation the writer compiled a fairly complete list of films and depositories that distributed free or nearly free films, or rental films on industrial education subjects. He classifies the films under fifteen school shop subject headings. A rating sheet for the evaluation of films was worked out and twenty films were evaluated by graduate students during the summer of 1941. Slide films are included in the study but not slides or opaque-projection aids. He also gives as specific recommendations: (1) A three year cycle in showing films. The idea presented here was to select the films according to the age level, training and experience of the high school boys. (2) The establishment of an industrial film library. (3) The purchase of filmstrips and films. He recommends

that each school should purchase one or two films each year, where they already owned a projector. (4) The central storage and operation of equipment. (5) A college course in moving picture operation.

The Scott Thesis (17) The Use of Lantern Slides, Film Strips and Sound Films In Teaching Industrial Arts.

This study was completed in 1943. He discusses the technical phases of several varieties and types of visual aids. Besides lantern slides, film strips, silent and sound films, other aids, such as pictorial materials, maps, reproduction devices such as hectograph, mimeograph and multigraph were discussed. The correlation between the visual, auditory, visual-auditory and aids through activity and other school subjects were pointed out. He classifies audio-visual aids under fifteen headings such as blackboard, bulletin board, charts, sand table, flat pictures, graphs, etc. In giving suggestions for using visual aids in teaching, he advises that it is better to use a few pictures actually pertaining to the lesson than to show too many pictures. The writer, in commenting on the administration of the visual education program, recommends that the director should:

1. Have considerable administrative ability.
2. Be thoroughly familiar with the recent techniques of using audio-visual aids in the classroom.
3. He should have a wide acquaintance of the related subject matter.
 - a. He should keep the objectives of industrial arts education clearly in mind and select films in harmony with these objectives.

4. Have a thorough conception of the problems involved in carrying out a program of audio-visual instruction.
5. He should be mechanically minded.
6. He should be a counselor and advisor to the other teachers in regard to all related information concerning the audio-visual aids in their particular departments.

This writer compiled a list of companies or depositories that supplied filmstrips and slides. In his conclusions he recommends:

1. Beginning of a filmstrip library.
2. Beginning of a lantern slide library.
3. Beginning of a sound filmstrip library.
4. Beginning of a library of pictures to be shown in the delineascope.
5. Installation of a combination delineascope, lantern slide and filmstrip library.

CHAPTER II

USES AND PLACE OF VISUAL AIDS IN EDUCATION

The teacher should be constantly seeking new ways to broaden and enrich his technique. The problems of society are ever becoming more complex. The traditional methods of instruction are inadequate in the light of new educational philosophies.

Industry is constantly changing. Vast adjustments are being made daily to meet the present day needs of the public. Educators, administrators and others who are aware of these changes are revising the curriculum to enable the school to train the pupil to fit into the complex changes of this industrial world.

Visual aids are assuming a vast share of the burden in contributing to these curriculum changes. Teachers must see the definite relationship of the visual aids in use or in production to the needs of the subject matter in the curriculum. They must determine the most efficient way of attaining desirable educational objectives by having a definite conception of how the various types of visual aids are to be used. Brooker, (6, page 7) clearly points out this problem in his statement:

What the teacher gets out of the picture will depend on his own background and his particular purpose at that time. He may want to use the picture as the basis of a class discussion of the principles involved; or he may want to quiz the students on the points in the picture which go to make it a good set-up. Pictures must present simultaneously the material for many ideas; Words cannot do this.

School programs of the future will undoubtedly make a more extensive use of visual aids as a result of their extraordinary success. This development is inevitable because of the very nature of the teaching process. Teachers are making use of various accelerative devices to hasten the learning process. During the war there was tremendous pressure to train large masses of unskilled workers in technical operations used in war production and in the armed forces.

This thought was recognized by Greene, (14, page 9) in his comment of the value of visual education to present day educators:

It is perhaps the greatest single forward step after the invention of photography and the projection machine. It has been thought through by able thinkers. It commanded respect and compelled attention on a nation-wide scale, as nothing else had ever done up to that time. It was the first clear challenge to the serious scholars of the country to forget their skepticisms, to face the power of the picture, to recognize its inevitable role in educational future.

No responsible educator today would consider that visual aids reduce in any way the importance of the teacher. Rather they have discovered that through the use of films, that these various forms of visual aids assist them in meeting and overcoming many obstacles in the way of efficient teaching.

The Extent of Current Interest in Visual Aids

Dent, in his book: The Audio-Visual Handbook, makes this statement:

The development of sound pictures, sound filmstrips, radio programs,

sound recordings, reproducing and distributing equipment, the majority of which are being used extensively among schools, is bringing into use a comparative new term, "Audio-Visual". It is used to encompass almost the entire field of illustrative materials, visual aids, sound aids and the various combinations of the two.

Many educators feel that certain forms of visual aids have distinct advantages over other types. This may be true in certain educational situations. However, it is universally recognized that each form of visual aid has its place and there is a place for each in nearly every teaching situation. In some situations, one type of visual education will be found to be better than any other. Combinations of types are frequently desirable.

Public school administrators are continually studying the various types of projection machines. Much remains to be done in establishing an efficient visual education department, in the care and storage of equipment, the training of operators and the selection of a well-balanced film program based upon the needs of the local school. It is the duty of the teacher using the films, which are classified under the various subject headings in this report, to make the best and widest possible use of their available equipment.

Suggestions for the Use of Visual Aids in Industrial Arts

One of the first problems confronting the administrator of a school system after purchasing projection equipment, is that of suitable films, filmstrips and slides. It is often the case that his information

regarding sources of visual aids, is very limited, due to lack of having recent literature, catalogs and other information on the subject. The list of firms that distribute visual aids are described in Chapter III. This list will be helpful to the average director of visual education.

Building Up a File of Films and Visual Aid Information

The writer offers as a suggestion in obtaining complete information on industrial arts visual aids, that the teacher purchase an indexed card box containing five inch by eight inch cards. As information is obtained about each film, the name and other technical information should be typed on the face side of the card, with the film description on the back. In a year or two, the teacher would have much valuable data regarding almost any type of film of an industrial nature. Teachers in other departments of the school, e.g. social sciences, vocational agriculture, home economics, etc., could follow a similar plan. The cards of films that are withdrawn, because of being old or obsolete, could be replaced by descriptions of new films recently released or scheduled for an early release.

In addition to keeping a card index, the shop teacher should reserve a drawer in his filing cabinet to file catalogs, circulars and pamphlets concerning visual aids.

Magazines should not be overlooked. A good magazine such as, See and Hear, contains much valuable information on the correlation of visual aids with all other fields of education. It will also contain news of recent films and others soon to be released. These are invaluable in keeping film sources current. One or more good annuals which list films only also have their merits and have a place in the shop library.

Projection of the Pictures and Care of Equipment

It is the common practice of pupils to consider visual aids as a substitute for classwork. Films may at first excite interest as being a novelty but no sound educational program can be based upon a novelty. The teacher should learn to recognize visual aids that are rich with meaning and should be able to determine whether they will fit the needs of his particular class.

Struck points out several important things to be considered in the use of any type of visual aids. (21, page 248-249.)

- (1) In many cases the classroom or related subjects room, rather than the school auditorium or large visual-sensory aid room, is the ideal place to show slides or motion pictures because it gives the right atmosphere for learning.
- (2) Films can be shown with a suitable projector in the ordinary class or related subjects room or school shop in a satisfactory way provided that the shades are drawn and direct sunlight does not fall upon the windows.
- (3) If a standard screen is not available, a white wall, an ordinary bed-sheet or the white back of a wall map will serve the purpose.

- (4) Visual-sensory devices are most effective when they are correlated with the daily units of word and when pupils are held responsible for the results.
- (5) For many purposes the silent film is as helpful as the sound film, and still pictures as good as motion pictures.
- (6) The temptation to show too many shows at one time should be avoided; it is better to use a few good ones than to employ many of unequal value.
- (7) Full discussion before and after slides and films are used is greatly to be desired.
- (8) In order that the teacher may be well prepared, slides and films should be previewed.
- (9) In selecting pictures, slides or films select those that have inherent quality to bring out effectively what is to be taught, especially what is inaccessible in other forms of instruction.
- (10) Color greatly enhances the value of most pictures, It adds life and reality, which in turn increases interest and understanding.
- (11) Visual-sensory aids are most helpful when used as a tool or as a book with definite goals and with seriousness of purpose -- more than "exposure" is necessary.
- (12) Stress ability to analyze, proficiency to summarize and capacity to generalize what is taught through or with the aid of concrete experiences and visual-sensory aids.

Many of the administrative details connected with visual instruction require a closer study and more time than most teachers can spare from their regular classroom duties. It is recommended that school superintendents and principals select a faculty member as director of visual education for the entire school system. His training, background and experience should especially fit him for this position.

The responsibilities for the director of visual education require:
Dent, (8, page 181).

- (1) Technical knowledge of projection.
- (2) Acquaintance with the various types of projection equipment.
- (3) Knowledge of source of materials.
- (4) Ability at organization.
- (5) Willing to accept responsibilities in obtaining films and returning them.

The director should give special attention to the physical equipment of the building, such as floor plugs, outlets, shades and etc. An interesting and useful project that can be constructed in any school shop would be that of a cabinet to hold the projection equipment. Such a cabinet as that which is recommended could be designed to suit the individual needs of the school system where it is to be used. A recommended size, however, would be 24" wide, 42" high and 48" long, mounted on casters. The cabinet space would be divided into compartments to hold the projector itself, speaker, extension cord, oil can, plugs and extra projection bulbs and extra reel. Space should be provided for a rack to hold films. Since films are usually shipped in circular metal containers, a small rack is the most desirable. The chief advantage of this cabinet is that it can be rolled into the classroom where the film or visual aid is to be shown. The height of the cabinet enables one to use the top to place the projector on

during the process of projection. When not in use, it can be rolled into a storage closet or compartment where it can be kept locked. Its advantages are readily seen. The equipment is always localized in one place and will lessen the time of preparation for the projection of the picture.

The qualifications of the director of visual education, as stated by McKnown and Roberts, indicate that a large measure of the success of any program of visual education depends upon his assumption of definite responsibilities: (18, page 326)

- (1) The director should have administrative ability because he must set up the budget, supervise the clerical, mechanical and distributive force, coordinate activities, and perform many other duties of this nature.
- (2) He should be thoroughly acquainted with the methods of using audio-visual aids in the classroom. The instructors and supervisors will naturally look to the director for help and suggestions on the use of these materials. Therefore, he should be prepared to give this assistance.
- (3) He should have a wide acquaintance with the subject matter of various grades from primary through high school. If possible, a person who has had some experience in both the elementary grades and high school should be selected for the position.
- (4) He should have a clear and distinct understanding of the more important educational objectives and should insist that the audio-visual aids selected be in harmony with these objectives.
- (5) He should have a thorough knowledge of the problems involved in carrying on the audio-visual instruction program. These problems may range from the selection of simple material to architectural diagrams for suitable projection rooms.

- (6) He should be mechanically inclined because in many instances, especially in smaller schools, he will be called upon to operate and make minor repairs on the various types of equipment.
- (7) He should be responsible so that teachers will have no hesitancy in raising questions, making comments, or asking for materials and help. He should not only be able to teach teachers but also be able and willing to learn from them.

Other Factors to be Considered in Projecting Visual Aids

After the director of visual education has compiled a reliable list of films and addresses of firms and has brought his files up to date, there are several other factors to be given careful consideration before a projection of a visual aid can be carried out, which we will now take up:

- (1) The maturational level of films is not as yet fully worked out. The level of difficulty are fairly well understood in terms of words, but we do not have sufficient experience in the use of pictures. Learning through visual aids, involves different principles than learning through traditional methods. Each instructor who uses films is invited to check his own experience on this point. Brooker (6, page 8).
- (2) The teacher should plan his visual aid program on a long range basis. Visual aids should be ordered 90 or more days in advance. It is a sad mistake to order any film for just any date that is convenient for the lender. It should be used where it will contribute the most to the understanding of the subject.
- (3) The visual aid should be used directly in connection with the teaching of the subject to which it pertains.
- (4) Preparation of a film calendar. The director should work out a film calendar and pass along to the other teachers. This advance information will materially aid them to correlate the film directly with other aids and the textbook.

- (5) The director must be careful in having his projector in good mechanical condition. The picture aperture must be frequently checked. The manual of instructions, sent by the manufacturers, is usually the safest guide to follow in checking and caring for the equipment.
- (6) The director must exercise caution as to the types of film for different types of projectors. Sound films will be ruined if run on a silent projector, since they have slots only on one side. The silent films have slots on each side; thus if a sound film is run on a silent projector, the sprockets will perforate the sound track of the films; ruining it. All film containers usually carry a warning to this effect.
- (7) After a firm or agency has confirmed a date for projection, the teacher usually receives the film a day or two ahead of schedule. Sometimes the arrangement has been made to keep the films a short period of time, usually a week or less. The responsible director or teacher will endeavor to the best of his ability, to cooperate with the lending firm in returning films promptly. Only by such cooperation will the next user be able to get his films on time. Delays will throw his entire schedule off balance. Films that are ordered for the first week are practically valueless if the sender gets them out in April.
- (8) Before the projection of a film, the director should:
 - a. Mount the projector to the rear of the audience on a small table or similar article.
 - b. Arrange seating so that no one can obstruct the light beam of the projector.
 - c. Place the speaker just below the screen and usually twelve to fourteen inches high.
 - d. Focus the projector light beam and adjust the control of the sound to a pleasing and clear tone.
 - e. Test the projector for sound and clean the picture aperture.

- f. Wind the film carefully through the projector, checking the reel belts, and making sure the sprocket teeth engage the film.

The tension of the film is also important, otherwise the sound is faster or slower than the film, giving an unnaturalness to the film. If the tension is too tight, most projectors have an automatic release which stops machine to prevent tearing the film.

- g. Arrange for an assistant, usually a shop boy, to help check curtains, shades, lights, etc.
- h. Turn on the amplifier in advance of the projection, in order to warm up the tubes.
- i. Have on hand extra projection bulbs and spare sound exciter.

(9) During the projection of the film, the director should:

- a. Make frequent checks to see that the film is threading through the machine properly.
- b. Constantly check the sound level to maintain even tone and volume control.
- c. Check the keys or checks, which hold the infeed and out-feed reels in place. Sometimes these slip and the reel will fall to the floor, unwinding the film, sometimes breaking it, and causing an unnecessary delay in the projection.
- d. As a general rule, most distributing agencies and firms request that their films not be rewound after projection. This is usually the safest rule for following for the person of little or not any experience.

Film Selection and Evaluation

Gill, (13, page 97) offers the following factors to be considered in evaluating a film:

- (1) Truthfulness of the contents of the film - (Rely on opinions of evaluation committees of audio-visual research centers)

- (2) Suitability of the film to the grade levels in which it is to be used.
- (3) The up-to-dateness of the materials presented in the film.
- (4) The technical excellence of the film. Vocabulary, clarity, title (Appropriate to content?)
Condition of film, Sound distinct.
Film material well organized?
- (5) Teaching effectiveness
 - a. Does the use of the film stimulate interest?
 - b. How much advertising in the film?
 - c. What part is devoted to entertainment?
 - d. Is material presented unique?
- (6) The purpose for which the film is being used.
 - a. Sources of information concerning questions and problems raised by the pupils.
 - b. To secure emotional identification with particular groups or ideas.
 - c. As a review or clincher of ideas recently taught.
 - d. As an exploratory procedure to raise issues and questions.
- (7) The consistency of film content with the educational objectives of the unit of study under consideration.

CHAPTER III

LISTS OF FILMS FOR USE IN INDUSTRIAL ARTS CLASSES

The sources of films for industrial arts are lengthy and numerous. A list of 575 film producers or distributing agencies is included in this report. The available films, for each of the nineteen industrial arts subjects, are listed and described as to type and film content. By this arrangement the shop teacher can easily find almost any type of film suitable for his class. Many of the films are listed under more than one source. A great many may be obtained free, except payment of transportation charges. The company should be written for complete information before placing an order.

Sources of Educational Films

Educational films may be obtained from many sources. Many agencies rent them outright. Many industrial firms and corporations produce films, usually for purposes of advertising their products.

The U. S. Office of Education, along with several departments of the government, has films for distribution. These are usually placed in the film depositories of the extension centers of state colleges and universities. The majority of the films produced by industrial firms may be obtained from these extension centers. It is wiser to order the films either directly from the industrial firm or from the state college depository, than from a rental agency.

The fees, in most cases, are nominal. Films that contain an excess of advertising or propaganda effects should be avoided, if possible. Films which appear on approved lists compiled by evaluation committees of state departments of education, are very reliable and can be depended upon.

Method of Securing Film List

In building up a film or visual aid file, the teacher should write on official school stationery to the various firms listed. Information should be given completely and fully as to the kind of film wanted, size, type and length of time that the borrower wishes to keep the film. Some companies require a certificate of registration to be filled out; others require kind, make and model number of the projector.

In the beginning of this study, the following form card was prepared and mailed to 200 of the firms and companies that are listed in this report. Their response was very gratifying. 118 replies were received. From their pamphlets, catalogs, and circulars, the list of films arranged under the subject headings were completed.

Form Card Which Was Mailed to 200 Firms and Distributing Agencies That Handle or Produce Films

Stillwater, Oklahoma

April 22, 1946

Sirs: I am working on a Research Problem under the direction of Dr. DeWitt Hunt, Head, Department of Industrial Arts Education and Engineering Shopwork of the Oklahoma A. and M. College of this city. We plan to produce a 30-page bulletin on "The Use of Projected Pictures in Industrial Arts Classes." We need to bring up to date the department file of catalogs of films, film strips, slides, etc. Will you please send to the above address, your latest catalog or descriptive literature listing all pictures distributed by your firm.

Yours very sincerely,

Wilbur C. Jones

The films as listed are found described later in this chapter, along with the film source. This list is only suggestive. Each teacher is invited to check his own experience as to the grade placement. Many valuable films undoubtedly have been left off the list. Many films of general interest, such as those on safety, should be shown to all the groups in addition to those listed previously.

A LIST OF FIRMS THAT SUPPLY FILMS, FILM STRIPS AND SLIDES ON INDUSTRIAL ARTS AND RELATED FIELDS. (Those marked * indicated distributors only.)

1. Abrasives Co., Tacony and Freley Sts., Philadelphia, Pa.
2. Acme Machinery Co., 4553 St. Claire Ave., NE Cleveland, Ohio.
3. Adel Precision Products Corp., 10777 Van Owen, Burbank, California.
4. Aetna Casualty and Surety Co., Hartford, Conn.
5. Air Reduction Sales Co., 60 East 42nd St., New York 17, N. Y.
6. Aircraft War Production Council, Inc., 7046 Hollywood Blvd., Los Angeles, Calif.
7. Akin and Bagshaw, Inc., 2023 East Colfax Ave., Denver, Colo.
8. Allen Equipment Co., Kalamazoo, Mich.
9. Allegheny Ludlum Steel Corp., Brackenridge, Pa.
10. Alforfer Brothers, Publicity Dept., Peoria, Ill.
11. Allis-Chalmers Manufacturing Company, Milwaukee, Wisc.
12. Alpha Film Laboratories, 6000 Pimlico Road, Baltimore, Md.
13. Aluminum Company of America, Motion Picture Dept., 801 Gulf Building, Pittsburgh 19, Pa.
14. American Automobile Association, Washington, D. C.
15. American Brass Company, Waterbury, Conn.
16. American Can Company, 230 Park Ave., New York 17, N. Y.
17. American Council on Education, 744 Jackson Place, Washington 6, D.C.
18. American Crayon Company, Educational Dept., Sandusky, Ohio.
19. American Forest Products Industries, Inc., 1319 Eighteenth St., NW Washington 6, D. C.

20. American Agricultural Chemical Co., 50 Church St., New York, N. Y.
21. American Institute on Motion Pictures, Garrison Films, Inc., 1600 Broadway, New York City, N. Y. *
22. American Institute of Steel Construction, Inc., 200 Madison Ave., New York City, N. Y.
23. American Museum of Natural History, 77th St., and Central Park West, New York City, N. Y. *
24. American Red Cross, 1709 Washington Ave., St. Louis 3, Mo.
25. American Rolling Mills Co., 703 Curtis, Middleton, Ohio.
26. American Society of Bakery Engineers, Dept. of Visual Education, 208 Third S. E., Minneapolis 14, Minn.
27. American Society for Metals, 7301 Euclid Ave., Cleveland, Ohio.
28. American Telephone and Telegraph Co., 195 Broadway, New York City, N. Y. (See: Southwestern Bell Telephone Co., 405 N. Broadway, Oklahoma City)
29. American Transit Association, 292 Madison Ave., New York, N. Y.
30. American Viscose Corp., 350 Fifth Ave., New York City 1, N. Y.
31. American Walnut Manufacturing Association, 616 S. Mich. Ave., Chicago 5, Ill.
32. Anaconda Copper Mining Co., 25 Broadway, New York City, N. Y.
33. Andleur Film Company, Ozark Building, Kansas City, Mo. *
34. R. B. Annis, 1101 N. Delaware St., Indianapolis, Ind.
35. Anthracite Institute, 101 Park Ave., New York 17, N. Y.
36. Association of American Railroads, Washington, D. C.
37. Associated Cooperage Industries of America, Inc., 411 Olive St., St. Louis, Mo.
38. Associated Factory Mutual Fire Insurance Companies, Inspection Dept., 184 High St., Boston 10, Mass.
39. Association of Manufacturers of Chilled Car Wheels, 445 N. Sacramento Blvd., Chicago 12, Ill.

40. The Associated Sales Co., 3123 E. Jefferson Ave., Detroit, Mich.
41. Armour & Co., Motion Picture Bureau, 116 S. LaSalle St., Chicago, Ill.
42. Armstrong Paint and Varnish Works, 130 S. Kilbourn Ave., Chicago, Ill.
43. Asphalt Institute, 801 Second Avenue, New York City, N. Y.
44. Atchison, Topeka & Santa Fe Railway Co., 80 E. Jackson Blvd., Chicago 4, Ill.
45. Atkins, C. E. & Co., 402 S. Illinois St., Indianapolis, Ind.
46. Atlas Educational Films Co., Oak Park, Ill. *
47. Automobile Club of Southern California, Los Angeles, Calif.
48. Automobile Manufacturers Association, Transportation Bldg., Washington, 6 D. C.
49. Automotive Safety Foundation, Tower Bldg., Washington 5, D. C.
50. Audio Films Libraries, 661 Bloomington Ave., Bloomington, N.J.*
51. Audio-Visual Aids for Classrooms, Board of Education, Atlanta, Ga.
52. Audio-Visual Exchange Service, 223 Walton St., NW Atlanta, Ga.*
53. Bailey Film Service Company, 328 Markham Bldg., Chicago, Ill. *
54. Bakelite Corporation, 30 E. 42nd St., New York City, N. Y.
55. Ball Brothers, Muncie, Ind.
56. Baltimore Association of Commerce, 22 Light St., Baltimore, Md.
57. The Baltimore and Ohio Railroad Co., Baltimore, Md.
58. Bates Manufacturing Co., 30 Vesey St., New York 7, N. Y.
59. Bausch and Lomb Optical Co., 619 St. Paul St., Rochester, N. Y.
60. Bell Aircraft Corporation, 2050 Elmwood Ave., P.O. Box 1, Buffalo, N.Y
61. Becton, Dickinson and Co., Film Service Department, Rutherford, N.J.
62. Belgian Information Center, 630 Fifth Ave., New York 20, N.Y.

63. Bell & Howell Co., Filmsound Division, 1801 Larchmont Ave., Chicago, Ill. *
64. Behr-Manning Corporation, Division of Norton Co., Troy, N.Y.
65. Bell Telephone Company of Pennsylvania, Philadelphia, Pa.
66. Bendix Aviation Corporation, Fischer Bldg., Detroit, Mich.
67. Better Vision Institute, Inc., 630 Fifth Ave., Rockefeller Center, New York 20, N. Y.
68. Bell and Zollar Coal Company, Adv. Dept., 307 N. Mich. Ave., Chicago 1, Ill.
69. Bethlehem Steel Co., Bethlehem, Pa.
70. B. G. Corporation, The., 136 W. 52nd St., New York 19, N. Y.
71. Bike-Web Mfg. Co., 41 W. 25th St., Chicago 16, Ill.
72. Blue Book of Non-Theatrical Films, "One Thousand and One Films", The Educational Screen, 64 E. Lake St., Chicago, Ill. *
73. Boeing Airplane Co., Education Dept. Wichita 1, Kans.
74. Boots Aircraft Nut Corp., New Canaan, Conn.
75. Boonton Molding Co., Film Office, 122 E. 42nd St., New York, N. Y.
76. Boston University, School of Education, Division of Teaching Aids, 84 Exeter St., Boston 16, Mass.
77. Boy Scouts of America, 2 Park Ave., New York 16, N. Y.
78. Paul L. Brand, 816 Connecticut Ave., Washington 6, D.C.
79. Brandon Films, New York City, N. Y. *
80. Bray Studios, Inc., 729 Seventh Ave., New York City, N. Y. *
81. Breskin Publ. Co., Film Booking Dept., Chanin Bldg., 112 E. 42nd St., New York 17, N. Y. *
82. British Information Serv., 30 Rockefeller Plaza, New York, 20 N.Y.*
83. Brown Company, Berlin, N. H.
84. Bruce Dodson & Co., Kansas City, Mo.
85. Burton Holmes Films Co., 7510 N. Ashland Ave., Chicago 26, Ill. *

86. Business Education Visual Aids, Dept. 15c, 330 W. 72nd St.,
New York City, N. Y. *
87. Business Films, 2153 K St., NW Washington 7, D. C. *
88. Bureau of Mines, Experiment Station, 4800 Forbes St., Pittsburgh,
Pa. *
89. Bureau of Mines, Dept. of Interior, R.R. Sayers, Dir., Washington, D.C.
90. Bureau of Mines, Motion Picture Bureau, Petroleum Experiment Sta-
tion, Bartlesville, Oklahoma. *
91. Business Screen Inc., 157 E. Erie St., Chicago, Ill. (Publ. of
Film Index Only)
92. By*Products Ammonia, Educational & Research Bureau, 50 W. Broad
St., Columbus 15, Ohio.
93. Cabot, Godfrey L., Inc., 141 Milk, Boston 9, Mass.
94. Calhoun Co., 101 Marietta St., NW Atlanta 3, Ga.
95. Calumet Oil Co., 4321 S. Western Avenue, Chicago, Ill.
96. California Redwood Distributors Ltd., 35 E. Wacker Drive, Chicago, Ill.
97. The Calvin Co., 26th & Jefferson St., Kansas City, Mo.
98. Camera Shoppe, 1021 Pacific Ave., Tacoma, Wash. *
99. Camp Bell Films, Manhattan, Mont.
100. Cannon Electrical Dev. Co., 3209 Humbolt, Los Angeles, Calif.
101. Canadian Pacific Railway Co., Windsor Station, Montreal, Canada.
102. Caravel Films, Inc., 730 Fifth Avenue, New York City, N. Y. *
103. Carboloy Co., Inc., 11198 E. 8 Mile Road, Detroit, Mich.
104. Carborundum Co., The. Niagara Falls, N. Y.
105. Carlson Saw & Equipment Co., Braniff Bldg., Oklahoma City, Okla.
106. Case, The J. I. Co., Adv. Dept., Racine, Wisc.
107. Castle Distributing Corp. 135 S. LaSalla St., Chicago, Ill.*
108. Cast Iron Pipe Research Ass'n., 122 S. Mich. Ave., Chicago 3, Ill.
109. Catalin Corp., 1 Park Ave., New York 16, N. Y.
110. Caterpillar Tractor Co., Peoria 8, Ill.
111. Celanese Plastics Corp., 180 Madison Ave., New York City 16, N.Y.

112. Center for Safety Education, New York University, 20 Washington St., New York City, N. Y. *
113. Champion Spark Plug Co., Upton Ave., Toledo, Ohio.
114. Chevrolet Motor Co., Detroit, Mich. (See General Motors.) *
115. Chesapeake and Ohio Railroad, Adv. Dept., 3311 Terminal Bldg. Cleveland, Ohio.
116. Chicago, Rock Island and Pacific Railway, Pub. Office, Chicago, Ill.
117. Chicago Flexible Shaft Co., 5561 Roosevelt Road, Chicago, Ill.
118. Chicago Tribune, Public Service Bureau, 1 S. Dearborn St., Chicago 11, Ill.
119. Cine-Classic Library, 1040 Jefferson Ave., Brooklyn, N. Y. *
120. Cincinnati Milling and Grinding Machines, Inc., Cincinnati, Ohio.
121. Climax Molybdenum Co., 500 5th Ave., New York City 18, N. Y.
122. Cleveland Pneumatic Tool Co., 3781 E. 77th St., Cleveland, Ohio.
123. Greater Cleveland Safety Council, 207 Republic Bldg. Cleveland 15, Ohio.
124. Cleveland Twist Drill Co., 1242 E. 49th St., Cleveland, Ohio.
125. Coca Cola Company, local bottling plant.
126. Cocking Floyd W., 4757 Constance Drive, San Diego, Calif. *
127. College Film Center, 84 E. Randolph, Chicago 1, Ill. *
128. Columbia Pictures Corp., 729 7th Ave., New York 19, N. Y. *
129. Columbia Tool Steel Co., Chicago Heights, Ill.
130. Colton, Wendell P., Co., Chanin Bldg. 42nd St. & Lexington Ave., New York City, N. Y.
131. Commercial Films & Ross Roy, Inc., 1800 E. 30th St., Cleveland, Ohio.*
132. Conn, C. G., Limited, Elkhart, Ind.
133. Consolidated Aircraft Co., Lindbergh Field, San Diego, Calif.
134. Consolidated Vultee Aircraft Corp., San Diego, Calif.
135. 'Consult Your Architect', Motion Picture Council, 551 5th Ave., New York City, N. Y.

136. Constantine, Albert & Sons, Inc., 797 E. 135th St., New York, N.Y.
137. Chase Brass & Copper Co., Waterbury 91, Conn. (No films)
138. Copeland & Thompson, Inc., 206 5th Ave., New York City, N. Y.
139. Coronet Productions, 919 N. Mich. Ave., Chicago, Ill.
140. Cosmopolitan Film Libraries, 3248 Gratiot Ave., Detroit, Mich.
141. Crane Co., 836 S. Mich. Ave., Chicago 5, Ill.
142. Creative Educational Society, Coughlan Bldg., Mankato, Minn.
143. Chrysler Corp., Technical Training Division, Dept. Of ind. edu, Detroit, Mich.
144. Curtiss-Wright Corp. Propeller Division, Public Relations Dept., Caldwell, N. J.
145. Curtiss-Wright Corp., 30 Rockefeller Plaza, New York 20, N. Y.
146. Damrow Brothers Co., Fond du Lack, Wisc.
147. Dartnell Corp. 4660 Ravenswood Ave., Chicago, Ill.
148. Davey Tree Expert Co., Kent, Ohio.
149. Davidson Transfer & Storage Co., 6201 Pulaski Highway, Baltimore 3, Md.
150. D. T. Davis Co., 231 W. Short St., Lexington, Ky.
151. John Deere & Co., Moline, Ill.
152. Delaware Safety Council, 2169 Du Pont Bldg., Wilmington 41, Del.
153. Delaware State Police, P.O. Box 629, Wilmington 99, Del.
154. De Forrests Training, 2533 N. Ashland Ave., Chicago, Ill.
155. De Noyer-Geppert Co., 5235 Ravenswood Ave., Chicago 40, Ill.
156. Department of Conservation, 121 State House, Springfield, Ill.*
157. Detroit Board of Education, Detroit, Mich.
158. Denver & Rio Grande Western Railroad, Rio Grande Bldg. Denver 1, Colo.
159. De Frenes & Co., 1909 Buttonwood St., Philadelphia, Pa. *
160. De Vry Films & Laboratories, De Vry Corp., 1111 Armitage Ave., Chicago, Ill.*

161. De Walt Woodworking Machine Company.
162. The Distributor's Group, Inc. 756 W. Peachtree, N.W., Atlanta, Ga.
163. Dodson, Bruce & Co., Kansas City, Mo.
164. Douglas Aircraft Co., Inc., Industrial Training Department, 3000 Ocean Park Blvd. Santa Monica, Calif.
165. Douglas Fir Plywood Ass'n., 1907 Daily News Bldg. Chicago 6, Ill.
166. Douglas Fir Plywood Ass'n., 301 Tacoma Bldg., Tacoma 2, Wash.
167. Dow Chemical Co., Midland, Mich.
168. Dudley, W. H., Visual Ed. Services, Inc., 736 S. Wabash Ave., Chicago, Ill.
169. Du Pont Semesan Co. Inc., Nemours Bldg., Wilmington 98, Del.
170. Duquesne Light Co., 435 Sixth Ave., Pittsburgh 19, Pa.
171. Eastman Kodak Co., Rochester, N. Y. *
172. Eastman 16MM Pictures System, Inc., 707 Putnam Bldg. Davenport, Iowa.*
173. Eberhard Faber Pencil Co., Film Booking Dept., 37 Greenpoint Ave., Brooklyn 22, N. Y.
174. Eberle Tanning Co., Westfield, Pa.
175. Edison, Thos. A., Inc., West Orange, N. J.
176. Edison Electric Institute, 420 Lexington Ave., New York 17, N. Y.
177. Edison Pictures System, 330 W. 42nd St., New York 18, N. Y.
178. Educators Progress Service, Randolph, Wisc. (Index only) *
179. Edited Pictures Systems, Inc., 330 W. 42nd St., New York City, N. Y. *
180. Educational Films Service, 77 Woolnough Ave., Battlecreek, Mich. *
181. Educational Screen, The, Morton, Ill. (Catalog of film sources) *
182. E. I. Du Pont De Nemours & Co., Motion Picture Bureau, Wilmington 98, Del.
183. Electric Arc Co., 152 Jelliff Ave., Newark, N. J.
184. Electric Utility Co.

185. Electro-Chemical Engineering Co., 114 Liberty St., New York City, N.Y.
186. Electric Motor Corp., 1211-1221 State, Racine, Wisc.
187. Employers Mutual Insurance Co., Safety Engineering Dept. Wausau, Wisc.
188. Encyclopedia Britannica Films, Inc., 20 N. Wacker Drive, Chicago, 6 Ill.*
189. Envirude Motors, Milwaukee, Wisc.
190. Erpi Classroom Films, 35-11 35th Ave., Long Island, N. Y. *
191. Farm Credit Administration, Wichita 2, Kansas.
192. Federal Housing Administration, Motion Pictures, Washington, D. C.
193. Federal Products Corp., 1144 Eddy St., Providence 1, Rhode Island.
194. Federal Radio Education Comm., U.S. Office of Education, Washington, D.C.*
195. Federal Works Agency, Public Roads Administration, Washington 25, D.C.
196. Fellow Gear Shaper Co., Springfield, Vermont.
197. Films Information Service, 535 Hurst Tower Bldg., Baltimore, Md.*
198. Films of Commerce Co., Inc., 35th W. 44th St., New York City, N. Y.*
199. Films Incorporated, 330 W. 42nd St., New York 18, N. Y. *
200. Film Preview, 1504 Hennepin Ave., Minneapolis 3, Minn.
201. Film Production Co., 3650 N. Fremont Ave., Minneapolis, Minn.*
202. Films-Tel, Inc., (Division of International Theatrical & Television Corp.) 25 W. 45th St., New York 19, N. Y. *
203. Filmtext Productions, 280 Scenic Ave., Piedmont 11, Calif.
204. Fir Door Institute, Tacoma Bldg., Tacoma 2, Wash.
205. Fireman's Fund Indemnity Co., 116 John St., New York, N. Y.
206. Firestone Tire & Rubber Co., 1200 Firestone Pkwy., Akron 17, Ohio.
207. Fisher Body Division, General Motors Corp., 3044 W. Grand & Blvd., Detroit, Mich.
208. Florez Inc., 815 Bates St., Detroit, Mich.
209. Ford Motor Company, Oklahoma City, Okla.
210. Ford Motor Company, Dept. Pub. Relations, 3000 Schaefer Road, Dearborn, Mich.
211. Forest Service, U.S. Dept. of Agriculture, Washington, D. C.

212. Formica Insulation Co., 4614 Spring Grove, Cincinnati 32, Ohio.
213. Franklin Institute, 251 S. 22nd Street, Philadelphia 3, Pa. *
214. Franz Baking Co., Portland, Oregon.
215. Freeport Sulphur Co., 122 E. 42nd, New York City 17, N. Y.
216. Frisco Lines, 906 Olive St., St. Louis 1, Mo.
217. Frauehauf Trailer Co., Detroit 32, Mich.
218. Fruit of the Loom Mill, 712 Hospital Trust Bldg. Providence, R.I.
219. Fuller Brush Co., 3580 Main, Hartford, Conn.
220. The Fulton Sylphon Co., Knoxville 4, Tenn.
221. Ganz, W. J. Co. (Connected with: Radio Corp. of America, RCA Div., Camden, N. J.) 19th E. 47th St., New York City, N. Y.
222. Garrett, Paul, Dir. of Pub. Relations, General Motors Corp., 1755 Broadway, New York City, N. Y.
223. Garrison Film Distributors, Inc., 1700 Broadway, New York City, N.Y.*
224. Gisholt Machine Co., 1245 E. Washington Ave., Madison 3, Wisc.
225. General Electric Co., Vis. Instruction Sec., Schenectady, N. Y.
226. General Motors Corp., 1775 Broadway, Pub. Relations Dept., New York City, N. Y.
227. General Tire and Rubber Co., Englewood Ave., Akron 9, Ohio.
228. State of Georgia, State Highway Patrol, Atlanta, Ga.
229. Glatfelter Co., P. H., Spring Grove, Pa.*
230. Goodrich, the B. F., Co., Advertising Dept., Akron, Ohio.
231. Goodyear Tire and Rubber Co., Akron, Ohio.
232. Government of India Information Service, 3633 16th St., N.W., Washington 9, D. C.
233. Gregg Publishing Co., 270 Madison Ave., New York City, N. Y.

- 234. Griffin Wheel Co., 410 N. Mich. Ave., Chicago, Ill.
- 235. Gulblehn, Walter O., Inc., 34 W. 45th St., New York City, N. Y.
- 236. Hammermill Paper Company, Erie, Pa.
- 237. John Hancock Okfe Insurance Co., Boston, Mass.
- 238. Harbinson-Walker Refractories Co., Farmers Bank Bldg., Pittsburgh, Pa.
- 239. Harmon Foundation Inc., 140 Nassau St., New York City, N. Y. *
- 240. Harnischfeger Corp., 4400 W. National Avenue, Milwaukee 14, Wisc.
- 241. Harvard Film Service, Biological Laboratories, Cambridge, Mass.
- 242. Harvill Corp., 6251 W. Century Blvd., Los Angeles, California.
- 243. Haselton, Guy D., Traveletts, 7936 Santa Monica Blvd., Hollywood, Calif.
- 244. Haynes Stellite Co., 614 National Bank of Tulsa Bldg., 320 S. Boston Ave., Tulsa 3, Oklahoma.
- 245. Hercules Powder Co., Inc., Advertising Dept. Wilmington, Del.
- 246. Hebert Studios, 55 Allyn, Hartford, Conn.
- 247. Hills-McCanna Co., 3025 N. Western, Chicago, Illinois.
- 248. Hill, Howard, Motion Picture Service, 280 Scenid-Piedmont, Oakland, Calif.
- 249. Milton H. Hill, Inc., 922 Shipley St., Wilmington 7, Del.
- 250. Hoffberg, J. H. Co., Inc. 829 Seventh Ave., New York, N. Y.
- 251. Homasote Co., Trenton, N. J.
- 252. Howard Clothes, Inc., 170 Tillary, Brooklyn, N. Y.
- 253. Hugo Meyer and Co., 39th W. 60th St., New York, N. Y.
- 254. Ideal Pictures Corp. 28 E. 8th St., Chicago 5, Ill. *
- 255. Illinois Agricultural Association, 608 S. Dearborn St., Chicago, 5 Ill.
- 256. Illinois Institute of Technology, 3300 Federal, Chicago 16, Ill.
- 257. Illuminating Engineering Society, 51 Madison Ave., New York 10, N.Y.
- 258. Indiana University, Director of Extension Services, Bloomington, Ind.*

259. Industrial Films, 1558 N. Vine St., Hollywood 28, Calif.
260. Industrial Research Institute of Humane Engineering, George F. Whipple, Fifty Beacon St., Boston, Mass.*
261. Institute of Makers of Explosives, 103 Park Avenue, New York 17, N.Y.
262. Institutional Cinema Service, Inc., 1560 Broadway, New York 19, N.Y.
263. International Acetylene Ass'n., 30 E. 42nd St., New York 17, N.Y.
264. International Ass'n. of Electrical Inspectors, 612 N. Mich. Ave., (Public Relations Comm.) Chicago, Ill.*
265. International Film Bureau, 84 E. Randolph St., Chicago 1, Ill.
266. International Harvester Co., Adv. Dept., 180 N. Mich. Ave., Chicago 1, Ill.
267. International Nickel Co., Inc., 67 Wall St., New York City 5, N. Y.
268. Interstate Oil Compact Commission, Box 3185, State Capitol, Oklahoma City, Oklahoma
269. Iowa State College, Visual Instruction Service, Ames, Iowa.
270. Jam Handy Organization, 2821 E. Grand Blvd., Detroit, Mich.
271. Jenkins Brothers, Inc., 80 White St., New York City 13, N. Y.
272. Johns-Mansville, 22 E. 40th at Madison Ave., New York City 16, N.Y.
273. Johnson & Johnson, New Brunswick, N. J.
274. Jones & Lamson Machine Co., Springfield, Vermont.
275. Kansas City Public Service Co., 728 Del. St., Kansas City 13, Mo.
276. Kansas City Safety Council, 419 Dwight Bldg., Kansas City, Mo.
277. Kansas State Highway Commission, Topeka, Kansas.
278. Kansas City Sound Service Co., 926 McGee St., Kansas City 6, Mo.
279. Kearney & Tracker Corp., 6748 W. Nat'l. Ave., Milwaukee 14, Wisc.
280. Kerr Glass Mfg. Co., 710 Title Insurance Bldg., Los Angeles 13, Calif.
or Sand Springs, Okla.

281. The Keystone View Co., Meadville, Pa.
282. Keystone Steel & Wire Co., Peoria, Ill.
283. Walter Kidde News Bureau, 40 E. 34th St., New York 6, N. Y.
284. King Cole's Sound Service, Inc., 203 E. 26th St., New York 10, N.Y.
285. Knaus, Frank, 2113 Parkside Ave., Los Angeles, Calif.
286. Knowledge Builders, Classroom Films, 130 W. 46th St., New York, N.Y.
287. Kodoscope Libraries, Inc., 33 W. 42nd St., New York City, N. Y.
288. H. M. Kuckuk, 4106 N. 24th Place, Milwaukee, Wisc.
289. Kunz Motion picture Service, 1319 Vine St., Philadelphia 7, Pa.
290. Lake Shore Mines, Ltd., Mr. C. E. McKnight, Safety Director,
Kirkland Lake, Ont., Canada.
291. Lansing Safety Council, Lansing, Mich.
292. Lennox Pottery, Inc., Trenton 5, N. J.
293. R. G. LeTourneau, Inc., Peoria, Ill.
294. Levers Bros., Education Bureau, 50 Memorial Drive, Cambridge 9, Mass.
295. Lewis Film Service, 105 E. First St., Wichita, Kansas. *
296. Liberty Mutual Insurance Co., Boston, Mass.
297. Lincoln Electric Co., 12818 Coit Road, Cleveland, Ohio.
298. Linde Air Products Co., 614 National Bank Bldg. of Tulsa, 320 S.
Boston Ave., Tulsa 3, Oklahoma.
299. Lindberg Engineering Company, 2450 Hubbard St., Chicago 12, Ill.
300. Lockheed Aircraft Corp., Promotion Dept., 1705 Victory Pl. Burbank, Calif
301. Lukens Steel Co., Coatesville, Pa.
302. Lumbermen's Mutual Casualty Co., Mutual Ins. Bldg., Chicago 40, Ill.
303. Mahogany Ass'n, Inc., 75 E. Wacker Drive, Chicago 1, Ill.
304. Mallinckrodt Chemical Works, Second & Mallinckrodt St., St. Louis, Mo.

305. Mario Mfg. Co., 390 4th Ave., New York City, N. Y.
306. Massachusetts General Hospital, Fracture Clinic, Boston, Mass.
307. Massachusetts Institute of Technology, Cambridge, Mass. *
308. R. M. McFarland & Associates, 520 N. Mich. Ave., Chicago 11, Ill.
309. Mechanical Brick Handling Corp., Lancaster, Pa. P.O. Box 239.
310. Mechanite Research Institute of America, Pershing Bldg., New Rochelle, N. Y.
311. Mellville Shoe Corp., Adv. Dept., 555 Ave., New York, N. Y.
312. Methods Engineering Council, Wood and Franklin St., Pittsburgh, Pa.
313. McHenry Educational Films, 64 E. Jackson, Chicago 4, Ill.
314. Metropolitan Life Ins. Co., 1 Madison Ave., New York 10, N. Y.
315. Metropolitan Museum of Art., Fifth Ave. at 82nd St., New York, N.Y.*
316. Michigan Bell Telephone Co., 1365 Cass Ave., Detroit 26, Mich.
317. Michigan Dept. of Conservation, Room 328, State Office Bldg., Lansing 13, Mich.
318. Michigan Seamless Tube Co., South Lyon, Michigan.
319. Micromatic Hone Corp., 8100 Schoolcraft Ave., Detroit 4, Mich.
320. Micro Switch Division of First Ind. Corp., 204 S. Chicago, Ave., Freeport, Ill.
321. Mid-Continent Pictures Corp., 4327 Duncan Ave., St. Louis, Mo. *
322. Midwest Rubber Reclaiming Co., East St. Louis, Ill.
323. Mine Safety Appliances Co., Braddock, Thomas & Meade Sts., Pittsburgh, Pa.
324. Minneapolis-Moline Power Implement Co., Adv. Dept., Minneapolis, Minn.
325. Greater Minneapolis Safety Council, 1210 McKnight Bldg. Minneapolis 1, Minn.
326. Missouri-Pacific Lines, 1506 Missouri Pacific Building, St. Louis 1, Mo.
327. Missouri State Highway Patrol, Jefferson City, Mo.
328. Modern plastics, Chonin Bldg., 122 E. 42nd St., New York, N. Y.
329. Modern Sound Pictures, Inc., 1219 Farnam St., Omaha 2, Neb.
330. Modern Talking Picture Service, 12th At Lamar, Austin, Texas * also 9 Rockefeller Plaza, New York City, 20 N.Y.
331. Mogull's Camera & Film Exchange, 68 W. 48th St., New York 19, N.Y.

332. Mohawk Carpet Mills, Inc., Adv. Dept., Amsterdam, New York
333. Monarch Machine Tool Co., Sydney, Ohio.
334. Mrs. J. H. Moore, Chief of Visual Instruction Bureau, University of Texas, Austin, Texas.
335. Motion Picture & Visual Education Equip. Co., 196 South Hudson, Oklahoma City, Oklahoma. *
336. Murray Corporation of America, 7700 Russell, Detroit 11, Mich.
337. Meyer, Hugo, & Co., 38 W. 60th St., New York City, N. Y.
338. McLarty Motion Picture Service, Certain Teed Bldg., Military Road, Buffalo, N. Y. *
339. National Association of Manufacturers, 14 W. 49th St., New York, N.Y.*
340. National Better Light Better Sight Bureau, 420 Lexington Ave., N.Y.17, N.Y.
341. National Braille Press Inc., 40 Congress St., Boston, Mass.
342. National Bureau of Casualty & Surety Underwriters, 1 Park Avenue, New York City, N. Y.
343. National Carbon Co., Inc., Cleveland, Ohio or 30 E.42nd St., N.Y., N.Y.
344. The National City Lines, Inc., 20 N. Wacker Drive, Chicago 6, Ill.
345. National Conservation Bureau, Edu. Div., 60 John Street, New York 7, N.Y.
346. National Council of Y.M.C.A. Motion Pictures Bureau, 347 Madison Ave., New York City, N. Y. *
347. National Film Board of Canada, 84 E.Randolph St., Chicago 1, Ill. *
348. National Fire Protection Ass'n., 60 Batterymarch St., Boston, Mass.
349. Nat'l. Hardwood Lumber Ass'n., 2408 Buckingham Bldg. 50 E. Van Buren St., Chicago, Ill.
350. National Machinery Co., 565 W. Washington, Chicago, Ill.
351. National Motion Pictures Co., Mooresville, Ind.
352. National Paint, Varnish and Lacquer Ass'n., 2201 New York Ave., N.W. Washington, D. C.
353. National Retailers Mutual Ins. Co., Film Distribution Dept., 7450 Sheridan Road, Chicago 40, Ill.
354. National Safety Council, 20 N. Wacker Drive, Chicago, Ill.*
355. National Ski Patrol System, 415 Lexington Ave., New York 17, N. Y.
356. National Society for the Prevention of Blindness, 1790 Broadway, New York City, N. Y.
357. National Tube Co., Frick Bldg. Pittsburgh, Pa. Subsidiary of United States Steel Corporation.

- 358. National Tuberculosis Ass'n., 1790 Broadway, New York 19, N.Y.
- 359. National Youth Administration, 1010 Moher Bldg., Washington, D.C.
- 360. New Jersey Dept. of Motor Vehicles, Div. of Safety Edu., Trenton 7, N.J.
- 361. New Jersey Zinc Co., 160 Front, New York City 7, N. Y.
- 362. The Port of New York Authority, 111 8th Ave., New York 11, N. Y.
- 363. New York Central System, Motion Picture Bureau, 230 Park Ave., New York 17, N. Y.
- 364. The New York, New Haven & Hartford Railroad Co., Grand Central Terminal, New York 17, N. Y.
- 365. New York St. Dept. of Health, Bureau of Visual Edu. Instruction, Albany 6,
- 366. New York State War Council, Film Div., 353 Broadway, Albany 7, N. Y.
- 367. New York University, College of Engineering, University Heights, N.Y. *
- 368. Newark Safety Council, 24 Branford Place, Newark 2, N. J.
- 369. North American Aviation Co., Inc., 5701 Imerial Hwys. Inglewood, Calif.
- 370. North Dakota Highway Patrol, Bismarck, N. D.
- 371. Norton Abrasives, Norton Co., 1 New Bond St., Worcester 6, Mass.
- 372. Norfolk & Western Railway Co., Roanoke, Va.
- 373. Nu-Art Films, Inc., 145 W. 45th St., New York 19, N. Y.
- 374. Office of War Information. (Official agency discontinued but films remain on deposit in 300 commercial and educational film depositories.)
- 375. Ohio Dept. of Highways, Div. of Traffic & Safety, State Office Bldg., Columbus 15, Ohio.
- 376. Ohio Farm Bureau Federation, 246 N. High St., Columbus, Ohio.
- 377. Ohio Leather Co., 1052 N. State St., Girard, Ohio.
- 378. Oklahoma Visual Edu. Co., 1100 N. W. 22nd St., Oklahoma City, Okla.*
- 379. Oklahoma A. & M. College, Stillwater, Oklahoma. *
- 380. Okonite Co., 501 Fifth Avenue, New York 17, N. Y.
- 381. Otis Elevator Co., 260 11th Ave., New York, N. Y.
- 382. Owens-Illinois Glass Co., Film Div., Toledo 1, Ohio.
- 383. Packard Motor Co., 1580 E. Grand Blvd., Detroit 32, Mich.
- 384. Commonwealth of Pennsylvania, Bureau of Highway Safety, Harrisburg, Pa.
- 385. Pennsylvania State College, Central Extension Office, State College, Pa.*
- 386. Perfect Circle Co., S. Washington St., Hagerstown, Ind.
- 387. Pictorial Films, Inc., RKO Bldg., New York 20, N. Y. *

- 388. Pinkney Film Service, 1028 Forbes St., Pittsburgh, Pa. *
- 389. Pioneer Parachute Co., Manchester, Conn.
- 390. Pittsburgh Plate Glass Co., 2200 Grant Bldg., Pittsburgh 19, Pa.
- 391. Phelps-Dodge Refining Corp., 40 Wall St., New York City 5, N. Y.
- 392. Photo Lab. Inc., 3825 Georgia Ave., N.W. Washington 11, D. C.
- 393. Photo & Sound, Inc. 153 Kearney St., San Francisco, California.
- 394. Photoart House, 844 N. Planinton Ave., Milwaukee, Wisc.
- 395. Plomb Tool Co., 2209 Santa Fe Ave., Los Angeles 54, Calif.
- 396. Plymouth Motor Co., Detroit, Mich.
- 397. Portland Cement Ass'n., 33 W. Grand Ave., Chicago, Ill.
- 398. Porter-Cable Machine Co., 1714 N. Salina St., Syracuse, N. Y.
- 399. Post Pictures Corp., 723 7th Ave., New York City, N. Y. *
- 400. Pratt & Whitney Aircraft Corp., Div. of United Aircraft Corp.,
- 401. Prime Mfg. Co., Electrical Div., 1669 S. 1st Street, Milwaukee 4, Wisc.
- 402. Princeton Film Center, 55 Mountain Ave., Princeton, N. J. *
- 403. Protectoseal Co., 1920 S. Western Avenue., Chicago 8, Ill.
- 404. Pullman Company, 220 S. State, Room 1914, Chicago 4, Ill.
- 405. Purdue University, Gen. Eng. Dept., Lafayette, Ind. *
- 406. Pure Okl Co., 35 E. Wacker Drive, Chicago 1, Ill.
- 407. Purinton, Robert F., 4404 42nd St., San Diego, California.
- 408. Purolator Products, Inc., 365 Freylinghuysen Ave., Newark 5, N. J.
- 409. Pyrene Mfg. Co., Sales Dept., 560 Belmont Ave., New York City, N. Y.
- 410. Quimby Pump Co., 340 Thomas St., Newark, N. J.
- 411. Radio Corporation of America, Front and Cooper Sts., Camden, N. J.
- 412. Radio Corporation of America, New York, N. Y.
- 413. Rarig Motion Picture Co., 5514 University Way, Seattle 5, Wash.
- 414. Ray-Bell Films, Inc., 2269 Ford Parkway, St. Paul, Minn. *
- 415. Reading Iron Co., 401 N. Broadway St., Philadelphia, Pa.
- 416. Redwood Empire Ass'n., 85 Post St., San Francisco, Calif.
- 417. Religious Film Ass'n., Inc., 297 4th Ave., New York City 10, N. Y.
- 418. Religious Motion Pictures Foundation, Inc., 140 Nassau St.,
Philadelphia, Pa. *
- 419. Remington Arms Co., Inc., Bridgeport, Conn.
- 420. Remington Rand, Inc., Systems & Methods of Research Dept. 465
Washington St., Buffalo 5, N. Y.

- 421. Republic Steel Corporation, Rep. Bldg., Cleveland, Ohio.
- 422. Rhodes, J. H. Co., 157 W. Austin Ave., New York City, N. Y.
- 423. Roebling's, John A., & Sons, 640 S. Broad, Trenton, N. J.
- 424. Rockwood Sprinkler Co., Waterfog Div., 38 Harlow St., Worchester, Mass.
- 425. Rohm & Haas Co., Washington Square, Philadelphia, Pa.
- 426. Rolab Photo Service Laboratories, Sandy Hook, Conn.
- 427. Ross Roy Inc., 275 E. Jefferson Ave., Detroit, Mich.
- 428. Rothacker Film Corp., Chicago, Ill. *
- 429. Rowland Rogers Picture Serv., 400 New York Ave., Huntington, L.I., N.Y.
- 430. Ruberoid Co., 500 5th Ave., New York City, N. Y.
- 431. Rural Electrification Adm., Boatsmen's Bank Bldg., St. Louis 2, Mo.
- 432. Saginaw Steering Gear Div., General Motors, Saginaw, Mich.
- 433. San Diego Police Dept., Educational Bureau, Traffic Div., 10th & B Sts., San Diego, Calif.
- 434. San Francisco Chapter National Safety Council, 58 Sutter St., San Francisco 4, Calif.
- 435. Santa Fe Railway, 80 E. Jackson Blvd., Chicago, Ill.
- 436. Save the Surface Campaign, 2201 New York Ave., N.W. Washington, D.C.
- 437. Sazin, Henry, 723 7th Ave., New York City, N. Y.
- 438. Scintilla Magneto Division, Bendix Aviation Corp., Sydney, N. Y.
- 439. School Films Inc., 7936 Santa Monica Blvd., Los Angeles, Calif.
- 440. Sears, Roebuck & Co., Foundation, Education Publicity Dept., Chicago, Ill. (See Vernard Organization)
- 441. Sentinel Radio Corp., 2020 Ridge Ave., Evanston, Ill.
- 442. Service Engraving Co., 85 W. Canfield Ave., Detroit, Mich.
- 443. Sinclair Refining Co., Merchandising Mgr., 630 5th Ave., New York, N. Y.
- 444. Singer Sewing Machine Co., Singer Bldg., New York City, N. Y.
- 445. Sisalkraft Co., 205 W. Wacker Drive, Chicago 6, Ill.
- 446. Shell Oil Co., 50 W. 50th St., New York City, N. Y.
- 447. Smith & Sons Carpet Co., Alexander, Yonkeral, N. Y.
- 448. The Society for Visual Education, 100 E. Ohio St., Chicago, Ill.
- 449. Solow, Sidney Paul, & Consolidated Film Industries, Hollywood, Calif. *
- 450. Socony Vacuum Co., 26 Broadway, New York City 4, N. Y.

- 451. Soil Conservation Service, 3500 Cleburne Road, Ft. Worth, Texas.
- 452. Sound Masters, Inc., 165 W. 46th St., New York City, N. Y.
- 453. South Bend Lathe Works, South Bend 22, Ind.
- 454. Southern Cypress Manufacturer's Ass'n., 721 Barnett Nat'l Bank Bldg., Jacksonville, Fla.
- 455. Southern Pine Ass'n., New Orleans, La., P. O. Box 1170.
- 456. Southern Visual Equipment Co., 492 S. Second St., Memphis 2, Tenn.
- 457. Dr. Kellogg Speed, 122 S. Michigan Ave., Chicago 3, Ill.
- 458. Sperry Gyroscope Co., Inc., Central Film Service, Great Neck Long Island, N. Y.
- 459. Sportsman's Service Bureau, Sporting Arms & Ammunitions Manufacturers' Institute, 103 Park Ave., New York 17, N. Y.
- 460. Spot Films Productions, Inc. 339 E. 48th St., New York City, N.Y. *
- 461. Standard Knapp Corp., 221 N. La Salle St., Chicago 1, Ill.
- 462. Standard Machinery Co., Providence, R. I.
- 463. Standard Oil Company of California.
- 464. Standard Oil Company of Indiana, 910 S. Mich. Ave., Chicago 80, Ill.
- 465. Standard Oil Company of New Jersey, 26 Broadway, New York City 4, N.Y.
- 466. State Motor Vehicle Comm., Trenton, N. J.
- 467. Stevens Defense Industries School, Castle Stevens, Hoboken, N. J.
- 468. Stillfilm, Inc., 8443 Melrose Ave., Hollywood 46, Calif.
- 469. St. Joseph Lead Co., 250 Park Ave., New York City 17, N. Y.
- 470. Structural Clay Products Co., 120 Welch Ave., Ames, Iowa.
- 471. Superheater Co., 60 E. 42nd St., New York City 17, N. Y.
- 472. Sun Oil Co., Sales Promotion Dept., 1608 Walnut St., Philadelphia, Pa.
- 473. Sunray Films, Inc., 2108 Payne Ave., Cleveland, Ohio.
- 474. Superior Coach Corp., Lima, Ohio.
- 475. Swank Motion Pictures, 614 N. Skinker Blvd., St. Louis 5, Mo.
- 476. Swift & Co., Public Relations Dept., Union Stockyards, Chicago, Ill.
- 477. Syndicate Store Merchandiser, 79 Madison Ave., New York 16, N. Y.
- 478. Tanner's Council of America, 100 Gold St., New York 7, N. Y.
- 479. Teaching Aids Exchange, 108 N. California, Stockton, Calif. *
- 480. Teaching Film Custodians, Inc., 25 W. 43rd St., New York 18, N. Y.

481. Tennessee Valley Authority, Forestry Relations Dept., Norris, Tenn.
482. Texas Gulf Sulphur Co., (See U. S. B. M.)
483. Texas Company, 2310 S. Lamar St., Dallas 2, Texas.
484. Texas Technology College, Visual Education Dept., Lubbock, Texas.
485. Texaco Co., 135 E. 42nd St., New York 17, N. Y.
486. Textile Machine Works, Reading, Pa., P. O. Box 94.
487. Thermoid Rubber Co., 200 Whitehead Road, Trenton 6, N. J.
488. Thompson Products, Inc., Aircraft Accessories Div., 2196 Clakwood blvd., Cleveland 3, Ohio.
489. Dr. James E. M. Thomson, 1104 Sharp Bldg., Lincoln, Nebr.
490. Timken Roller Bearing Co., Canton, Ohio.
491. Tradefilms, Inc., 666 N. Robertson Blvd., Hollywood 46, Calif.
492. Transfilm, Inc., 35 S. 45th St., New York, N. Y.
493. Transit Busses, Inc., 1333 Greenfield Road, Dearborn, Mich.
494. Travelers Insurance Co., News Bureau, Hartford, Conn.
495. Twyman Films, Inc., 29 Central Ave., Dayton, Ohio.
496. United Airlines, 221 N. La Salle St., Chicago, Ill.
497. United Aircraft Corp., E. Hartford 8, Conn.
498. Unit Film Co., 1211 Redondo Blvd., Los Angeles, Calif.
499. Union Carbide and Carbon Corp., Carbide and Carbon Bldg., 30 E. 42nd St., New York 17, N. Y.
500. United Film Productions, Oleson Lighting Bldg., Hollywood, Calif.
501. U. S. Electrical Motor, 1500 S. Western Ave., Chicago, Ill.
502. United States Dept. of Agriculture, Education Films Division, Washington, D. C. *
503. United States Dept. of Commerce, Washington, D. C. *
504. United States Forest Service, Dept. of Agri., Washington 25, D. C.*
505. United States Dept. of Interior, Bur. of Reclamation, Wash. 25, D.C.*
506. United States Dept. of Labor, Div. of Labor Standards, Wash. 25, D.C.*
507. United States Office of Education, Div. of Edu. Films, Wash. 25, D.C.*
508. United States Dept. of State, Motion Picture Project, Domestic Distributic 35 W. 45th St., New York City, N. Y. *

- 509. Underwriters Laboratories, Inc., 207 E. Ohio St., Chicago, Ill.
- 510. U. S. Maritime Commission, Div. of Shipyard Labor Relations, 1420 New York Ave., Washington 25, D. C.
- 511. U. S. Pipe and Foundry Co., Publicity Dept., Burlington, N. J.
- 512. U. S. Plywood Corp., 616 W. 46th St., New York 19, N. Y.
- 513. United Projector & Film Corp., 228 Franklin St., Buffalo, N. Y. *
- 514. U. S. Public Health Service, Washington 14, D. C.
- 515. U. S. Rubber Co., 1230 6th Avenue., New York City 20, N. Y.
- 516. U. S. Steel Corp., Industrial Relations Dept., 71 Broadway, New York City, N. Y.
- 517. United States Steel Corp. of Delaware, Mr. A. C. Wilby, Dir. of Pub. Relations, 208 La Salle St., Chicago, Ill.
- 518. Union Wire Rope Corp., 21st & Manchester Ave., Kansas City 3, Mo.
- 519. University of California, Dept. of Visual Education Instruction, Extension Division, Berkeley 4, California.*
- 520. University of Illinois, Visual Aids Service, Urbana, Ill.*
- 521. University of Iowa Extension Service, Iowa City, Iowa.*
- 522. University of Oklahoma, Dir. of Visual Education, Norman, Oklahoma.*
- 523. University of Michigan, Visual Education Dept., Ann Arbor, Mich.*
- 524. University of Minnesota, Extension Div., Minneapolis 13, Minn.*
- 525. University of Pennsylvania, Philadelphia, Pa. *
- 526. University of Southern California, University Park, Los Angeles, Calif.*
- 527. University of Wisconsin, Fur. Vis. Education, Madison, Wisc. *
- 528. Upjohn Company, Kalamazoo 99, Mich.
- 529. Utah Safety Council, State Capitol, Salt Lake City, Utah.
- 530. T. J. Valentino, Inc., 1600 Broadway, New York 19, N. Y.
- 531. Vaseco Visual and Sound Equipment Co., 2301 Classen Blvd., Oklahoma City 6, Oklahoma.*
- 532. C. L. Venard Co., Peoria, Ill.*
- 533. Veneer Ass'n., 616 S. Michigan Ave., Chicago 5, Ill.
- 534. Vermont Marble Co., Proctor, Vermont.
- 535. Vision Educational Productions, 509 Fifth Ave., New York 17, N.Y.*

536. Visual Aids, Bureau of Visual Instruction, University of Extension Div., University of Kansas, Lawrence, Kansas. *
537. Visual Art Film Distributor, 419 Empire Bldg., Pittsburgh 22, Pa.
538. Visual Education, Inc., 12th at Lamar, Austin 21, Texas.
539. Visual Education Service, 131 Clarendon St., Boston, Mass. *
540. Visual Instruction Bureau, Division of Extension, University of Texas, Austin, Texas. *
541. Visual Instruction Section, 230 S. Clarke St., Chicago, Ill. *
542. Visual Library, 1590 Broadway, New York City, N. Y. *
543. Visual Sciences, Suffern, N. Y. *
544. Vocafilm Corp., 424 Madison Ave., New York City, N. Y. *
545. Vocational Guidance Films, Inc., 2718 Beaver Ave., Des Moines 10, Iowa. * Also C. F. Mahnke Productions.
546. Vulcan-Crucible Steel Co., West Aliquippa, Pa.
547. Warner & Swasey Co., 5701 Carnegie Ave., Cleveland, Ohio.
548. Waverly Petroleum Products Co., Drexel Bldg., 5th & Chestnut St., Philadelphia, Pa.
549. Weidenhoff, Joseph, Inc., Chicago 24, Ill.
550. Welch Studios, 25th & Lehigh Ave., Philadelphia, Pa.*
551. Wesclox, La Salle, Ill.
552. Western Colorfilms, 3734 NE Chico St., Portland 13, Oregon.
553. Western Electric Co., 195 Broadway, New York City 7, N. Y.
554. Western Pennsylvania Safety Council, Chamber of Commerce Bldg., Pittsburgh 19, Pa.
555. Western Pine Ass'n., Yeon Bldg., Portland 4, Oregon.
556. Westchester Co., Children's Ass'n., 8 Church St., White Plains, N. Y.
557. Westinghouse Electric Corp., Westinghouse School Service, 306 Fourth Ave., Pittsburgh, Pa., P. O. Box 1017.

- 558. Weyerhaeuser Sales Co., First National Bank Bldg., St. Paul 1, Minn.
- 559. Wholesome Film Service, 20 Melrose St., Boston, Mass.
- 560. Wilding Picture Productions, Inc., Distribution Dept., 1345 Argyle St., Chicago 40, Ill.
- 561. Willard Storage Battery Co., Sales Promotion Dept. 246-286 E. 131st. St., Cleveland, Ohio.
- 562. Clem Williams Films, 802 Pitt Bank Bldg., Pittsburgh 22, Pa.
- 563. Brown and Earle Williams, Inc., 918 Chestnut, Philadelphia, Pa.
- 564. Wisconsin Conservation Dept., Sales Promotion Dept., Madison 2, Wisc. * (Films restricted to certain areas.)
- 565. Wisconsin Motor Vehicle Dept., Madison 2, Wisc.
- 566. Wolff Studios, Raphael G., 1714 N. Wilton Place, Hollywood 28, Calif. *
- 567. World Pictures Corp., 729 Seventh Ave., New York City. *
- 568. Wright Aeronautical Corp., 132 Beckwith Ave., Patterson 3, N. J.
- 569. Wyman-Gordon Co., Worcester 1, Mass.
- 570. Wyoming State Dept. of Health, Capitol Bldg., Cheyenne, Wyo.
- 571. Yale University Press Film Service, 386 Fourth Ave., New York City, N. Y.
- 572. Yarway Waring Co., 102 E. Mermaid Lane, Philadelphia 18, Pa.
- 573. Y. M. C. A. Motion Picture Bureau, 1700 Patterson Ave., Dallas, Texas, * or 347 Madison Ave., New York 17, N. Y.
- 574. Young America Film Divisions, 32 E. 57th St., New York City 22, N.Y. *
- 575. Zurich Insurance Co., 135 S. La Salle St., Chicago 3, Ill.

A Suggested List of Films for One Year's Program for High Schools Offering Four Units of Industrial Arts.

First Year Woodwork

First Semester:

1. FUNDAMENTALS OF WOODWORK
2. SAFE PRACTICES IN WOODWORK (Slidefilm)
3. FOREST TREASURES.

Second Semester:

1. FOUR THOUSAND GIFTS OF THE FOREST
2. TREES AND HOMES
3. FURNITURE MAKING

Second Year Woodwork

First Semester:

1. "AND SO WE MAKE A COFFEE TABLE"
2. HARVESTING THE WESTERN PINES
3. TREES AND MAN

Second Semester:

1. THE METEOR
2. ESSENTIALS OF WOOD TURNING
3. MODERN MASTERPIECES OF MAHOGANY

Mechanical Drawing

First Semester:

1. USES OF T-SQUARE AND TRIANGLES
2. FIRST COURSE IN MECHANICAL DRAWING (Filmstrip)
3. LETTERING (Filmstrip)

Second Semester:

1. DRAFTING TIPS
2. ORTHOGRAPHIC PROJECTION
3. BEHIND THE SHOP DRAWING

General Shop

First Semester:

1. BASIC ELECTRICITY (Filmstrip)
2. ELECTRODYNAMICS
3. EXCURSIONS IN SCIENCE (Nos. 1 to 8, inclusive)

Second Semester:

1. SHEET METAL
2. BENCHWORK AND FITTINGS (Slidefilm)
3. AUTOMOTIVE LUBRICATION

Films for Industrial Arts Classes Arranged by Subjects

The films in this report have been arranged according to the shop classes where there seemed to be the closest relationship. The idea was to give complete information about each film. This would be of great value to the shop teacher to help him get a clear idea of the content of the film.

The title of the film is given in capital letters. The number of reels, size of film and kind, whether silent or sound, is next given. Color is indicated on some; otherwise the film is black and white. The address of the distributing agency or firm is given by name only. By referring to the preceding pages, the complete address can be quickly found.

The 19 subjects under which the films are classified, appear to be more than the average shop teacher will care to use. However, the writer had in mind the value of this film list to all the high schools of the State of Oklahoma, whether large or small. Its length and flexibility is justified under those conditions.

AIRCRAFT MAINTENANCE

INSPECTING AND ADJUSTING HYDRAULIC BRAKES (13 minutes) 16mm sound \$19.21 OE255.

Shows how to inspect the hydraulic brake system; how to bleed hydraulic brakes; how to add fluid to the hydraulic system reservoir; how hydraulic brakes operate; and the importance of entering the job in the log book. USOE-Castle.

INSTALLING LANDING GEAR (19 minutes) 16mm sound \$26.47 OE257.

Shows how to remove damaged landing gear; replace old bolts, nuts, and cotters with new parts; install an aircraft bolt properly; assemble and install a new landing gear; and check alignment and track of wheels. USOE-Castle.

KEEP 'EM LANDING 16mm sound.

Shows disassembly, assembly, maintenance of main leg and hose aerols (landing gear) on the Bell P-38 fighter plane. Cleveland Pneumatic.

REPAIRING AIRCRAFT TIRES (20 minutes) 16mm sound \$27.09 OE254.

Shows how to inspect an airplane tire; how to remove the tire; how to remove the tube from the tire; how to vulcanize the tube; how to repair a cut in the tire; how to reinstall the wheel; and the importance of entering the job in the log book. USOE-Castle.

REPAIRING AND RELINING MECHANICAL BRAKES (21 minutes) 16mm sound \$27.71 OE256.

Shows how to check brake action; how to remove wheel and inspect brakes; how to disassemble wheel and remove brake lining; how to install new brake lining; how to replace brake cables; how to adjust brakes. USOE-Castle.

AIRCRAFT TIRES - PART I: MAINTENANCE AND REPAIR SN491a.

Shows the different types of tires, tubes and rims that make up a tire assembly; tools used in working with tires; precautions to be taken in working with tires to prevent failure and lengthen tire life; how to make minor repairs on tubes; and the importance of periodic inspection and proper inflation. Navy-Castle(Slide film).

AIRCRAFT TIRES - PART II: MAINTENANCE AND REPAIR SN491b.

Continues discussion of Part I. Navy-Castle(Slide film).

BRAKES AND LANDING GEAR MECHANISM: PART I (34 frames) Silent.

Inspection of fixed landing gears, supporting struts, shock-absorbers struts, brake assembly, tires and tail wheel. The Jam Handy Organization.

BRAKE AND LANDING GEAR MECHANISM: PART II. (63 frames) Silent.

Inspecting and driving the retractable landing gear mechanism. The Jam Handy Organization.

LANDING GEAR-B-24D (120 frames).

Shows the assembly, removal, and retraction of the main and nose landing gear of the B-24D. Consolidated Vultee.

PRODUCTS OF PROGRESS Sound slide film.

Covers the construction, principles of operation and service methods recommended by Bendix regarding their B-K power brakes. Florez.

ATTACHING AND ALIGNING WINGS (20 minutes) 16mm sound \$27.09 OE258.

Shows how to inspect a damaged wing; remove the damaged wing and attach a new wing; level the airplane and align the wing; complete the installation of the wing; and inspect the finished job. USOE-Castle.

CONNECTING AND ADJUSTING CONTROLS (19 minutes) 16mm sound \$25.85 OE260.

Shows how to inspect and adjust the elevator and rudder control cables; how to line up and safety a turnbuckle; how to remove and replace a damaged aileron control cable and to adjust it for the proper aileron travel; and how to make a final check-up of control cables before entering the job in the log. USOE-Castle.

INSTALLING AND ALIGNING TAIL SURFACES (19 minutes) 16mm sound \$25.85 OE259.

Shows how to inspect damaged tail surfaces and remove them; how to prepare new parts for installation; how to install new stabilizers, elevators, and rudder; and how to inspect the job before entering it in the log-book. USOE-Castle.

CARE AND REPAIR OF FLIGHT CONTROLS SN127.

A systematic procedure for examining and cleaning cables, pulleys, fairleads or guides, and hinges, which connect the controls of a plane with the cockpit, is demonstrated. Questions point out what to look for and check. Navy-Castle(Slide film).

FABRIC REPAIR (58 pictures, 46 frames).

How to repair punctures and tears in airplane fabric by patching; types of patches used; how to make patches; trimming hole; preparing surrounding surface; cutting fabric patch; pinking and fraying patch; applying patch; sewing tears; repairing large area; sewing patch; repairing stretched but unbroken fabric. The Jam Handy Organization.

FLIGHT INSTRUMENTS (126 frames) Silent.

Principles of operation; corrections and use. The Jam Handy Organization.

HAND TOOLS FOR FABRIC WORK SN102.

Deals with the tools needed by the airplane mechanic to make fabric repairs. Demonstrates how to sharpen a pocket knife, shows the straight shears, "pinking shears", the short straight needle, and the curved needle. Explains their use and care. Navy-Castle(Slide film).

INTRODUCTION TO AIRPLANE INSTRUMENTS FS1-23.

Principles of instrument operation, with discussion of electrical and mechanical types. AAF-Castle (Slide film).

RIGGING CHANGES AFTER FLIGHT CHECK SN136.

Shows how to make changes to correct faults revealed in the test flight. The faults covered are nose heaviness, tail heaviness, wing heaviness, yawing, and ground-looping. Navy-Castle (Slide film).

MAKING SHEET METAL REPAIRS (19 minutes) 16mm silent \$26.47 OE252.
Shows how to remove damaged area around a hole in an airplane fuselage and lay out trim lines; how to prepare hole to receive patch; how to "bump" out plug and doubler; how to mark and drill plug and doubler; how to rivet completed patch to part. USOE-Castle.

PATCHING FABRIC (22 minutes) 16mm sound \$28.33 OE250.
Shows how to cut out the damaged area; how to prepare the damaged area; how to prepare a patch; how to ribstitch a patch; how to finish a patch. USOE-Castle.

PATCHING PLYWOOD (26 minutes) 16mm sound \$32.53 OE249.
Shows how to prepare the damaged area; how to splay the edge of the hole; how to prepare and apply a splayed patch; how to make a flush or plug-type patch; how to make a frame or doubler; and how to apply a flush patch. USOE-Castle.

REPAIRING A WOODEN RIB (24 minutes) 16mm sound \$31.29 OE247.
Shows how to remove gussets, broken rib parts; how to splice a section of cap strip; how to cut, finish scarf joint; how to make a new truss member; and how to make, assemble gussets, and reinforce cement plates. USOE-Castle.

REPAIRING STRUCTURAL TUBING (20 minutes) 16mm sound \$27.09 OE253.
Shows how to straighten a bent tube; how to round out a tube; how to remove a damaged section of the tube; how to check and align a sprung fuselage; how to prepare a replacement of tube; how to prepare internal reinforcing sleeves; and how to assemble and weld the replacement section and sleeves. USOE-Castle.

SPLICING A WOODEN SPAR (21 minutes) 16mm sound \$27.71 OE248.
Shows how to determine the splice area and layout the splice; how to cut a scarf joint on a spar; how to finish a scarf face by hand; how to glue and assemble a scarf joint; how to make, glue, and assemble reinforcement plates; how to trim a spar to shape and size. USOE-Castle.

CLEANING AND PAINTING TIE RODS AND STRUTS SN23.
Describes the removal, inspection, cleaning, priming, painting, replacement and proper care of tie rods. Details are also included on inspection, cleaning, priming, painting, and waxing of struts. Navy-Castle (Slide film).

REPAIRING CHANNELS AND STRINGERS SN297.
Explains the function of channels and stringers; discusses their repair and demonstrates how to lay out and form a splice for a channel type stringer with a bending brake, steel form blocks. Navy-Castle (Slide film).

REPAIRING SHEET METAL SURFACES (54 pictures, 60 frames).
Classification of repairs most often needed and how to make these sheet metal repairs; changing specifications; removing dents; repairing cracks; repairing holes; replacing panels; safety precautions. The Jam Handy Organization.

ADJUSTMENTS AFTER CHECK FLIGHT (19 minutes) 16mm sound \$25.85 OE261.
Shows some causes of nose-heaviness, tail-heaviness, yawing, torque tendency; rough propeller and ground looping; how to determine particular cause of these troubles; how to make the necessary adjustments.
USOE-Castle.

AIRPLANE MECHANIC, THE (9 minutes) 16mm sound \$15.49 OE278.
Planned as an orientation film for beginning airplane mechanics; shows and explains the skills and knowledge required to make satisfactory inspections and repairs; emphasizes the importance of thoroughness, skill and dependability. USOE-Castle.

MARGIN FOR VICTORY (25 minutes) 16mm sound.
Designed to help in the problem of damaged threads on aircraft parts and the gauges that test them. Douglas Aircraft Corporation.

SERVICING AN AIRPLANE (17 minutes) 16mm sound \$23.98 OE279.
Shows how to perform the various routine servicing operations on a light airplane, including proper and safe methods of pushing a plane on the ground, cleaning an airplane, refueling, changing oil, inflating tires, and starting engine. Shows hand signals for guiding the pilot. Emphasis throughout the film is upon the importance of the job and doing it safely.
USOE-Castle.

CLEANING THE AIRPLANE SN121.
Demonstrates cleaning the landing gear, fabric and metal surfaces, general cleaning of the fuselage and cockpits and the floats. An explanation of the various types of cleaners and cleaning equipment is included. Safety precautions are emphasized. Navy-Castle (Slide film).

COCKPITS AND CABINS B-24D (86 frames).
Ventilation system, furnishings, window removal and installation, nose wheel door removal and installation, armament. Consolidated Vultee.

HANDLING THE AIRPLANE SN252.
Emphasizes the dangers of careless handling of an airplane on the ground and recommends procedures to be followed, using a primary trainer for purpose of illustration. Instructions for climbing into, towing, and pushing the plane on the ground are given. Navy-Castle (Slide film).

REFUELING THE AIRPLANE (57 pictures, 64 frames).
Responsibility for refueling; preparations before refueling, safety measures; equipment required; step-by-step procedure; grounding hose nozzle and plane; avoiding static electricity; keeping gasoline clean; handling fuel hose. The Jam Handy Organization.

SERVICING HYDRAULIC SYSTEMS SN115.
Straight photography, charts, and cartoons are used to show the parts of the airplane operated by the hydraulic system. Emphasis is placed on servicing procedures. Navy-Castle (Slide film).

THERMOMETER FS1-51.
Describes the use, operation and maintenance of various types of aircraft thermometers. AAF-Castle (Slide film).

BRING 'EM DOWN ALIVE (30 minutes) 16mm silent 1941.

How parachutes are made and packed and how they are tested, both from a test tower and from an airplane. Pioneer.

ELECTRICALLY HEATED FLYING SUIT, THE (20 minutes).

A teaching film for Army and Navy pilots and plane crew members. General Electric (Slide film).

PARACHUTES FOR SAFETY (52 minutes) 16mm sound Rent \$4 1942.

The various uses of parachutes, how they are made, and tested for use; correct method of packing a chute; how to properly service and operate a parachute. Bray.

AVIATION SERIES (50 frames each) Silent.

Slide films on the following aircraft subjects, designed to furnish a general background: SVE

Historical	Aerial photography
Construction	Aircraft in other industries
Engine	Famous flights and fliers
Instruments	Army Aircraft
Propellers	Navy Aircraft
Lighter-than-air	Radio and aircraft
Land planes	Accessories
Seaplanes	Special Equipment
Parachutes	Aircraft schools
Maintenance	Gliders and light planes
Autogyros	

AVIATION SUBJECTS (18 slide films) Sale.

Specific visual aids for aircraft production training intended for pre-employment, induction, and upgrading training: 1. The Engineer's Relation to Production 2. The Engineer's Relation to Assembly 3. Riveting 4. Blueprint Reading 5. Gas welding 6. Arc welding 7. Resistance welding 8. Jogs and Fixtures 9. Methods of fabrication 10. Methods of Assembly 11. Forming machine 12. Cutting machines 13. Lathes 14. Mills 15. Heat treatment of aluminum 16. Processings 17. Safety 18. The Component parts of an Airplane. Tradefilms.

PARACHUTES (72 frames).

One of the Pilot Training Kit films, dealing with the construction, care, and use of parachutes. The Jam Handy Organization.

PARACHUTES: CONSTRUCTION AND CARE OF PARACHUTE FS1-46.

Illustrates the various types of parachute assemblies, the three major units, and their construction. Also shows proper and improper methods of handling the parachute. AAF-Castle (Slide film).

AIR TRANSPORTATION--JOBS AND YOU (56 frames).

It is aimed at junior and senior high-school levels and is intended to answer many of the questions being asked today relative to air-transportation occupations. Write United Air Lines School and College Service department, Chicago, Illinois. United Airlines (Slide film).

CRADLE OF VICTORY and PBX RECORD BREAKERS 16mm sound.
These films deal with aircraft produced by Consolidated-Vultee Aircraft Corporation, makers of the famous Liberator. Available on payment of a nominal service fee and transportation charges. Princeton Film Center, Princeton, New Jersey.

PARACHUTES: FOLDING AND PACKING FS1-49.
Adjusting harness to the wearer; inspection of parachutes to determine which are repairable and which should be condemned. Drop testing; cleaning and drying; system of storage and shipping. AAF-Castle Films (Slide film).

PARACHUTES: INSPECTION FS1-56.
Illustrates the system of inspecting the service seat type parachute, both routine and complete inspection. AAF-Castle Films (Slide film).

ART METAL X

COPPER MINING IN ARIZONA (3 reels) 16mm 35mm silent. U. S. Bureau of Mines.

COPPER LEACHING AND CONCENTRATION (1 reel) 16mm 35mm silent. U. S. Bureau of Mines.

DRYPOINT - A DEMONSTRATION (2 reels) 16mm 35mm silent.
Miss Katherine W. Lane, brilliant young sculptress, at work at her studio, demonstrates every step necessary from the preliminary sketch in clay to the ultimate achievement in bronze. Wholesome Films Service, Inc.

FROM MINE TO CONSUMER (2 reels) 16mm 35mm silent.
Mining, smelting, and refining of copper and fabrication of its alloys. American Brass Company, Waterbury, Connecticut.

HERITAGE (1 reel) 35mm sound.
Discovery and uses of nickel. Douglas D. Rothacker.

LONG DRAWN OUT (1 reel) 35mm silent.
A trip through a copper mill. National Council of Y. M. C. A. Motion Picture Bureau.

MANUFACTURING OF ANACONDA SHEET COPPER (1 reel) 16mm 35mm silent.
Self explanatory. American Brass Company.

MOUNTAINS OF COPPER (1 reel) 16mm 35mm sound.
Operations in blasting and transporting copper ore from world's largest open pit copper mines. General Electric Company.

NICKEL (2 reels) 16mm 35mm silent.
Mining ore, crushing, smelting, electrolytic refining, and casting; how alloys are made and other manufacturing operations; how nickel is utilized in industry, in sports, and in the home. U. S. Bureau of Mines.

SILVER: HEIRLOOMS OF TOMORROW (3 reels) 16mm 35mm silent.
Scenes in a modern silverware plant; examples of Paul Revere's work.
U. S. Bureau of Mines.

THE ETCHER'S ART (2 reels) 16mm 35mm silent.
Frank W. Benson, a widely known artist, shows in detail the steps necessary in the acid process of making etchings, from the transferring of the pencil sketch to the plate, to the pulling of prints from the press.
Wholesome Films Service, Inc.

THE MEDAL MAKER (2 reels) 16mm 35mm silent.
Sponsored by the American Numismatic Society. Laura Gardine Fraser demonstrates the making of medals and coins. Wholesome Films Service, Inc.

THE STORY OF THE FABRICATION OF COPPER (2 reels) 16mm 35mm silent.
Rolling and drawing copper rod and wire, rolling of sheets, testing strength of copper wire and cable. U. S. Bureau of Mines.

THE STORY OF COPPER (4 reels) 16mm 35mm silent.
Mining, milling, smelting and refining of copper. American Museum of Natural History.

THE SILVER SMITH (2 reels) 16mm 35mm silent.
How silverware is produced from ore to things of beauty and utility.
Harvard Film Service.

SILVERSMITHING (20 minutes) 16mm sound Rent \$3.50.
International Theatrical and Television Corporation.

ARTS AND CRAFTS

LOOM WEAVING (1 reel) 15 minutes 16mm silent or sound Rent \$1.50.
Demonstrates all the steps of the process of weaving a simple pattern.
Brandon Films.

DECORATIVE METAL WORK (1 reel) 15 minutes 16mm silent or sound
Rent \$2.
Shows all the steps of an etched metal bracelet in creation until completion. Brandon Films.

TOYS FROM ODDS AND ENDS (1 reel) 15 minutes 16mm silent or sound
Rent \$2.
A detailed and fascinating portrayal of the making of a toy, wooly dog from discarded materials. Brandon Films.

SIMPLE BLOCK PRINTING (1 reel) 15 minutes 16mm silent or sound Rent \$2.
Shows examples of block printing. Uses of various tools demonstrated.
Brandon Films.

THE TECHNIQUES OF THE SILK SCREEN PROCESS (1 reel) 16mm silent or
sound 15 minutes Rent \$2.
A demonstration that is valuable for anyone interested in methods of reproducing art work, posters and fine prints. Brandon Films.

MAKE A METAL PLAQUE (1 reel) 16mm silent Rent \$1.50.

A demonstration of the making of a metal plaque, showing the process in complete detail. International Theatrical and Television Corporation.

MAKE A PLASTER PLAQUE (2 reels) 16mm silent Rent \$3.

Shows the complete process from making the mold, making a cast from the mold, and painting the completed plaque. International Theatrical and Television Corporation.

MAKE AN ETCHING (2 reels) 16mm silent Rent \$3.

Shows in detail the process of "grounding" smoking the plate, drawing with the needles, etching with acid, and pulling the proof. Show also are outstanding examples of the etcher's art through the ages.

CREATIVE DESIGN IN PAINTING (1 reel) 16mm silent Rent \$1.50.

CREATIVE PAINTING IN LANDSCAPE (1 reel) 16mm silent Rent \$1.50.

MAKING A MONOTYPE (1 reel) 16mm silent Rent \$1.50.

This film and the two just listed are available from the International Theatrical and Television Corporation.

PLASTER CARVING (1 reel) 16mm silent or sound Rent \$2.

The steps of preparing a sketch, then a clay block, casting and roughing out the final form are clearly shown. Brandon Films.

BOOKBINDING, ART IN (1/3 reel) 16mm silent Rent \$1.

Excellent demonstration for both commercial and private use; edge gilding in this very complete picture. Bray Pictures Corporation.

ETCHER AND HIS ART, THE (1/3 reel) 16mm silent Rent \$1.

A complete demonstration of etching from the sketching of the first "cartoon" to the "pulling" of the artist's proof from the finished copper plate. Bray Pictures Corporation.

ELEMENTARY BOOKBINDING (1 reel) 16mm silent or sound 15 minutes Rent \$2.

The art of making a simple book cover with finger painting decoration is shown in detail before binding is completed. Brandon Films.

ARTIST, THE (1 reel) 16mm silent Rent or Purchase.

A vocation or avocation. Mogull's Camera and Film Exchange, Inc.

PAINTERS (1 reel) 16mm silent Rent or Purchase.

The brush as an industrial force. Mogull's Camera and Film Exchange, Inc.

STUDYING ART (4 reels) 16mm silent Rent or Purchase.

A comprehensive and illuminating exposition of all forms of art; execution, technique and appreciation. Illustration by example and delineation. Mogull's Camera and Film Exchange, Inc.

HANDMADE LANTERN SLIDES (1 reel) 16mm silent Rent \$1.50.

This shows an easy method of etching glass for lantern slide work, the process of binding and labeling glass slides; and how to make the type-written slide and the silhouette slide. International Theatrical and Television Company.

LINOLEUM BLOCK PRINTING (1 reel) 16mm silent Rent \$1.50.
The cutting and printing of the linoleum block is clearly demonstrated.
International Theatrical and Television Corporation.

MAKE A HAND PUPPET (1 reel) 16mm silent Rent \$1.50.
Steps in making a puppet. International Theatrical and Television Corp.

MAKE A LINOLEUM BLOCK (1 reel) 16mm silent Rent \$1.50.
Showing the use of cutting tools and the printing of the block. Especially adapted for Junior and Senior High School use. International Theatrical and Television Corporation.

LET'S MAKE TOYS (2 reels) 16mm sound Color Rent \$7.
Illustrates in a clever way the manner in which several small toys can be made. This picture is extremely successful with students of all ages and with mechanically minded adults. A carefully diagrammed guide is enclosed with each reel. International Theatrical and Television Corp.

PATTERNS OF AMERICAN RURAL LIFE (1 reel) 16mm sound Color 10 minutes.
Portrays in color, objects of rural handicraft exhibited in Rural Art Exhibit held in Washington in 1940. Briefly outlines the story of revival of rural crafts. Oklahoma A. and M. College, Stillwater, Extension Department. Y. M. C. A. Motion Pictures Bureau.

AUTOMOBILE MECHANICS ✓

AUTOMOBILE LUBRICATION (1 reel) 16mm silent.
Why old oil should be replaced with new oil; different kinds of lubricants for various parts. American Museum of Natural History.

BETTER BRAKES (2 reels) 35mm sound.
Construction, operation and servicing of modern automobile brakes. Mid-Continental Picture Corporation.

ELEMENTS OF THE AUTOMOBILE (14 reels) 16mm 35mm silent.
Service visualizing inside workings of motor car; animated drawings, mechanical models and phantom drawings used. Bray Pictures Corporation.

FORD AND A CENTURY OF PROGRESS (1 reel) 35mm sound.
Ford exhibits. Ford Motor Company.

FOUR-STROKE CYCLE GAS ENGINE (1 reel) 16mm silent.
Shows it in a single cylinder "T" head type of motor; a simplified carburetor, ignition system applied to single and multiple cylinder engines, water and air cooling. Eastman Kodak Company.

MAKING AN ALL STEEL AUTOMOBILE BODY (2 reels) 16mm silent.
Making the machinery for pressing, stamping, welding and finishing. American Museum of Natural History.

MEN AND MOTORS (2 reels) 35mm sound.
Craftsmanship and precision methods of automobile manufacture. General Motors Corporation.

METALS OF MOTOR CAR (2 reels) 35mm silent.

Use of metals and alloys in construction and operation of parts of motor car. American Museum of Natural History.

OIL BLAST CHAMBER (1 reel) 35mm sound.

Operation of new circuit breaker; highly technical. General Electric Company.

SERVICING THE CARBURATOR (1 reel) 35mm silent.

Good for motor trade schools. Mid-Continent Picture Corporation.

STORY OF A GASOLINE MOTOR (3 reels) 16mm 35mm silent.

Animation shows entire function of automobile motor; motor lubrication and operation of each part. American Museum of Natural History.

STORY OF A SPARK PLUG (2 reels) 16mm silent.

Manufacture of spark plugs, manufacture of sullimanite; important part spark plugs play. American Museum of Natural History.

THE AUTO FASHION PLATE (2 reels) 35mm sound.

Journey through the art and color section of the Fisher Body Corporation. General Motors Corporation.

THE AUTOMOBILE (1 reel) 16mm silent.

Traces production and use of iron, rubber, glass and gasoline in the automobile. Eastman Kodak Company.

THE CARBURATOR (2 reels) 35mm silent.

Processes of manufacture. Mid-Continent Picture Corporation.

POWER WITHIN A STORY OF INTERNAL COMBUSTION ENGINES (2 reels) 16mm 35mm silent. U. S. Bureau of Mines Experiment Station.

SAFETY GLASS (2 reels) 16mm 35mm silent. U. S. Bureau of Mines Experiment Station.

MAGIC CIRCLE (3 reels) 16mm silent.

Manufacture, laboratories, merchandising and advertising of piston rings. Sound on disc. Visual Instruction Bureau, Division of Extension, University of Texas.

ENDLESS CHANNELS (5 reels) 16mm silent.

How piston rings are developed; how they work inside engine. Visual Instruction Bureau, Division of Extension, University of Texas.

MAKING A V-TYPE ENGINE (2 reels) 16mm 35mm silent.

Portrays detailed operation in making a V-type engine. Begins with the unloading of ore and takes the audience through the steps necessary to produce cylinder blocks that are checked to three millionth of an inch. U. S. Bureau of Mines.

WHERE MILEAGE BEGINS (1 reel) 16mm 35mm sound.

A picturization of what the gasoline engine is and how it works by simple comparison with objects in daily use. A modern multi-cylinder automobile

is completely assembled. An explanation of the function and operation of the various parts is included in the film. General Motors Corporation, Department of Public Relations.

THE STORY OF THE TIRE (1 reel) 16mm 35mm silent. Good Year Tire and Rubber Company.

WHAT STOPS 'EM (Length: 7 minutes) 35mm sound.
A clear explanation of hydraulic brakes and of their use on the modern motorcar. Chevrolet Motor Corporation.

FIRE CONTROL (Length: 8 minutes) 35mm sound.
An explanation of the automobile engine, and especially of the cylinder heads and valves. Chevrolet Motor Company.

NO GHOSTS (Length: 11 minutes) 35mm sound.
A dramatization of the Y-K frame, with especial attention to the rigidity of the frame and the elimination of squeaks and rattles. Chevrolet Motor Company.

BALANCE (Length: 7 minutes) 35mm sound.
This picture dramatizes the balance performance of the modern automobile, showing how all parts work together. Chevrolet Motor Company.

THE SAFEST PLACE (Length: 7 minutes) 35mm sound.
Because of progress in engineering and materials, the safest place a person can be is in his automobile as this picture proves, with special emphasis on brakes and body construction. Chevrolet Motor Company.

IT'S THE TOP (Length: 10 minutes) 35mm sound.
The principle of the turret top explained, proving how the turret top promotes safety and comfort. Chevrolet Motor Company.

DOWN THE GASOLINE TRAIL (Length: 8 minutes) 35mm sound.
Real photography and cartoon animation tell what happens to a drop of gasoline from the time it is put into the gasoline tank of an automobile to the time it brings to life all the power of the valve-in-head engine. Chevrolet Motor Company.

TAKE IT EASY (Length: 9 minutes) 35mm sound.
Dramatization of the spring suspension in the modern automobile, explaining in detail the principle of knee action. Chevrolet Motor Company.

GET GOING (Length: 8 minutes) 35mm sound.
An explanation of what happens when the motorist steps on the accelerator. Chevrolet Motor Company.

WATER BOY (Length: 13 minutes) 35mm sound.
A dramatization of the cooling system of the automobile, showing how the water circulates around the cylinders, cooling them and in turn being cooled by the air drawn through the radiator. Chevrolet Motor Company.

STOP THAT CAR (Length: 9 minutes) 35mm sound.
What does it take to stop an automobile going at top speed? The principles

of braking, climaxing in a dramatic leap from a dock to a barge at full tilt with the full confidence of the driver in an automobile's four-wheel hydraulic brakes. Chevrolet Motor Company.

SILENCE (Length: 10 minutes) 35mm sound.

Modern science has helped to make the automobile more comfortable by making it more quiet, as this picture shows. Chevrolet Motor Company.

FIRE AND WATER (Length: 7 minutes) 35mm sound.

The age-old ordeal of fire and water is here applied to the modern motorcar. The speeding car meets all modern tests with perfect ease. A picture including the most remarkable stunts ever offered on the screen. Chevrolet Motor Company.

SPINNING LEVERS (Length: 10 minutes) 35mm sound.

The transmission in the modern motorcar - the mechanism that makes it possible to have three forward speeds and a reverse - it is a series of levers, levers that spin. Chevrolet Motor Company.

HORSEPOWER (Length: 9 minutes) 35mm sound.

How the term "horsepower" came to be applied to mechanical devices is made clear in this picture, and an explanation of how modern motorcar can hold the power of eighty-five horses under its hood. Chevrolet Motor Company.

FREE AIR (Length: 11 minutes) 35mm sound.

Everything needs air to live, and every fire needs air to burn; in the modern automobile engine, a spoonful of gasoline combines with a mammoth balloon full of air to provide power. Chevrolet Motor Company.

ON THE LEVEL (Length: 10 minutes) 35mm sound.

The modern ride is a comfortable ride because automobile engineers have taken the rough places out of the road by putting knee action in the automobile. Chevrolet Motor Company.

RIDING THE FILM (Length: 11 minutes) 35mm sound.

Motorists really ride on a film of oil, because all the moving parts of the engine are kept slipping over each other by a thin film of oil. Chevrolet Motor Company.

SOFT PEDALS (Length: 9 minutes) 35mm sound.

This picture explains the operation of the tiptoe-matic clutch, showing how it contributes to ease of operation, safety and comfort. Chevrolet Motor Company.

CURRENT FLASHES (Length: 11 minutes) 35mm sound.

A vivid explanation of how the generator and electrical system of the modern automobile work. Chevrolet Motor Company.

VACUUM CONTROL (Length: 11 minutes) 35mm sound.

An explanation of the principle of the new vacuum gearshift, and how it contributes to comfort, ease of driving, and safety. Chevrolet Motor Company.

OVER THE WAVES (Length: 9.5 minutes) 35mm sound.

Roads will always be rough, to a limited extent so that the ride must be smoothed out by the automobile. The smoothing is done by knee action. Chevrolet Motor Company.

THE HOT HEAD (Length: 12 minutes) 35mm sound.

Picture shows superior economy and power of valve-in-head engine. Chevrolet Motor Company.

QUIET, PLEASE (Length: 11 minutes) 35mm sound.

Demonstration of successful campaign against noise, by ride in unupholstered car, and then in fully soundproofed automobile. Chevrolet Motor Company.

POWER 16mm sound.

This picture shows how energy is harnessed in the modern gasoline engine and automobile. Before our eyes in animated pictures and cutaways we see the four-stroke cycle internal combustion engine going through its complete stroke cycle-intake-compression-power-exhaust. The explosion of the gasoline air mixture in the cylinder is shown forcing the connecting rod down to turn the crankshaft. We see this force travel through the transmission, along the propeller shaft, through the differential and rear axle and we see it turn the wheels. In short, we are shown power at work. The Jam Handy Organization.

CURVE CONTROL 16mm sound.

This picture shows and explains how various types of vehicles are steered. Steering principles governing different numbers of wheels are investigated and various types of steering mechanisms are explained. The geometric principle of a revolving cone is shown as it applies to any wheel which is tilted at an angle to the plane on which it rolls. Practice of steering is demonstrated, and we are shown how wobbling and weaving on a bumpy road are eliminated. The Jam Handy Organization.

AROUND THE CORNER 16mm sound.

This film deals in interesting fashion with the difficult problem of making clear the operations of the automobile differential. We see that it is possible for wagon wheels to travel at different speeds because each one can turn freely on the axles. Early automobiles are seen operating this way, encountering difficulty since only wheel was driven by the engine and thus was not always able to get enough grip on the road. Engineers had to find a way to connect both rear wheels to the engine without sliding and slipping on turns. The solution was the differential. The Jam Handy Organization.

SMOOTH STARTS 16mm sound.

This is a picture which illustrates the law of inertia as it applies to the problem of starting airplanes, boats, locomotive trains, and automobiles. We see that in the motorcar friction carries the power from the engine to overcome the inertia of the car in starting. The means to apply this friction evenly is supplied by the clutch. The Jam Handy Organization.

THE AUTOMOBILE MECHANICAL TRAINING KIT - SET NO. 1 (Slide film).

This is comprised of five kits totaling 35 educational slidefilms with 2,829 pictures. The 35 slidefilms deal with the principles of operation of the units of the automobile. The Jam Handy Organization.

MOTION PICTURES FOR TRAINING IN AUTOMOTIVE MECHANICS (16 Motion Pictures Sound) 16mm sound.

These talking motion pictures are popularized presentations dealing with the various units of the automobile. While mainly for automotive mechanics classes, they are of value also to general science, physics, and chemistry classes. Each talking picture is designed for integrated use with the slidefilms of Automotive Kit No. 1 or alone for the purposes of introduction or review in shop classes. The Jam Handy Organization.

THE AUTOMOTIVE MECHANICAL TRAINING KIT - SET NO. 2 (Slide film).

This is made up of five shop-instruction kits totaling 35 educational slidefilms, with 1,910 pictures dealing with the care and repair of passenger cars and trucks. The Jam Handy Organization.

AMERICAN SUCCESS STORY (800 feet) 16mm sound 30 minutes.

Story of the development of synthetic rubber. Goodyear Rubber Company.

THE ART OF GENERATING (1 reel) 16mm sound 16 minutes.

Shows the development of the involute and design of gear teeth. The action of gear teeth are demonstrated by loading the gears and photographing the resultant stresses. Also depicted is the generating of a cylinder, elliptical surface, cam, plane surface and irregular parts. The Fellows Gear and Shaper Company.

GEAR MANUFACTURING EQUIPMENT (1 reel) 16mm sound 29 minutes.

Shows gear cutting and finishing equipment, and gear measuring and testing equipment. Instruments check concentricity, tooth spacing, and tooth taper of teeth of gears. The Fellows Gear and Shaper Company.

SET OF 6 SLIDEFILMS ON GASOLINE Florez, Inc.

AUTOMOTIVE IGNITION WIRING Sound slidefilms running approximately 15 minutes, covering the fundamental requirements of ignition wiring and the effect on car performance. Florez, Inc.

FLUID DRIVE 16mm sound (Free except Transportation).

Technical development in understandable terms. Oklahoma Visual Education Company.

AUTOMOTIVE SERVICE 16mm silent 400 feet.

This film gives a young man an over-view picture of the jobs in this field so he may better choose what particular kind of work in this field he would like. He is shown motors being serviced, including bearing replacement, valve grinding, cylinder reboring and welding. The film points out how various manuals, charts and films, as well as night schools and correspondence schools are available to the boy who wants to be a good automotive service man. Vocational Guidance Films.

THE INNER TUBE (1 reel) 16mm 35mm silent.

This film shows various stages of construction of the Goodyear inner tube.

The various stages the rubber goes through is depicted as well as the welding and curing stages; up to its initial inflation and testing. The Goodyear Rubber Company.

THE STORY OF A HACK SAW (2 reels) 16mm silent.
Shows manufacture of hand and power hack saw blades. E. C. Atkins and Company.

PROVED (4 reels) 16mm silent Rent or Purchase.
How automobiles are tried out - put to the most rigid tests and subjected to the roughest usage before they are marked OK. Mogull's Camera and Film Exchange, Inc.

FOUR STROKE CYCLE ENGINE (1 reel) 16mm silent Rent or Purchase.
A technical exposition of engine construction and operation. Mogull's Camera and Film Exchange, Inc.

SPECIALIZED LUBRICATION (3 reels) 16mm silent Rent or Purchase.
Problems and solutions entailing the use of oils and graphite. Mogull's Camera and Film Exchange, Inc.

OPERATOR AND HIS PASSENGERS, THE (18 minutes) 16mm sound \$25.81 OE492.
This visual aids unit emphasizes the importance of good customer relations, and through various typical situations, points out ways of handling problems that may arise- such as expired transfers, people who miss their stops, talkative persons, and passengers who crowd at the front of the bus. USOE-Castle Films.

OPERATOR SAFETY, THE (19 minutes) 16mm sound \$26.46 OE493.
This visual aids unit points out the importance of safety in bus operations. It shows what safety checks should be made; what safe following distance is; and how to operate safely in passing at intersections, at bus stop zones, and under special weather conditions. USOE-Castle Films.

SCHOOL BUS OPERATION - PART I: CARE AND MAINTENANCE (13 minutes)
16mm sound \$19.65 OE494.
This visual aid unit points out the importance of daily and weekly maintenance checks and the points to be checked; how to start, steer, and stop the bus; and how to double clutch; safe driving habits. USOE-Castle Films.

SCHOOL BUS OPERATION - PART II: PASSENGERS, DRIVING HAZARDS, SAFETY (14 minutes) 16mm sound \$21.95 OE495.
This visual aids unit emphasizes the driver's responsibility for the safety of child passengers and shows, through several typical situations, safe driving habits and safety in handling children when they are getting on and off the bus. USOE-Castle Films.

KEEP 'EM HOLDING (20 minutes) 16mm sound Free - loan.
Basic principles of the hydraulic brake, all adjustments on most types of hydraulic brakes in use today; proper relining methods. Thermoid Rubber Company.

STOP THAT CAR (10 minutes) 16mm sound.
Demonstrates the existence of energy in light, heat and motion, the

interchangeableness of these forms of energy, their application in motor car brakes. The Jam Handy Organization.

BENDIX BRAKES (Slidefilm)

Explains the theory of hydraulic brakes and details the service procedure in the installation of new shoes. Florez, Inc.

BRAKE DRUMS AND SHOES (85 frames) 1940 Silent.

The fundamentals of shoe and drum braking systems. Self-energizing principles. Lining and heat dispersion. The Jam Handy Organization.

BRAKE OPERATING LINKAGE (54 frames) 1940 Silent.

The construction and organizational operation of the mechanically operated brake from foot or hand control to the shoes. The Jam Handy Organization.

HYDRAULIC BRAKES (66 pictures, 62 frames).

Explaining of the hydraulic principle and its use in actuating the brake shoes. The Jam Handy Organization.

INERTIA (93 frames) 1939.

Sound slidefilm with 16-inch double faced record. Inertia is explained in simple terms and by analogies. The Jam Handy Organization.

POWER BRAKES (92 pictures, 86 frames).

Compressed air and vacuum type brakes. The Jam Handy Organization.

VACUUM POWER BRAKES (45 pictures, 43 frames).

Maintenance and adjustment. The Jam Handy Organization.

MAKING OF SAFETY GLASS (30 minutes) 16mm silent Transportation loan.

Shows in detail the making of safety plate for automobiles. U. S. Bureau of Mines.

MAJOR BODY REPAIRS (67 pictures, 86 frames).

Measuring the damaged body to sure it up, roughing out the inner frame work, further roughing out, finish bumping operations. The Jam Handy Organization.

TURRET TOPS - PART I: REPAIR (59 pictures, 63 frames).

Complete instruction in the procedure for repairing damaged turret tops. The Jam Handy Organization.

TURRET TOPS - PART II: REPLACEMENT (138 pictures, 136 frames).

Complete instruction in the procedure for replacing turret tops damaged beyond repair. The Jam Handy Organization.

IGNITION AND SPARK PLUGS (10 minutes) 16mm sound Free loan.

Complete ignition system of one-cylinder engine depicted. Champion Spark Plug Company.

IGNITION AND SPARK PLUG (25 minutes) 16mm sound \$50; Rent \$1.50.

Entire ignition system of the automobile with all its parts shown in straight photography and animation. Bray Pictures Corporation.

MADE TO TAKE IT (25 minutes) 16mm sound Loan.
Shows step by step procedure in manufacture of spark plugs.
General Motors, A. C. Spark Plug Division.

AUTO MECHANICS (60 frames) 1941 Silent.
Wiring and electrical system in automobiles. Covers fuel combustion, carburetors, the motor, and the ignition system. Diagrams the entire electrical system. Society for Visual Education.

CHASSIS ELECTRICAL SYSTEMS (42 frames) 1940 Silent.
Typical passenger-car wiring diagram. Operation and purpose of the fuse. Suggestions on handling car wiring. The Jam Handy Organization.

COPPER NERVES 35mm sound.
This film shows the principles of automotive electrical systems and gives service hints. Florez, Inc.

CURRENT AND VOLTAGE REGULATION (110 pictures, 103 frames).
Necessity for generator regulation. Explanation of third-brush and external current and voltage regulation. The Jam Handy Organization.

GENERATOR REGULATOR, THE (69 pictures, 77 frames).
Complete checks and adjustments on the 1940 and 1941 generator regulator. The Jam Handy Organization.

GOOD IGNITION 35mm sound.
This film deals with the complete ignition system of motor vehicles; contains many useful service tips. Florez, Inc.

IGNITION SYSTEM (85 pictures, 70 frames).
Showing construction and operation of coil, condenser, breaker points, distributor, and spark plugs. The Jam Handy Organization.

IGNITION TROUBLE (126 pictures, 116 frames).
"Rule of Thumb" checks for road trouble. Preventive maintenance checks with ignition testing instruments. The Jam Handy Organization.

WATTS REGULATION AND HEAVY DUTY REGULATORS 16mm sound.
Covers the subject of operation, inspection and servicing the passenger-car voltage regulators. Florez, Inc.

WIRING SYSTEM, THE (55 frames) Silent.
Progressive checks to determine location of trouble in the wiring system-except ignition. The Jam Handy Organization.

ANTI-FREEZE - A STORY OF SCIENTIFIC RESEARCH (1 reel) 16mm sound.
The performance of various types of anti-freeze in motor and cooling systems at controlled temperature of 40 degrees below zero.
National Carbon Company, Inc.

AUTOMOBILE COOLING SYSTEM (20 minutes) 16mm sound.
Shows charts of cooling systems; various radiator cleaners; methods of cleaning and pressure flushing. National Carbon Company, Inc.

ADJUSTING VALVES (30 pictures, 35 frames).

Preparing the engine for valve adjustments; adjusting the valve on number one cylinder; checking of other valve mechanisms; adjusting the remaining valves. The Jam Handy Organization.

ALLEN METHOD OF MODERN MOTOR TUNE-UP (Slidefilm).

Illustrates the principles of operation and trouble shooting in relation to the modern automobile engine. Allen Equipment Company.

CHECKING VALVE CLEARANCE (47 pictures, 54 frames).

How to prepare engine for check by removing rocker box covers and a spark plug from each cylinder and placing the piston on top center on the firing stroke - check on parts of the valve operating mechanisms.

The Jam Handy Organization.

DOWN DRAFT CARBURETOR, THE - PART I (58 pictures, 63 frames).

Complete assembling instructions for down-draft carburetors from 1934 to 1941 inclusive. The Jam Handy Organization.

DOWN DRAFT CARBURETOR, THE - PART II (40 pictures, 49 frames).

Practical repair methods used in correcting troubles. Models 1934 to 1941 inclusive. The Jam Handy Organization.

ENGINE CONTROL SYSTEMS (45 pictures, 38 frames).

Methods of adjusting, inspecting and lubricating the controls. Various types of control handles. The Jam Handy Organization.

ENGINE INSTRUMENTS (44 pictures, 53 frames).

Principles of operation - what to look for. The Jam Handy Organization.

ENGINE LUBRICATING SYSTEMS (73 pictures, 63 frames).

Explaining splash, pressure, combinations and refinements. The Jam Handy Organization.

ENGINE TUNE-UP - PART I (70 pictures, 64 frames).

The importance of engine tune-up. A general outline of procedure which can be followed in a tune-up. The Jam Handy Organization.

ENGINE TUNE-UP - PART II (106 pictures, 80 frames).

Continuing the procedure started in Part I. The Jam Handy Organization.

LOW DOWN ON THE TUNE-UP, THE 16mm sound.

Shows recommended tune-up procedure for a 6-cylinder automobile.

Florez, Inc.

MODERN VALVE RECONDITIONING (55 pictures, 57 frames).

Instructions for valve grinding, valve seat refacing, valve guide service, and reassembly instructions. The Jam Handy Organization.

PUSHROD ASSEMBLY (51 pictures, 46 frames).

Functions, characteristics of various engine pushrods, and their importance. Removing pushrods. Inspection. Maintenance and assembly of pushrods. The Jam Handy Organization.

STARTING MOTOR, THE (89 pictures, 87 frames).

General principles, construction, and operation. Explanation of the Bendix drive, mechanical shift and solenoid applications. The Jam Handy Organization.

THAT HIGH POWER TOP INCH 16mm sound.

Shows service procedure for replacement of piston rings. Florez, Inc.

UP-DRAFT CARBURETOR, THE (51 pictures, 41 frames).

The disassembly, reassembly, and adjustment of the up-draft carburetor for cab-over-engine trucks. The Jam Handy Organization.

WHAT IS GOOD TUNE-UP 16mm sound.

Gives some basic "why" principles on the importance of certain steps in the tune-up procedure for an internal combustion engine. Florez, Inc.

CLUTCH, THE (54 pictures, 55 frames).

Cone and friction disc types and their principles of operation. The Jam Handy Organization.

COMPLETING THE TRANSMISSION OF POWER (39 pictures, 38 frames).

Propeller shafts, universal joints, and Hotchkiss and torque tube drives. The Jam Handy Organization.

DIFFERENTIAL, THE (41 pictures, 39 frames).

Why it is used and how it operates. The Jam Handy Organization.

FOUR SPEED TRANSMISSION (61 frames).

Disassembly, inspecting and reassembly. The Jam Handy Organization.

INSIDE STORY OF THE AUTOMOBILE CLUTCH 16mm sound.

Covers the service procedure involved in the replacement of an automobile clutch. Florez, Inc.

POWER TRANSMISSION TROUBLE (81 pictures, 68 frames).

Most common sources of trouble in the clutch, transmission, universal joints, propeller shaft, and rear axle assembly. The Jam Handy Organization.

TRANSMISSION, THE (66 pictures, 60 frames).

Application of power through gear reduction, explaining the simple selective gear transmission. The Jam Handy Organization.

TWO-SPEED REAR AXLE, THE (80 pictures, 85 frames).

Disassembly, inspection, reassembly, and adjustment. The Jam Handy Organization.

SYNCHRO-MESH TRANSMISSION, THE (151 pictures, 127 frames).

Disassembly, inspection repair, and reassembly of the Synchro-Mesh transmission for 1937, 1938, and 1939 plus information on 1940 and 1941 models. The Jam Handy Organization.

VACUUM GEAR SHIFT (72 pictures, 130 frames).

Repair, adjustment and maintenance of the entire vacuum gear shift unit. The Jam Handy Organization.

SPRINGS (13 minutes) 16mm sound.

Demonstrates the principle on which all springs operate and shows their actual manufacture. British Information Service.

FRONT AXLES AND STEERING GEAR (79 pictures, 70 frames).

Explanation of Elliott, reverse Elliott, and Lemoine axle ends. The basic steering gear linkage and types of worm-gear applications. The Jam Handy Organization.

FULL-FLOATING REAR AXLE - PART I (38 pictures, 39 frames).

Axle shaft replacement and rear wheel bearing replacement. The Jam Handy Organization.

FULL-FLOATING REAR AXLE - PART II (57 pictures, 56 frames).

Third member assembly overhaul, including propeller shaft, universal joint, ring gear, pinion, and differential assembly. The Jam Handy Organization.

HYPOID REAR AXLE (105 pictures, 124 frames).

Complete overhauling instructions for both passenger car and truck hypoid rear axles. The Jam Handy Organization.

KNEE ACTION - PART I (27 pictures, 31 frames) Prior to 1939.

Removal and replacement of Dubonnet type knee-action unit used prior to 1939. The Jam Handy Organization.

KNEE ACTION - PART II (60 pictures, 61 frames) Prior to 1939.

Disassembly and reassembly of the unit itself after removal from car. The Jam Handy Organization.

KNEE ACTION - PART III (53 pictures, 59 frames) 1939, 1940, 1941.

Disassembly, inspection, repair, and reassembly of the 1939-41 knee-action unit, not the Dubonnet type. The Jam Handy Organization.

REAR AXLES (57 pictures, 47 frames).

Explaining the principles involved in semi-floating three-quarter floating, and full-floating rear axles. The Jam Handy Organization.

SHOCK ABSORBERS (52 pictures, 50 frames).

Types and uses. The Jam Handy Organization.

SPRINGS (103 pictures, 91 frames).

Principles of spring suspension - types - "knee-action." The Jam Handy Organization.

STEERING GEAR, THE (103 pictures, 116 frames).

Removal, disassembly, inspection, reassembly and adjustment of the worn and straddle mounted section type of steering gear used on 1937 trucks and conventionally sprung passenger cars and 1938 and 1939 trucks, plus information on 1940 and 1941 trucks. The Jam Handy Organization.

WHEEL ALIGNMENT 16mm sound Sale or Loan.

Deals with the technical service aspects for the correction of caster, camber, and toe-in for a Ford automobile. Ford Motor Company.

WHEEL ALIGNMENT AND BALANCE (118 frames).

Principles behind and governing wheel alignment and front end angles. Principles of static and dynamic wheel balance. The Jam Handy Organization.

WHEEL BALANCING (58 frames).

Complete instructions for both static and dynamic wheel balancing. The Jam Handy Organization.

WHEELS, RIMS AND TIRES (78 frames).

Automotive mechanical training. The Jam Handy Organization.

INTRODUCTION TO PREVENTIVE MAINTENANCE (13 minutes) Slidefilm OE461.

Reasons for preventive maintenance; objectives of the preventive maintenance program; importance of preventive maintenance in truck operation; typical checking and testing procedures; maintenance of effective record systems. USOE-Castle Films.

IT'S UP TO YOU (20 minutes) 16mm silent.

Tractor maintenance and correct servicing procedure with troubleshooting sequences presented in animated drawings. Caterpillar Tractor Company.

LUBRICATION OF AUTOMOBILE (15 minutes) 16mm silent Transportation only Standard Oil in cooperation with U. S. Bureau of Mines.

Shows research conducted by engineers to develop and test suitable lubricants for modern high-speed, close-fitting engines and depicts large number of lubricants necessary to scientifically lubricate cars, trucks and busses under all climatic and operating conditions. U. S. Bureau of Mines.

WHAPODY IN STEEL (20 minutes) 16mm silent.

Assembly of the part of a Ford car in stop-motion photography synchronized with an original musical score. Ford Motor Company.

AUTOMOBILE INDUSTRY, CAREERS IN \$2. Society for Visual Education.

AUTOMOBILE MANUFACTURE, River Rouge Plant \$2. Society for Visual Education.

CAB-OVER-ENGINE TRUCK (63 pictures, 69 frames).

Instructions covering the changes in service procedure due to the unconventional design of cab-over-engine trucks. The Jam Handy Organization.

SAFETY FACTORS (105 pictures, 77 frames).

Maintenance of brakes, steering gear, horn, lights, and windshield wiper. The Jam Handy Organization.

USE AND CARE OF HAND TOOLS 16mm sound.

Film Number and Title	Running Time (Minutes)
101 Wrenches	20
102 Pliers & Screwdrivers	17 $\frac{1}{2}$
103 Chisels	12
104 Hammers	11
105 Punches, Drifts, and Bars	14
106 Hacksaws	18

They cover practically all of the various types of hand tools of general use; show the correct methods for better, faster, safer work; abuses to be avoided; and increase life of tools by proper care. Plomb Tool Co.

CARPENTRY

PRINCIPLES OF PLANNING AND THE CONSTRUCTION OF LOW PRICED HOMES (4 reels) 16mm sound.

Story about how to select homes. Shows clearly and interestingly the principles to follow and observe in planning and constructing the small home. Y. M. C. A. Motion Picture Bureau.

THE HOUSE THAT ANNE BUILT (6 reels) 16mm sound.

John Manville's feature all-star talking motion picture, packed with fascinating ideas about new homes and home remodeling. Y. M. C. A. Motion Picture Bureau.

RESIN FOR THE WORLD (1 reel) 16mm silent Bell-Howell Company.

TIMBER R-R-R (1 reel) 16mm 35mm silent.

Timber growing and logging practices in the California pine region. U. S. Department of Agriculture, Division of Motion Pictures.

WILD WOOD WORKERS (1 reel) 35mm.

Preparing yellow pine trees for use; activities of sawyers, axmen, teamsters, and boatmen. Western Electric Company.

THE METEOR (2 reels) 16mm 35mm safety film.

Tells of the origin of crosscut saws and their development with a picture trip through a factory. E. C. Atkins & Company.

THE SERPENTS TOOTH (1 reel) 16mm 35mm safety film.

Handsaws with its romantic history and present modern manufacturing methods. E. C. Atkins Company, Sheffield Saw Works.

THE MANUFACTURE OF DOUGLAS FIR PLYWOOD (1 reel) 16mm silent.

Steps in the manufacture of Douglas Fir plywood from forest through the mill in detail, with brief showing of uses. Y. M. C. A. Motion Pictures Bureau.

FABRICATING THE WESTERN PINES (1 reel) 16mm sound.

Graphic portrayal of the fabrication and assembly of sash doors, frames and screens as made from western pines. The Western Pine Association.

BUILDING A HOME OF WESTERN PINES 16mm sound.

Step by step portrayal of the actual building of the Western Pine Home at the Golden Gate International Exposition in San Francisco. Western Pine Association.

THE STORY OF CANADIAN PINE (3 reels) 16mm sound.

In this film the entire story of Canadian white pine from forest to export of the finished product is covered in detail. Y. M. C. A. Motion Picture Bureau.

CONQUEST OF THE FOREST (1 reel) 16mm silent.

Scenes in the logging country of the Northwest, with a comprehensive picture of the lumber industry. General Electric Company.

BIG TIMBER (1 reel) 16mm sound.

Large scale lumbering operations are shown in Canada's Pacific Province and spectacular scene of logging activities. Department of Education, American Bureau of Natural History.

THIRTY YEARS OF LOGGING (2 reels) 16mm sound 22 minutes.

Shows the change from one logging method to the next over a period of the last thirty years. Although west coast methods and personalities are dealt with to a great extent, the film will provide interesting entertainment for everyone, particularly forestry students. Allis Chalmers Manufacturing Company.

FROM TREES TO LUMBER (1 reel) 16mm sound 10 minutes.

Methods of cutting and hauling the smaller pine of our Southeast are shown and described. International Harvester Company.

BENCHWORK (10 slidefilms).

Describes tools, hand and power hacksaws, drills and drilling, reaming, tapping and threading, finishing rough castings, scraping, rivets, and riveting, layout tools and measurement in layout work. The Jam Handy Organization.

SAFE PRACTICES IN WOODWORKING (22 slidefilms)

(8) Basic Shop Safety (14) Woodworking Tools and Machines.
The Jam Handy Organization.

LUMBERING (21 minutes) 16mm sound Color Rent \$3.

Beautiful color film describing large scale lumbering operations in all the reality in which they exist today. Shows operations of felling the trees, removing them to the sawmill, sawing and curing the lumber. University of Wisconsin, Extension Department.

FORESTS FOREVER S-728 (3 reels) 16mm sound Color Service charge 50¢ plus \$2 Registration Fee.

This picture shows what can be done to stop destructive cutting practices to restore and maintain a thrifty growing stock of valuable trees, and to safeguard forest productions for the years ahead. Y. M. C. A. Motion Picture Bureau.

OPERATION OF A FOREST NURSERY S-444 (1 reel) 16mm sound Service charge 50¢ plus Registration Fee.

How true seeds are gathered and how seedlings are cared for until ready to transplant in the open. Y. M. C. A. Motion Picture Bureau.

STOP FOREST FIRES S-415 (1 reel) 16mm sound Service charge 50¢ plus Registration Fee.

Contains scenes of recent major forest fires, showing fire fighters at work and damage done to the woods, wild life and soil in burnt-over areas. Y. M. C. A. Motion Picture Bureau.

THERE'S MORE THAN TIMBER IN TREES S-411 (3reels) 16mm sound Service charge 50¢ plus Registration Fee.

Shows the effect of forest cutting practices on labor, the need for a nationwide forest program to stop destruction of the resources, to keep forests producing and to furnish more permanent jobs. Y. M. C. A. Motion Picture Bureau.

AMERICAN WALNUT (22 minutes) 16mm sound Color.

The manufacture of solid and veneer construction; the making of plywood, and how figured paneled surfaces are produced. American Walnut Manufacturing Association.

FURNITURE CRAFTSMEN (11 minutes) 16mm sound \$50.

Story of custom built furniture; roles of designed and skilled craftsmen described. Encyclopedia Britannica Films.

HOW TO FINISH PLYWOOD (22 minutes) 16mm sound Color 1942.

Finishing of plywood; painting, staining, enameling to create proper exterior and interior finishes. Douglas Fir Plywood Association.

MASTERPIECES OF MAHOGANY (30 minutes) 16mm silent Loan.

From the beginning as a piece of rough solid mahogany lumber through the design and scaled shop drawings, a table is produced as the camera follows the step by step process. Mahogany Association, Inc.

MIRACLE IN WOOD (35 minutes) 16mm sound Color.

The making of plywood; the giant peeler logs, blocks peeled into veneer into plywood. Douglas Fir Plywood Association.

PLYWOOD FLEET (34 minutes) 16mm sound Color 1942.

Building small boats; sail boats, power boats, speed boats, and racing shells. Douglas Fir Plywood Association.

PLYWOOD, THE MIRACLE WOOD (35 minutes) 16mm sound Color 1942.

Uses of the material in industry with story of its manufacture. Douglas Fir Plywood Association.

PREFABRICATION WITH PLYWOOD (35 minutes) 16mm sound Color 1942.

Shows factory prefabrication with a survey of the prefabrication industry. Douglas Fir Plywood Association.

REDWOOD SAGE (14 minutes) 16mm silent.

Redwood lumber industry of northern California, the cutting, loading, transportation, mill sawing and finishing operations. Haselton, Guy D.

ROMANCE OF MAHOGANY (45 minutes) 16mm silent 1937.

The making of mahogany lumber and veneers from the felling of trees in the tropical jungles to the factory. Mahogany Association, Inc.

TREES AND HOMES (33 minutes) 16mm sound Color.

The Weyerhaeuser plant in Washington shown in logging and mill operations. Weyerhaeuser Sales Company.

BEVELING, MITERING, RABBETING AND DADOING (19 minutes) 16mm sound \$26.46 OE307.

Shows how to cut a bevel with tilted fence; how to cut a bevel with tilted blade; how to set a miter gage; how to use a stopblock in mitering; how to set the fence and blade for cutting rabbets; how to install and use a dado head. USOE-Castle Films.

BEVELING STOP CHAMFERING AND TAPERING SQUARE STOCK (20 minutes) 16mm sound \$27.09 OE303.

Shows how to set fence for bevel cutting; how to adjust the proper amount of cut; how to cut chamfer; how to set infeed and outfeed tables for stop chamfer; how to set stop blocks; how to cut tapers; how to observe all proper safety precautions. USOE-Castle Films.

CHISELS (12 minutes) 16mm sound \$10.78 1943.
Use and care of chisels. Plomb Tool Company.

CUTTING COVE MOLDING AND COREBOX (19 minutes) 16mm sound \$26.46 OE311.
Shows how to select stock for cove molding; how to mark the stock; how to cut and rip cove molding; how to set up equipment and make progressive adjustments in oblique cutting; how to select the proper blade for oblique cutting; how to cut a deep hollow. USOE-Castle Films.

CUTTING GROOVES WITH CIRCULAR SAW BLADES (22 minutes) 16mm sound \$29.02 OE320.

Shows how to set up the machine to cut grooves; how to cut grooves in stiles and rails; how to cut grooves for splines; how to cut stop channels in mirror frame members. USOE-Castle Films.

CUTTING TENONS AND SEGMENTS (15 minutes) 16mm sound \$22.58 OE308.
Shows how to lay out and cut a tenon; how to set up the equipment to make shoulder cuts; how to set up the equipment to make first and second cheek cuts; how to prepare a jig to trim and miter segments. USOE-Castle Films.

ESSENTIALS OF WOOD TURNING (15 minutes) 16mm silent \$24 Rent \$1
(10 minutes) 16mm sound \$36 Rent \$1.50.
Shows the operation of the simple wood lathe; the scraping method; and usefulness of woodworking machinery. Bell & Howell Company.

FACE PLANING UNEVEN SURFACES (13 minutes) 16mm sound \$19.21 OE304.
Shows how to surface wide stock on one side; how to use a pusher; how to make and use a feather board; how to use a backing block for facing thin stock. USOE-Castle Films.

FACE TURNING A COLLAR (16 minutes) 16mm sound \$23.35 OE317.
Shows how to prepare a faceplate chuck; how to attach work to faceplate chuck; how to turn a fillet; how to taper turn a recess. USOE-Castle Films.

HAMMERS (11 minutes) 16mm sound 1943.
Shows types of hammers and correct ways of handling them. Plomb Tool Co.

HAND SAWING (20 minutes) 16mm sound 1943.
Shows fundamentals of handling hand saws; methods of choosing right saw for the job. Coping saw uses demonstrated. The Jam Handy Organization.

JOINTING AN EDGE FOR GLUING - INSTALLING KNIVES (21 minutes) 16mm sound \$27.71 OE305.

Shows how to determine when knives are dull; how to remove dull knives; how to install sharp knives on the cutter head and adjust them for proper cutting; how to straighten crooked stock; and how to joint edges for gluing. USOE-Castle Films.

JOINTING EDGES AND END GRAIN 90 DEGREES TO A FACE (17 minutes) 16mm sound \$24.60 OE302.

Shows how to set the fence and infeed table to proper height; how to feed with the grain; how to joint end grain so as to prevent tearing; and how to observe all necessary safety precautions. USOE-Castle Films.

PLANING ROUGH SURFACES TO DIMENSIONS (17 minutes) 16mm sound \$24.60 OE301.

Shows how to adjust the table for desired thickness; how to set feed rolls for proper speed; how to feed with the grain; and how to surface short pieces and glued stock. USOE-Castle Films.

TABBETING AND SHAPING AN EDGE ON STRAIGHT STOCK (18 minutes) 16mm sound \$25.81 OE318.

Shows the principles of shaper operation; how to set up the machine for cutting rabbets; how to cut rabbets; how to set up the machine to shape molding; how to shape a molding. USOE-Castle Films.

RIPIING AND CROSS-CUTTING (19 minutes) 16mm sound \$26.46 OE306.

Shows how each working part of the variety saw functions; how to check saw blades; how to set the fence; how to protect one's self on the job; how to change saw blades; how to use a cutoff gage; how to use a hinged block in cross-cutting. USOE-Castle Films.

SANDING FLAT AND IRREGULAR SURFACES (18 minutes) 16mm sound \$26.46 OE312.

Shows how the belt sander operates; how to prepare a sanding belt; how to sand flat stock on a belt sander; how to sand curved molding on a belt sander; how to use and replace sandpaper on a spindle sander. USOE-Castle Films.

SAWING A REVERSE CURVE AND A BEVEL REVERSE CURVE (18 minutes) 16mm sound \$25.81 OE310.

Shows how to select and lay out stock to avoid waste; how to reverse curves to contour lines; how to use the table tilting gage; how to saw a beveled, reverse curve; how to prepare a template for a newel post; how to saw a newel post having reverse curves. USOE-Castle Films.

SAWING WITH JIG AND CHANGING BAND (20 minutes) 16mm sound \$27.74 OE309.

Shows how to select the proper band saw blades for the job; how to change blades; how to fold blades for storage; how to adjust saw guides; how to mark stock and cut to the mark; how to prepare a jig; how to cut discs using a jig. USOE-Castle Films.

SHAPING AFTER TEMPLATE AND SHAPING CURVED EDGES (17 minutes) 16mm sound \$25.17 OE319.

Shows how to make a template for job; how to install knives in the

spindle; how to use the template when smoothing squared edges; how to set up equipment for shaping a curved edge; how to shape a curved edge in more than one cut. USOE-Castle Films.

TURNING A CYLINDER BETWEEN CENTERS (17 minutes) 16mm sound \$24.60 OE313.

Shows how to choose and center stock for a job; how to mount stock in the wood lathe for turning between centers; how to select the proper speed; how to select and use cutting tools; how to use the parting tool to establish diameter and length; how to use the skew chisel; how to sand turning work; the safety factor involved. USOE-Castle Films.

TURNING TAPER WORK (12 minutes) 16mm sound \$18.59.

Shows how to center cylindrical wood stock for spindle turning; how to make a clearance cuts and why they are made; how to establish the diameters of a taper; how to turn a single taper; how to establish diameters for turning two tapers from a single piece of material; how to turn tapers. USOE-Castle Films.

TURNING WOOD IN CHUCK (15 minutes) 16mm sound \$22.11 OE316.

Shows how to mount work on a faceplate; how to turn one face of the work; how to make a chuck for the opposite face; how to fit the finished face to the chuck; how to turn the second face. USOE-Castle Films.

TURNING WORK ON A FACEPLATE (15 minutes) 16mm sound \$22.73 OE315.

Shows the various types of faceplates; how to choose the proper faceplate; how to attach the stock to the faceplate; how to true up the work; how to scribe the work for inside turning; how to use the roundnose chisel and diamond point chisel; how to smooth the bottom of the recess. USOE-Castle Films.

CABINETMAKING (Slidefilm) \$2. Society of Visual Education.

CARPENTRY (Slidefilm) \$2. Society of Visual Education.

DOORWAY TO HAPPINESS (30 minutes) 16mm sound Color 1942.

Logging, manufacture of doors and millwork; use and care in the homes. Fir Door Institute.

HOME BUILDERS AT WORK (45 minutes) 16mm silent \$32.50 1936.

The building of a home from plans and blueprints to its occupation, with a description of the various trades involved in its construction. Purinton, Robert F.

HOW TO BUILD A HOME IN 78 MINUTES (30 minutes) 16mm sound 1943.

Technical review of the fabrication and erection of 5000 Homasote homes in 5 months time, showing the precision-built system of construction. Homasote Company.

MAKING OF AMERICAN HOMES (20 minutes) 16mm sound Color 1943.

How the kitchen and bathroom may be rebuilt and modernized into rooms of beauty and utility; manufacturing process in the making of porcelain fixtures. Castle Films.

MOUNTAINS OF MARBLE (22 minutes) 16mm sound.
Depicts the marble industry in its entirety. Vermont Marble Company.

ROOFS (35 minutes) 16mm sound Color 1941.
History of the invention of asphalt, ready-to-lay roofing by the Rubberoid Company in 1892. Process of manufacturing asphalt shingles and roofings, demonstration of asphalt roofing products. The Rubberoid Company.

BUILDING TRADES, CAREERS IN (Slidefilm) \$2. Society for Visual Education.

MARBLE, VERMONT (Slidefilm) \$2. Society for Visual Education.

FUELS AND HEAT (11 minutes) 16mm sound 1938 \$50.
Animation shows the manufacture and storage of carbohydrates by plants the role of carbon in the burning of fuels; the formation of coal and petroleum; the process of combustion; molecular action in relation to heat and temperature; and the operation of the steam and gasoline engines. Encyclopedia Britannica Films.

STORY OF ROCK WOOL HOME INSULATION, THE (25 minutes) 16mm sound 1942.
Shows the cause of draft and loss of heat due to lack of insulation. Johns-M in cooperation with U. S. Bureau of Mines.

DOUGLAS FIR PLYWOOD (30 minutes) 16mm sound Color.
Logging operations and details of making plywood by both the cold and hot press method; uses of plywood. Denver & Rio Grande Western Railroad.

HOUSING IN AMERICA (1 reel) 16mm sound \$50.
Contrasts the "dream" home of modern technology with the inadequate houses of today. Important points brought out in the film include protection from the weather, adequate light, safety, beauty, and freedom from intruders. Encyclopedia Britannica Films.

TREASURES OF THE FOREST (15 minutes) 16mm sound \$16 1941.
Cutting and transportation of logs to mills; cutting logs into lumber and pulpwood; manufacture of wood pulp, paper and viscose, and viscose into rayon. USDA-Castle Films.

WOODWORKER (11 minutes) 16mm sound \$50 1940.
Carpentering, mill working, cabinetmaking, pattern making phases of wood-working industry. Vocational Guidance Films, Inc.

BAND SAW (79 pictures, 89 frames).
Introduction to the band saw; names and functions of parts; safe practices for setting up a band saw; safe practices for band sawing. The Jam Handy Organization.

BELT SANDER (62 pictures, 84 frames).
Introduction to the belt sander, names and functions of parts, safe practices for belt sanding. The Jam Handy Organization.

CIRCULAR SAW: PARTS INSTALLING A BLADE (74 pictures, 76 frames).
Introduction to the circular saw; kinds; names and functions of parts;

kinds of blades; installing a blade. The Jam Handy Organization.

CIRCULAR SAW: SETTING UP - OPERATING (40 pictures, 64 frames).
Safe practices for setting up a circular saw; safe practices for using a circular saw. The Jam Handy Organization.

DISC SANDER (31 pictures, 48 frames).
Introduction to the disc sander; kinds; names and functions of parts; safe practices for setting up a disc sander. The Jam Handy Organization.

DRILL PRESS (63 pictures, 82 frames).
Introduction to the drill press; names and functions of parts; safe practice for using a drill press. The Jam Handy Organization.

HAND TOOLS - HAMMERS - SAWS (41 pictures, 67 frames). The Jam Handy Organization.

JOINTER (62 pictures, 83 frames).
Introduction to the jointer; names and functions of parts; safe practices for using a jointer. The Jam Handy Organization.

JIG SAW (76 pictures, 96 frames).
Introduction to jig saw; names and functions of parts; safe practices for jig sawing. The Jam Handy Organization.

LATHE: FACEPLATE TURNING - OTHER OPERATION (35 pictures, 74 frames).
Safe practices for setting up a lathe for faceplate turning; safe practices for faceplate turning; safe practices for faceplate turning; safe practices for sanding and polishing; safe practices for drilling. The Jam Handy Organization.

LATHE: PARTS - SPINDLE TURNING (74 pictures, 86 frames).
Introduction to the wood-turning lathe, kinds of wood-turning lathes; names and functions of parts; safe practices for setting up a lathe for spindle turning; safe practices for spindle turning. The Jam Handy Organization.

PLANER (47 pictures, 75 frames).
Introduction to the planer; names and functions of parts; safe practices for using a planer. The Jam Handy Organization.

PLANES - BITS - KNIVES - CHISELS - SCREWDRIERS - FILES (52 pictures, 72 frames).
Safe use of smooth, jack, and jointer planes; bits and drills; chisels; gouges, and carving tools; knives, selecting and using screwdrivers; safe use of files and wood rasps. The Jam Handy Organization.

CARE AND CLEANING OF SPRAY EQUIPMENT SN194 (Slidefilm).
Describes parts, nomenclature and maintenance of dope and paint spray equipment. Navy-Castle Films.

SPRAY PAINTING EQUIPMENT (73 pictures, 61 frames).
Typical outfit; how to works; types aircaps; internal mix, external mix; and suction; gun construction and use; cups; suction feed; gravity feed,

and pressure feed; tanks; agitators; air and fluid hose; types and constructions, transformers and condensers; cutaway sections of all principal parts. The Jam Handy Organization.

CERAMICS *

CERAMICS (2 reels) 16mm silent.

A study of the art of pottery in the studio of Leon Volkmer. Religious Motion Picture Foundation, Inc.

GIRL POTTERY MAKERS (1 reel) 35mm silent.

Study of the ceramics art. Pinkney Film Service.

PORCELAIN INDUSTRY IN CZECHOSLOVAKIA ($\frac{1}{2}$ reel) 16mm 35mm silent.

Processes from common clay to finished hand-painted lustrous china. Society for Visual Education.

TABLEWARE (1 reel) 16mm silent.

Modern methods of manufacture in preparing clays for pottery; modeling, casting, firing and decoration of ware. Eastman Kodak Company, Teaching Films Division.

THE POTTERY MAKER (1 reel) 16mm 35mm silent.

How the potter works at his wheel. American Museum of Natural History.

THE POTTERS WHEEL (1 reel) 16mm 35mm silent.

Manufacture of porcelain. American Museum of Natural History.

A. B. C. OF POTTERY (COIL METHOD) (1 reel) 16mm silent.

A detailed demonstration of the making of a small clay bowl by the coil method-easiest of all. Tools and operations are clearly shown. The bowl is finished on the potter's wheel. Successfully used in elementary grades as well as in the high school. American Museum of Natural History.

INDIAN POTTERY MAKING (2 reels) 16mm silent.

In the Pueblo Indian Village of San Ildefonso near Santa Fe, New Mexico, Maria and Julian Martinez renowned makers of pottery, show in detail the entire process of making pottery. American Museum of Natural History.

OLDEST OF THE ARTS, THE (POTTERY) ($\frac{1}{2}$ reel) 16mm silent.

Complete process of pottery-making demonstrated at the oldest of American Potteries; "throwing," turning, glazing, firing, etc. Bray Pictures Corp.

WORKSHOPS OF OLD MEXICO (1 reel) 16mm sound Rent \$1.50.

Shows the Mexican peasant at work at the trades and crafts that the typical Mexican has followed for centuries. International Theatrical and Television Corporation.

ZAPOTECAN POTTERS (1 reel) 16mm sound.

We are shown the fine art in the religious buildings. Natives are skilled in handicrafts, pottery and metalwork. International Theatrical and Television Corporation.

ABC OF POTTERY MAKING, THE - THE COIL METHOD (15 minutes) 16mm silent 1938.

Forming of the base, application of the coils, blending one coil into another; shaping on the potter's wheel. The other tools used are covered in this film. University of Southern California, Extension Department.

BLOW PIPES (36 minutes) 16mm sound Color 1940.

Films show how glassware is manufactured by hand and by machine. Owens-Ill Glass Company.

BRICK - FROM CLAY TO PAVEMENT (10 minutes) 16mm sound Transportation only 1937.

The final product, vitrified paving brick, is shown first as clay and is carried through all the processes of manufacture. U. S. Department of Agriculture.

FROM DESERT SAND TO SPARKLING GLASS CREATIONS (25 minutes) 16mm silent. Entire process of making glass is shown. Kerr Glass Manufacturing Corp.

GLASS BLOWING TECHNIQUE (15 minutes) 16mm silent \$24 or write for nearest distributor 1924.

Part 1: Elementary glass blowing; procedure and manipulation. Encyclopedia Britannica Films.

GLASS SERVANT OF MAN (56 minutes) 16mm silent.

Machine and hand making processes in all types of glass products are shown. Owens-Ill Glass Company.

GLASSING IN DURAGLAS CONTAINERS (28 minutes) 16mm sound Color 1944.

Colorful scenes filmed in customers' food packing plants prove conclusively that Duraglas containers can "take it". It is the story of modern container engineering and design combined with efficient food and package handling technique. Owens-Ill Glass Company.

HEAT-TREATED SAFEDGE GLASSWARE (13 minutes) 16mm sound Color 1945.

Shows the manufacture of Libbey heat-treated tumblers both by hand and by machine. Owens-Ill Glass Company.

LOOKING THROUGH GLASS (18 minutes) 16mm sound 1943.

The manufacture of plate glass and glass objects in British factories showing the hand craftsman at work alongside the mass-production machines. British Information Service.

MAKING GLASS (14 minutes) 16mm silent \$24 Rent \$1.50 1939.

Four different objects are shown in process of making. Sazin, Henry.

MAKING OF FINE CHINA (1 reel) 16mm Color Rent.

Process is shown of the manufacture of fine pieces of pottery in the Lennox plant. Lennox-Castle Films.

MANUFACTURE OF LAMINATED GLASS (8 minutes) 16mm sound Loan.

Step-by-step manufacture of laminated glass is shown. Pittsburgh Plate Glass Company.

MANUFACTURE OF P C GLASS BRICKS (8 minutes) 16mm sound Loan.
Manufacturing steps are shown. Pittsburgh Plate Glass Company.

MANUFACTURE OF PENNVERNON WINDOW GLASS (8 minutes) 16mm sound Loan.
Various manufacturing steps are shown. Pittsburgh Plate Glass Company.

MANUFACTURE OF PLATE GLASS AND MIRRORS (15 minutes) 16mm sound Loan.
From the raw materials to the finished product, the various steps in manufacture are shown in a trip through the factory. Pittsburgh Plate Glass Company.

MANUFACTURING BRICK (2 reels) 16mm sound Transportation only.
Contrasts new methods of manufacturing brick with the old. Mechanical Brick Handling Corporation.

QUALITY CONTROL (39 minutes) 16mm sound Color 1942.
This is the story of quality control at every point in the manufacture of glass. Owens-Ill Glass Company.

ROMANCE OF GLASS (20 minutes) 16mm silent - sound 1937.
The entire process involved, the machine used, in the making of glass jars. Ball Brothers Company.

SAND AND FLAME (20 minutes) 16mm sound.
The making of glass from sand and flame: 1. Automatic bottle making; 2. Manufacture of fine glass tubing; 3. Transformation of glass marbles into fibres; how these fibres are spun into glass threads for the weaving of cloth and tape for electrical insulation; 4. The manufacture of glass bricks; 5. Plate glass manufacturing including the furnacing, rolling, cutting, grinding, and polishing; 6. How plate glass panes are made into shatter-proof glass. General Motors.

THAT THE WORLD MAY SEE (19 minutes) 16mm sound Color 1944.
This film traces the development of the glass business from its early beginnings in this country. The broad scope of the present Owens-Illinois organization is depicted together with the various types of products made at each plant. Owens-Ill. Glass Company.

BRICK AND STONE MASONRY (Slidefilm) \$2. Society for Visual Education.

CERAMIC ENGINEERING AS A CAREER (Slidefilm) \$2. Society for Visual Education.

CONCRETE ✓

CONSTRUCTION THAT ENDURES (1 reel) 16mm 35mm silent.
A story of concrete and its uses. Shows various ways in which concrete is employed in fireproof and durable construction, building, highways, statues, etc. Universal Atlas Cement Company.

FOLLOW THE WHITE TRAFFIC MARKER (1 reel) 16mm 35mm silent.
Highway safety, accidents and preventions. Shows also concrete as used in paving highways. Universal Atlas Cement Company.

FROM MOUNTAIN TO CEMENT SACK (1 reel) 16mm 35mm silent.
The story of the manufacture of Portland Cement. Universal Atlas Cement Company.

CEMENT QUARRY (1 reel) 16mm silent Rent or Purchase.
How the chief component of concrete is produced. Mogull's Camera and Film Exchange, Inc.

ELECTRICITY ✓

ELECTRICAL HEART (1 reel) 35mm silent.
The story of a dynamo. Pinkney Film Service.

TRANSFORMER THEORY (1 reel) 35mm sound.
Development of Stanley's transformer for alternating current; shows practicability of his theories. General Electric Company.

UNSEEN VALUES IN GENERAL ELECTRIC MOTORS (3 reels) 35mm sound.
Manufacture of induction motor showing considerable detail. General Electric Company, Visual Instruction Section.

ALTERNATING CURRENT MOTORS (3 reels) 16mm 35mm silent.
Detailed operations in the manufacture of an Otis Alternating Current Motor. Otis Elevator Company, Publicity Division.

BIG DEEDS (2 reels) 16mm 35mm silent.
Trip through Schenectady Works of General Electric; shows manufacture of different classes of electrical equipment. General Electric Company, Visual Instruction Section.

ELECTRICAL MEASUREMENT (4 reels) 16mm silent.
Construction and operation of electric instruments and the needs of different measuring qualities. Edited Pictures System, Inc.

ELECTRIC SHIP (1 reel) 16mm sound, 35mm silent.
Features of electrical equipment shown. General Electric Company, Visual Instruction Section.

HOW THE TELEPHONE TALKS (1 reel) 16mm silent.
Principles of communication; details of transmitter and receiver; diagrams and technical drawings. Kodoscope Libraries, Inc.

INDUCED CURRENTS (1 reel) 16mm silent.
How currents are induced in a generator; transformed and applied in a telephone. Eastman Kodak Company, Teaching Films Division.

THE ELECTRICAL TRANSMISSION OF SPEECH (1 reel) 35mm silent.
Fundamentals involved in transmission and reception of voice over wire circuits. Western Electric Company.

THE LITTLE BIG FELLOW (1 reel) 35mm silent.
Functions of an electric current in making a telephone call. National Council of the Y. M. C. A. Motion Pictures Bureau.

RUBBER INSULATED CABLES (1 reel) 16mm 35mm sound.

Shows an insulated wire and cable that is safe to touch....yet bearing in their copper strands all the electrical power in America. This picture shows how the best insulated wires are made and tested--gives flashing dramatic highlights of their use--tells an absorbing story of the age of electricity. William J. Ganz Company.

ELECTRODYNAMICS (1 reel) 16mm sound.

In this film direct photography demonstrates cause and effect, while animation explains the fundamental principles of current electricity and electromagnetism. Among the concepts presented are: Galvani's discovery of current electricity; magnetic field about a current carrying wire; magnetic field of a coil; electro-magnets; Rowland's experiment; magnetic hypothesis; reluctance; induction by a magnet; A. C. generator; D. C. generator; induction by an electric current; transformers. Erpi Classroom Films, Inc.

ELECTRONS (1 reel) 16mm sound.

By photography and animation, the hypothesis that electricity consists of unit elementary charges is supported by observation of phenomena associated with the conduction of electricity in liquids, gases, and vacuum. The film explains Faraday's laws, valence, oil drop experiment, Edison effect, cathode rays vacuum tubes, photo-electric cell, sound-on-film, and the mass of the electron. Erpi Classroom Films, Inc.

ELECTROSTATICS (1 reel) 16mm sound.

This film deals with static electricity as fundamental to an understanding of the modern theories of electricity. It explains how positive and negative electrification are produced and animated drawings show the part played by insulators and conductors. Natural exposition of the movement of charges in the electroscope, the Compton electrometer, the static machine and Nature's display of static electricity. Erpi Classroom Films, Inc.

TRANSPORTATION (2 reels) 16mm silent.

The early methods of transportation; the first use of wheels in vehicles; the first steam locomotive; the discovery and harnessing of electricity; the assembling of a modern electric locomotive; electrified railroads; types of electric locomotives. The United States Bureau of Mines, Experiment Station.

HOUSE OF POWER (1 reel) 16mm silent 11 minutes.

Showing the advancement and growth of Allis-Chalmers power machine both in the industrial and agricultural line. Allis-Chalmers Manufacturing Company.

ON THE AIR (10 minutes) 35mm sound.

An automobile radio program featuring Rubinoff is sent over the air, and an explanation is made of how radio broadcasting works. Chevrolet Motor Company.

CURRENT FLASHES (11 minutes) 35mm sound.

A vivid explanation of how the generator and electrical system of the modern automobile work. Chevrolet Motor Company.

THE INSIDE OF YOUR TELEPHONE (2 reels) 35mm silent.

Gathering and utilizing of 15 raw products used in manufacturing of the telephone. Western Electric Company.

THE TELEPHONE REPEATER (1 reel) 35mm silent.

Operation of a vacuum tube as a telephone repeater which amplifies the voice current at intervals. Western Electric Company.

THE WIZARDRY OF WIRELESS (2 reels) 16mm 35mm silent.

History of communication; explanation by animated drawing of principles involved in wireless. General Electric Company, Visual Instruction Section.

THE CHEMICAL EFFECTS OF ELECTRICITY (1 reel) 16mm silent.

Action of two electrodes in electrottype traced from crude beginnings, through modern battery manufacture, electrolysis, electroplating, to metallurgy of copper and aluminum. Edited Pictures System, Inc.

MAZDA LAMP MANUFACTURING (2 reels) 16mm 35mm silent.

Detailed steps in manufacturing of lamps. General Electric Company, Visual Instruction Section.

STORY OF THE STORAGE BATTERY (2 reels) 16mm.

Uses and manufacture. American Museum of Natural History.

THE CONDUCTOR (1 reel) 16mm silent.

Making a lamp cord. General Electric Company, Visual Instruction Section.

THE NEW FRONTIERS (2 reels) 16mm 35mm sound.

Summarizes achievements of industrial scientists; electricity's contributions to industrial purposes. Westinghouse Electric and Manufacturing Company.

THOMAS A. EDISON (1 reel) 16mm silent.

Methods employed in the development of his great invention, the incandescent lamp. General Electric Company, Visual Instruction Section.

TRAVELING WAVES ON TRANSMISSION LINES (3 reels) 16mm 35mm silent.

Shows in animated behavior an electrical current traveling along 250 miles of transmission line. Massachusetts Institute of Technology, Visual Education Department.

WHITE COAL (2 reels) 35mm silent.

Manufacturing of electricity by water power. Westinghouse Electric and Manufacturing Company.

BASIC ELECTRICITY (12 slidefilms).

This series of 12 educational slidefilms with approximately 850 pictures deals with the basic principles of electricity and some of its applications. The subjects covered follow: (1) Magnetism (2) Static Electricity (3) Current Electricity (4) The Electric Cell (5) The Storage Battery (6) Electromagnetism (7) The Generator (8) Alternating Currents (9) Electric Motors (10) Heating and Lighting Applications (11) Electric Motors (12) Applications for Solenoids, Motor Uses, Radio and Electroplating. The Jam Handy Organization.

ELECTRONICS AT WORK (20 minutes) 16mm sound Free loan.

Explains the six basic functions of electronic tubes and shows how each type of tube is used in some of the latest industrial and military applications. Westinghouse Electric and Manufacturing Company.

SENDING RADIO MESSAGES 16mm 35mm sound.

Film on radio principles of transmission with explanation of radio- and audio-frequency currents and their action in the modulating tube. Encyclopedia Britannica Films (formerly Erpi Classroom Films, Inc.).

HOME ELECTRICAL APPLIANCES 16mm silent.

A new Erpi Classroom Film which is designed to acquaint junior and senior high-school students with the basic scientific principles underlying the operation of common household electrical appliances. Animated drawings illustrate alternating currents throughout, and thermostatic controls, fluorescent lighting, electric refrigeration, and the maintenance and care of various items are discussed. Encyclopedia Britannica Films.

VACUUM TUBES 16mm.

Shows the operation and use of vacuum tubes, elements of electrical circuits, and receiving radio messages, designed to develop an understanding of an electrical circuit and of the elements of a simple radio receiver. Encyclopedia Britannica Films.

RADIO ANTENNAS: CREATION AND BEHAVIOR OF RADIO WAVES TF 1-474 16mm sound. Castle Films.

AERIAL NAVIGATION: RADIO AIDS TF 1-327 16mm sound. Castle Films.

MEASURING ELECTRICAL UNITS (Two parts) 16mm filmstrip. Castle Films.

INDUCTIVE REACTANCE 16mm filmstrip. Castle Films.

CAPACITIVE REACTANCE 16mm filmstrip. Castle Films.

VACUUM TUBES 16mm filmstrip. Castle Films.

AUDIO FREQUENCY AMPLIFICATION (Two parts: Audio and radio wave) 16mm filmstrip. Castle Films.

REPRODUCERS 16mm filmstrip. Castle Films.

THE OILOSTATIC SYSTEM (25 minutes) 16mm silent.

Shows installation of the 132,000 volt Oilostatic system by the Pennsylvania System at Baltimore as part of their electrification between New York and Washington. The Okonite Company.

PRINCIPLES OF ELECTRICITY (22 minutes) 16mm sound Color.

Gives the answer to what electricity actually is and what makes a motor turn. The basic principles of electricity are explained through photography and principally animation in completely understandable terms. The General Electric Company.

HOME ELECTRICAL APPLIANCES 16mm sound Rent \$1.50.

Describes house circuits, alternation currents and scientific principles

in connection with different types of lamps, irons, sweepers, and electrical refrigerators. University of Kansas, Extension Department.

RURAL ELECTRIFICATION, A SLIDEFILM (44 frames) \$1.50 sale only. Shows the importance of electric power to rural districts. Contrasts the farm work before and after electrification. American Council on Education.

GLASS SLIDES AND FILM SLIDES May be obtained from General Electric Co.

1. Steinmetz (glass or film slide) Story of the life of a great scientist.
2. Thomas A. Edison (glass or film slide) Story of his life and many inventions.
3. Magnetism (glass or film slides).
4. Science of Seeing (film slide only) Charts show eye deficiencies by age groups and suggests ways to avoid eyestrain and improve efficiency.
5. X-Rays. (film slide only) Story of its development, of its applications to solving medical, industrial and detective mysteries.

SIGHTSEEING AT HOME S-2487 (15 minutes) 16mm 35mm sound.

Shows an explanation of television with a visit to the General Electric studios to see an actual television in the making. Depicts the advance made by television in the field of electronics. General Electric Co.

PRINCIPLES OF ELECTRICITY S-2585 (20 minutes) 16mm sound Color.

This film teaches electricity by breaking the structure of matter down into atoms and by use of conventional symbols, shows the action of electrons within an atom. Useful as a review or can be used for classes that know little about electricity. General Electric Company.

THE MAGIC OF FLOURESCENCE AS-2599 (17 minutes) 16mm sound Color.

Clearly explains the principles of the way a flourescence lamp lights. Not too technical. Shows the advances that lamp research towards better lighting has contributed. Advanced Division, General Electric Lamp Department.

THE STORY OF FM S-2489 (17 minutes) 16mm sound Color.

This film in full color explains in easily understood non-technical language the difference between ordinary AM (amplitude-modulation) and the new FM (frequency-modulation) radio broadcasting. General Electric Co.

EXPLORING WITH X-RAYS S-2464 (40 minutes) 16mm 35mm sound.

A fascinating story of X-rays from their discovery, half a century ago, to recent developments. The story concerns a young medical student who goes to a radiologist for an X-ray examination of his knee and stays to learn of the many instances in which X-rays have proved of great value. General Electric Company.

WHEN YOU CAN MEASURE S-2371 (36 minutes) 16mm 35mm sound.

This film is an explanation of the manufacture and use of many intricate

electrical measuring devices and instruments. General Electric Company.

The U. S. D. A. - Washington, D. C. - offers the following double frame slidefilms for sale. Order by name and catalog number:

1. ELECTRIC POWER SERVES THE FARM (No. REA-2).
2. THE NEW RURAL SCHOOL (No. REA-5).
3. RUNNING WATER FOR THE FARM (No. REA-6).

ALL THE KINGS HORSES (1 reel) 16mm silent Rent or Purchase.
A detailed story of electrical energy; its production and application to modern industrial uses. Mogull's Camera and Film Exchange, Inc.

COMMUNICATION (1 reel) 16mm silent Rent or Purchase.
Construction and maintenance of various means of speech and message transmission. Mogull's Camera and Film Exchange, Inc.

ELECTRICIAN, THE (11 minutes) 16mm sound Rent \$1.25. Penn State College.

ELECTRIC BELL, THE (1/4 reel) 16mm silent. Rent \$1.
Animation technical drawings explain the operation of the electric bell. Bray Studios, Inc.

MAGNETISM, STUDIES IN (2/3 reel) 16mm silent Rent \$1.25.
Shows the natural magnet, permanent magnet of steel; uses of the electromagnet, and the sensitiveness of the compass needle to magnetic influence. Bray Studios, Inc.

SOURCES OF ELECTRICITY (10 minutes) 16mm sound Rent \$1.50.
Suggests various ways in which electric phenomena may be produced as by magnetic induction, friction or chemical action. Films, Inc.

COILS AND ELECTRIC CURRENTS (10 minutes) 16mm sound Rent \$1.50.
A documentary story dealing with persons and events leading up to the present day development of this great mysterious force. Films, Inc.

MAGIC IN THE AIR (9 minutes) 16mm sound.
A typical stage setting in the television studios at Radio City, New York; the construction and operation of the Iconoscope (transmitting tube) and the Kinescope (receiver); similarity between motion pictures and television illustrated. General Motors Corporation.

USES, UNLIMITED (37 minutes) 16mm sound Color 1944.
Explanation of production and operation of micro switches. Y. M. C. A. Motion Picture Bureau.

QUICK DISCONNECT FOR ELECTRICAL CIRCUITS (30 minutes) 16mm sound.
Selecting, installing, inspecting and servicing electrical connectors. Cannon Electric Company.

SOLDERING TIPS (30 minutes) 16mm sound.
How to solder electrical connectors. Cannon Electric Company.

CHEMICAL EFFECTS OF ELECTRICITY (15 minutes) 16mm silent 1930.
Shows making of dry cells, storage batteries, electric batteries.
Encyclopedia Britannica Films.

COILS AND ELECTRIC CURRENT (13 minutes) 16mm silent \$30 Rent \$1.50.
Explores the nature of the fields of force about a current-carrying wire and the theory of solenoids and electromagnets, induction coils, and electric motors. Edited Pictures Systems.

ELECTROCHEMISTRY (10 minutes) 16mm sound \$50 Write for nearest distributor.

Shows the chemical reactions as dynamic processes; shows electrolytic decomposition of hydrogen chloride. Storage battery integrates both processes. Encyclopedia Britannica Films.

ELECTRON, THE - AN INTRODUCTION (16 minutes) 16mm sound \$24.35 OEL75.
Explains the nature of electrons, electron flow in solid conductors, electromotive force, control of electron flow, electron flow and magnetic fields, types of electron flow, and induced electron flow.
USOE-Castle Films.

EXCURSIONS IN SCIENCE - No. 1 (10 minutes) 16mm sound 1935.
Illustrates elementary principles of magnetism. Shows the affinity different oils have for water and shows how the photo-cell is based upon the principle of the simple radiometer. A small model is shown being driven by three photo-cells. General Electric Company.

EXCURSIONS IN SCIENCE - No. 2 (10 minutes) 16mm sound 1936.
Illustrates the impractical though very interesting magnetic gears. Shows the practical application of the use of photo-electric cell in the photo-sorter. Details of the electric light bulb shown. General Electric Company.

EXCURSIONS IN SCIENCE - No. 3 (10 minutes) 16mm sound.
Presents two stories dealing with magnetism; one on the effect of strong magnets on weak magnets, and the electron theory of magnetism; the other the effect of cold and heat on the Curie metal used in control devices with alnico magnets. General Electric Company.

HEAT AND LIGHT FROM ELECTRICITY (15 minutes) 16mm silent Write for nearest distributor.
Deals with heating effects of electricity; shows manufacture and use of conductors, insulators, heating equipment, arc furnaces, lamps. Presents Ohm's law; explains series and parallel circuits. Encyclopedia Britannica Films.

MAGNETIC EFFECTS OF ELECTRICITY (15 minutes) 16mm silent \$50 Write for nearest distributor.
The electromagnet, the electric bell, the ammeter, the volt meter used to explain magnetism and magnetic induction. Presents theory of permanent magnetism. Encyclopedia Britannica Films.

PRIMARY CELL (11 minutes) 16mm sound \$50 Write for nearest distributor.
Animation shows operation of dry cell in terms of electron action, in-

cluding ionization of the electrolyte, polarization and depolarizer; batteries and cell in series and parallel wiring. Encyclopedia Britannica Films.

PRINCIPLES OF CURRENT ELECTRICITY (22 minutes) 16mm sound \$63 Rent \$3. Shows relation between electrostatics and electric currents; fundamentals of current electricity by animated diagrams of electron movements; relation between voltage, resistance and current in an electrical circuit. DeVry Films & Laboratories.

PRINCIPLES OF CURRENT GENERATION (22 minutes) 16mm sound \$63 Rent \$4. Makes clear principles involved in generating electrical power; correlates practical and theoretical phenomenon of electric magnetic induction. DeVry Films & Laboratories.

SERIES AND PARALLEL CIRCUITS (11 minutes) 16mm sound Write for nearest distributor. Covers resistance, current and voltage in series circuits and in parallel circuits. Encyclopedia Britannica Films.

STORAGE BATTERY POWER (20 minutes) 16mm sound. Analytical study of storage batteries and the unique features of Edison's product. Thomas A. Edison.

STORY OF ELECTRICITY (10 minutes) 16mm sound Rent \$1.50. Lodestone, magnetized iron, amber, the earth itself in gigantic field. Bell & Howell Company.

TRAVELING ELECTRIC WAVES (50 minutes) 16mm silent 1936. Behavior of electrical waves on a power transmission line; behavior of direct-current waves on an open line; behavior of direct current waves on short circuited and loaded lines. Massachusetts Institute of Technology.

WHAT IS ELECTRICITY? (20 minutes) 16mm sound 1944. Animation shows movement of electrons, flow of current; basic facts of electricity covered; making and distribution. Westinghouse Electric Corporation.

ALTERNATING CURRENT ES1-86 (Slidefilm). An elementary introduction to principles of alternating current. AAF-Castle Films.

ALTERNATING CURRENT (90 frames). Inductance, capacitance and impedance in a circuit - transformers and rectifiers. The Jam Handy Organization.

CURRENT GENERATION - PARTS I AND II. (Slidefilm) \$2 each. Eye Gate House - Society for Visual Education.

ELECTRIC CELL, THE (50 frames) (Slidefilm). The change of chemical energy into electrical energy. Primary and secondary cells. The Jam Handy Organization.

ELECTRICITY (31 frames) (Slidefilm) \$2.

Series of diagrams, illustrating electrical principles and operations. Society for Visual Education.

ELECTRICITY AND THE STORAGE BATTERY - PART I (95 frames) (Slidefilm).

The most fundamental aspects of electricity. The Jam Handy Organization.

ELECTRICITY AND THE STORAGE BATTERY - PART II (68 frames) (Slidefilm).

The storage battery of secondary cells. General construction and operation. The Jam Handy Organization.

ELECTRICAL WORKERS (Slidefilm) \$2. Society for Visual Education.

RESISTANCE (27 frames) (Slidefilm).

Each picture illustrates a form of resistance using subjects common in our everyday life. Explains the use of the rheostat and how resistance is measured. Society for Visual Education.

STATIC ELECTRICITY (73 frames) (Slidefilm).

The electron theory of positive and negative charges. The Jam Handy Organization.

ELECTRICAL MEASUREMENT (4 reels) 16mm sound - silent.

Construction and operation of electric instruments. Needs of different measuring quantities. DeVry Films & Laboratories.

PRINCIPLES OF ELECTRICAL MEASUREMENT (22 minutes) 16mm sound \$63

Rent \$3.

Construction and operation of electrical instruments. Explains operations of number of electrical measuring devices. DeVry Films & Laboratories.

WHEN YOU CAN MEASURE (40 minutes) 16mm sound \$80 1937.

Explains the use of electric measuring instruments and the development of modern types. General Electric Company.

ALTERNATING CURRENT VOLTMETERS AND AMMETERS (29 frames) (Slidefilm).

Diagrams and demonstrates principles on which AC meters work. Principles of ammeters and voltmeters and their parts. Demonstration of other types of AC meters, including the oscilloscope. Film ends with test questions. Society for Visual Education.

DIRECT CURRENT VOLTMETERS AND AMMETERS (41 frames) (Slidefilm).

Discusses how to measure flow of electricity. Shows principles on which different meters operate. Ends with test questions. Society for Visual Education.

ELECTRIC METERS (83 frames) (Slidefilm).

Construction and operation of various types of meters for electrical use. The Jam Handy Organization.

MEASURING ELECTRICAL UNITS - PART I SN645a (Slidefilm).

Describes the use and care of instruments for measuring resistance, voltage and current. Navy-Castle Films.

MEASURING ELECTRICAL UNITS - PART II SN645b (Slidefilm).

Describes use and care of instruments for measuring capacity (condensers) and alternating current. Navy-Castle Films.

CABLE SURFACE WIRING (17 minutes) 16mm sound \$24.60 OE377 (Slidefilm).

Shows how to make an electrical entrance to a building; the need for providing fuse protection in circuit; how to install nonmetallic sheathed cable; how to handle and install porcelain fittings; how to support and connect cable to meet requirements of the National Electric Code; how to prepare and connect wires for service. USOE-Castle Films.

ELECTRICAL CIRCUIT FAULTS (19 minutes) 16mm sound \$26.46 OE375.

Shows how to test for and locate common faults. USOE-Castle Films.

ELEMENTS OF ELECTRIC CIRCUITS (11 minutes) 16mm sound 1943.

Shows the nature of electric currents and circuits. Encyclopedia Britannica Films.

INSTALLATION OF 69KV OIL-FILLED CABLE (24 minutes) 16mm sound.

Shows modern methods of installing. General Electric Company.

INSTALLING CONDUIT (25 minutes) 16mm sound \$32.73 OE381.

Shows planning the job; bending electrical metallic tubing; installing the metallic tubing runs; bending rigid conduit; installing rigid conduit runs; using flexible conduit. USOE-Castle Films.

INSTALLING SURFACE METAL RACEWAY (22 minutes) 16mm sound \$29.67 OE380.

Shows how to plan the job; how to use molding raceway fitting; how to install a molding raceway run to ceiling outlet; how to install a run from ceiling outlet to wall switch; how to install run from ceiling outlet to wall fan; how to install run to floor outlet. USOE-Castle Films.

JOINING SOLID CONDUCTORS (22 minutes) 16mm sound \$29.02 OE369.

Shows how to move insulation from a wire and how to clean the conductor; how to make a Western Union, pigtail, plain tap, "wrapped tap" or Britannia, loop tap, and fixture joints; how to care for and use a blow torch; how to flux and solder joints; how to insulate joints with rubber tape and with friction tape. USOE-Castle Films.

PREPARING OLD BUILDING FOR WIRING (21 minutes) 16mm sound \$28.38

OE378.

Visualizing the obstruction and planning wire paths; shows preparing the paths for the wiring runs. USOE-Castle Films.

THREE-WIRE SERVICE ENTRANCE (24 minutes) 16mm sound \$31.44 OE374.

Shows how to mount and connect an outdoor meter connection box; how to mount and connect a service control box; how to ground a three-wire service entrance installation; how to install concentric service entrance cable. USOE-Castle Films.

WIRING OLD BUILDING WITH ARMORED CABLE (22 minutes) 16mm sound OE379.

Reviews steps in preparing a building for wiring; shows how to install a ceiling outlet with a plaster ring; how to install outlet boxes; how to cut and strip armor from cable; how to attach cable to outlet boxes; how

to run armored cable; how to repair openings in walls; how to join conductors at ceiling outlet. USOE-Castle Films.

CABLES (Slidefilm). \$2 Society for Visual Education.

FORGING AND FOUNDRY ✓

FLOW OF METALS INTO MOLDS (30 minutes) 16mm silent Color.

A study of the effects of shaping and placing gates and risers in various patterns and mold. Foundrymen's drawings are used to explain and illustrate the process. Meehanite Research Institute of America.

MANUFACTURE OF DIES (10 minutes) 16mm sound Color.

Shows manufacture of lamination dies from Huron High Carbon-High Chromium die steel. Allegheny Ludlum Steel Corporation.

STORY OF THE CHILLED CAR WHEEL (20 minutes) 16mm sound.

Shows step by step processes in making chilled car wheels. Illustrates testing and research involved. Griffen Wheel Company.

MOLDING AND COREMAKING (Slidefilm) \$2. Society for Visual Education.

DIE CASTING (35 minutes) 16mm sound Color.

A technical film showing all phases of die casting processes from the tooling of the dies to the fields of usefulness for die castings of zinc and other alloys. New Jersey Zinc Company.

DIE CASTING THE SUPER HIGH PRESSURE WAY (45 minutes) 16mm sound.

A complete picture of die casting showing the methods of producing precision dies, the action and operation of the die casting machines, and the products produced. Harvill Corporation.

FORGE WELDING (12 minutes) 16mm sound \$18.36 OE192.

Shows how to maintain a clean, deep, hot fire; heat mild steel for forging; upset and scarf round stock; make a lap weld; and shape and hammer-refine the weld. USOE-Castle Films.

FORGING AND UPSETTING MACHINES (4 reels) 16mm sound - silent.

Shows the company's machines in actual forging and upsetting operations. National Machinery Company.

FORGING WITH A HAND FORGE (13 minutes) 16mm sound \$19.65 OE191.

Demonstrates building an open fire in a forge, laying out and marking stock, heating steel, and forging an eye. USOE-Castle Films.

CHARGING AND OPERATING A CUPOLA (14 minutes) 16mm sound \$21.95 OE437. 1945.

The essential parts of the cupola and how they function; safety precautions to be used on the jobs; how to fire, charge, and operate a cupola. USOE-Castle Films.

PREPARING THE CUPOLA FOR CHARGING (21 minutes) 16mm sound \$28.38 OE436 1945.

How to recognize the end of a heat; how dropped bottom is performed; how a cupola is prepared for its next heat. USOE-Castle Films.

FOUNDRIY WORK (4 reels) 16mm silent - sound.

Shows operations in making a water-jacket gas-engine cylinder, molding, coremaking, smelting and pouring. Purdue University, General Engineering Department.

MAKING A SIMPLE CORE (15 minutes) 16mm sound \$22.11 OE424.

Shows how to prepare a suitable sand for coremaking; how to make a small cylindrical core in either one or two pieces; how cores are baked, how to assemble a two-piece core; how to locate a vertical core in a mold and provide necessary venting; how core gases escape when mold is poured. USOE-Castle Films.

MOLDING PART HAVING A VERTICAL CORE (19 minutes) 16mm sound \$26.47 OE425.

Shows how to identify the parts of a pattern which indicate how cores are to be placed; how to mold the drag and cope halves; how to mold a gate and riser instead of cutting them; why and how a pouring basis is made; how to draw a pattern with a "molder's touch"; how to vent a mold so as to permit the escape of core gases; how to locate a vertical core in the mold. USOE-Castle Films.

MOLDING WITH A GATED PATTERN (11 minutes) 16mm sound \$17.35 OE427.

Shows what a gated pattern is and why it is used. USOE-Castle Films.

MOLDING WITH A LOOSE PATTERN (Bench) (21 minutes) 16mm sound \$27.71 OE423.

Shows how to identify and use common bench molder's tools; and by animation, what takes place inside a mold during pouring. USOE-Castle Films.

MOLDING WITH A SPLIT PATTERN (19 minutes) 16mm sound \$25.85 OE426.

Shows why split patterns are used; how ramming effects the permeability of sand in a mold; how to mold the drag and cope; reinforce a mold with nails; how to patch a mold. USOE-Castle Films.

MOLDING A HORIZONTAL CORED PART (22 minutes) 16mm sound \$29.67 OE431 1945.

Shows use of a horizontal core; use of a split pattern. USOE-Castle Films.

MOLDING A VALVE BODY (26 minutes) 16mm sound \$33.36 OE430 1945.

Shows use of a split pattern and multipart dry sand core. Explains purpose and use of a runner box. USOE-Castle Films.

MOLDING PART WITH DEEP GREEN SAND CORE (25 minutes) 16mm sound \$32.73 OE429 1945.

Explains why to use a follow board with a thin, box-like pattern; shows how to reinforce a green sand core with nails; how to locate sprue and watch-up pins; how to use gagers; how to ran and vent a green sand core which must permit the escape of a considerable volume of gases.

USOE-Castle Films.

MOLDING WITH A LOOSE PATTERN (Floor) (24 minutes) 16mm sound \$32.08
OE428 1945.

Explains distinction between bench molding and floor moldings; shows how to locate a pattern to facilitate making the parting; how to face a deep pattern; how to ram a drag and walk it off; how to clamp a mold; shows why crossbars are necessary in the cope; shows how to locate sprues and risers, using spotters; how to tuck the crossbars of a large cope.

USOE-Castle Films.

MOLDING WITH A THREE PART FLASK (35 minutes) 16mm sound \$42.74
OE432 1945.

Shows use of a deep follow board; technique of facing, ramming, and venting a deep green sand core; use of a check in a three-part flask. Explains purpose and method of step-gating. USOE-Castle Films.

MOLDING ON A JOLT ROLL-OVER PATTERN DRAW MACHINE (23 minutes) 16mm sound \$30.79 OE434 1945.

Explains the principles of the jolt roll-over pattern draw machine; shows how to place the flask on the roll-over table; how to fill the drag and jolt it; how to clamp the flask to the roll-over table; how to roll the mold over; how to draw the pattern; how to set the drag; and cope pattern plates on master mold board; how to fill the cope and jolt it; how to adjust air clamps; how to finish and close the mold. USOE-Castle Films.

MOLDING ON A JOLT SQUEEZE MACHINE (10 minutes) 16mm sound \$17.07
OE433 1945.

Explains the principles of the jolt squeeze molding machine; the nature of the match plate. USOE-Castle Films.

BESSEMER AND OPEN HEARTH STEEL ($\frac{1}{2}$ reel) 16mm 35mm silent.

Process visualized by animation and actual photography; principles of regenerative process. Reading Iron Company.

IRON ORE TO PIG IRON (1 reel) 16mm silent.

Mining, transportation and smelting of iron ore; steel bridge construction; uses of steel. William H. Dudley, Visual Education Service, Inc.

MAKING IT TOUCH (3 reels) 16mm 35mm silent.

Complete cycle of alloy-steel. "Heat" in open hearth furnace, casting ingots, properties and uses. U. S. Bureau of Mines, Experiment Station.

STORY OF LEAD SMELTING (2 reels) 16mm 35mm silent.

Smelter; after refining the lead it is run into molds and cooled on molding wheels. U. S. Bureau of Mines, Experiment Station.

SURFACE CHANGES AT HIGH TEMPERATURES (1 reel) 16mm 35mm silent.

Metals heated to high temperatures in atmosphere of nitrogen in special furnace. Harvard Films Service, Biological Laboratories.

RAW MATERIALS (1 reel) 16mm silent.

Shows materials that go into steel. Starting with the mining of iron ore in open hearth pits and underground mines and its delivery to the huge ore docks and freighters. American Museum of Natural History.

THE BLACKSMITH'S GIFT (1 reel) 16mm 35mm sound.

Takes us back to 1837 to the village blacksmith shop where we see John Deere building his first steel plow. Ray-Bell Films, Inc.

FROM ONE ANVIL (1 reel) 16mm 35mm sound.

The story of a great business, the John Deere Plow Company and a great nation growing together. Ray-Bell Films, Inc.

A TRIP THROUGH A MODERN STEEL AND WIRE MILL (2 reels) 16mm 35mm sound or silent.

Shows every step in the manufacture of wire products and fence. Keystone Steel and Wire Company.

THE MOULDER (1 reel) 16mm silent.

This film shows production of small, gray iron castings by the most modern pouring and conveying system known to the trade. It is produced for our own use, but is of such excellent quality and tells such an interesting story of modern foundry practice, that we believe it will be helpful to all who see it. General Electric Company.

METALLURGY (12 slidefilms).

These twelve educational slidefilms are: (1) History of Metals, Part I (2) History of Metals, Part II (3) History of Metals, Part III (4) Making Iron and Steel (5) Working Steel (6) Properties of Iron and Steel (7) Physical Testing (8) Heat Treating (9) Alloys and Alloy Steels (10) Failures (11) Brasses, Bronze and White Metals (12) The Metallurgist. The Jam Handy Organization.

BLACKSMITHING (7 Slidefilms).

The seven educational slidefilms cover the following: (1) The Blacksmith (2) Forging Tools (3) Forgecraft (4) Forge Operations (5) Stock Calculations (6) Tool Smithing (7) Horseshoeing. The Jam Handy Organization.

LEATHERWORK ✓

AMERICAN GLOVE CRAFT (2 reels) 16mm 35mm silent.

Glove manufacture. DeFrenes and Company.

FROM HIDE TO LEATHER (1 reel) 35mm silent.

Manufacture of shoes. Wholesome Films Service, Inc.

LEATHER (1 reel) 16mm silent.

Sources of leather; tanning methods; making of shoes by hand contrasted with manufacture by modern machinery. Eastman Kodak Company, Teaching Films Division.

ROMANCE OF SHOE MAKING (2 reels) 16mm 35mm silent.

Steps in the manufacture of shoes. Mellville Shoe Corporation.

SHOES OF THE AGES (1 reel) 35mm sound.

Evolution of the shoe with actual historic relics and modern products. Mid-Continent Picture Corporation.

THE MARCH IS FORWARD (2 reels) 16mm 35mm sound.
Manufacture of shoes. National Council of Y. M. C. A. Motion Pictures Bureau.

THE SHOE (1 reel) 16mm silent.
Production from raw materials. Edited Pictures System, Inc.

THE STORY OF LEATHER (1, 2, and 3 reels) 35mm silent.
Processes through which raw hides go before they can be called leather. Wholesale Film Service, Inc.

THE STORY OF TIOGA OAK SOLE LEATHER (4 reels) 16mm sound.
The making of sole leather from cow and steer hides to finished leather; the tanning industry. McLarty Motion Picture Service.

LEATHER MAKING (20 minutes) 16mm silent Rent \$3.50.
International Theatrical and Television Corporation.

LEATHER WORK (15 minutes) (1 reel) 16mm silent - sound Rent \$2.
Various types of leather are shown; the pattern is cut, the design transferred to dampened leather and the coin and key purse begins to take shape until finally this useful article is completed. Brandon Films.

LEATHER TOOLING (20 minutes) 16mm sound \$54 Rent \$3 1945.
Tooling and carving of such articles as bags, belts and purses. Walter O. Gutlohn, Inc.

MAGIC OF SHOE MAKING (30 minutes) 16mm silent.
Latest machine processes from cutting to finishing. Gallen Kamp, Society for Visual Education.

LEATHER, A TRIP THROUGH A MODERN PLANT (Filmstrip) \$2. Society for Visual Education.

MACHINE SHOP ✓

AGE OF RIVETED STEEL (2 reels) 35mm silent.
Various uses of riveted steel in engineering construction. American Institute of Steel Construction, Inc.

METAL OF THE AGES (3 reels) 16mm 35mm silent.
Manufacture of wrought iron pipe. Reading Iron Company.

THE MARK OF THE GENUINE (20 minutes) 16mm silent.
"The Mark of the Genuine" is an educational picture particularly suited to classroom showing. It takes you into the huge John Deere Plow Works, and shows all of the main operations so important in building a quality plow share. You can see how soft-center plating, welding, testing, on through the tempering process. John Deere.

MACHINE MAKER (1 reel) 35mm sound. Order from Harvard Film Service, Biological Laboratories.

ELEMENTARY OPERATIONS ON THE ENGINE LATHE (1 reel) 16mm sound. ✓
 This skillfully prepared sound film provides invaluable help in the detailed demonstration of modern shop practice. It is replete with carefully planned, superbly photographed full-screen close-ups which isolate and greatly enlarge the critical action involved in every significant procedure. It not only permits demonstrating to the whole class at once, but enables each student to follow the action, step by step, to even greater advantage than would be possible from a position directly at the side of the instructor. The effectiveness of the film is further heightened by full explanations, in sound of every step. Eastman Kodak Company, Teaching Films Division.

BENCHWORK AND FITTING (9 Slidefilms). ✓

These educational slidefilms cover the following subjects: (1) Hand Tools, what they are, use and care (2) Hand and Power Hacksaws (3) Drills and Drilling (4) Reaming and Threading (5) Finish Rough Castings (6) Scraping (7) Rivets and Riveting (8) Layout Tools and Measuring Instruments (9) Layout Work. The Jam Handy Organization.

MACHINING (10 Slidefilms). ✓

These educational slidefilms deal with basic phases of machining: (1) The Machinist (2) Machine Tools (3) Machine Technique (4) Measurements (5) Drill Presses (6) Grinding Wheels (7) Lathes (8) Milling and Surfacing (9) Shapers and Planers (10) Specialized Machines. The Jam Handy Organization.

BLUEPRINT READING 16mm silent. ✓

This silent motion picture shows, step by step, how to read blueprints and visualizes what blueprint symbols mean in terms of the finished product. The Jam Handy Organization.

MACHINISTS AND TOOLMAKER (400 feet) 16mm silent. ✓

The film shows and explains the five ways of machining metals; employing the engine lathe, drill presses, milling machine, planer, and grinder. The importance of the knowledge of being able to use measuring devices and blueprint reading are presented. Vocational Guidance Films Company.

GRINDING WHEEL MARKINGS (18 minutes) 16mm sound Kodochrome. ✓

The subject of grinding wheel markings are presented with the idea of making a clear explanation of what each character or symbol in the standard Norton grinding wheel marking stands for. Each symbol is explained in terms of abrasive, grain size, grade, structure and bonding process. The Norton Company.

CARBOLLOY TRAINING FILMS (A set of slidefilms). ✓

1. What is Carboloy Cemented Carbide?

Provides a knowledge of what cemented carbide is, physical characteristics and how it is made.

2. Designing Carboloy Tools

Reviews special requirements necessary when tools are being designed with Carbide tips.

3. Brazing Carboloy

Details step by step, procedure for torch brazing carbide blanks

to steel shanks; shows special method for renewing worn-out H.H.S. cutters by brazing on carbide tips.

4. Chip Breakers

Shows how to determine most efficient chip breakers for carbide steel cutting tools; and procedure for grinding accurately and rapidly.

5. Grinding Carboloy

Covers grinding from brazed, damaged and ordinarily dulled states. How to hog off stock quickly; how to finish rapidly and accurately. Recommends equipment, wheels and accessories.

6. Putting Carboloy Tools to Work

General discussion of important points to observe, when applying carbide tools; discussion in three parts.

All six slidefilms can be obtained from the Carboloy Company.

FIXED GAUGES (1 reel) 16mm sound Rent \$1.25 plus transportation. This film offers a demonstration of the various types of fixed gauges and emphasizes their importance in modern mass production. Penn State College, Extension Department.

JEWELS OF INDUSTRY 16mm silent.

A trip through the Carobrundum plant at Niagara Falls. Shows actual scenes of how important abrasives are to industry. Shows use in automobile plants, marble, glass factories, furniture and implement plants. Y. M. C. A. Motion Picture Bureau.

INTRODUCTION TO MACHINING (16 Slidefilms).

Discusses machines, measuring, tools and other specialized machines. The Jam Handy Organization.

THE SET-UP AND OPERATION OF AUTOMATIC THREAD GRINDERS (1 reel) 16mm sound. Jones and Lamson Machine Company.

RAM TYPE UNIVERSAL TURRET LATHES (1 reel) 16mm sound. Jones and Lamson Machine Company.

DRILLING IN METAL, WOOD AND PLASTICS (20 minutes) 16mm sound \$21.46 1943.

Demonstrates and explains the use of several types of drills suitable for drilling in different metals, wood, or plastics. USOE-Castle Films.

MACHINING A CAST IRON RECTANGULAR BLOCK (25 minutes) 16mm sound \$32.73 OE20 1942.

The procedures for rough machining and finish machining a rectangular block of metal held in a vise mounted on the table of the machine. USOE-Castle Films.

SWAGING (26 minutes) 16mm sound.

Swaging process of pointing, shaping and attaching fittings to bar, cable and tube. Materials include steels, copper, aluminum, and some types of wood products. Standard Machinery Company.

MACHINE TECHNIQUE - PART I (85 pictures, 35 frames). ✓

Cutting tools and "tool steels"; tool material requirements; more important types of tools. The Jam Handy Organization.

MACHINE TECHNIQUE - PART II (67 pictures, 62 frames). ✓

Explanation of feed and speed - their importance; how to determine feed and speed; cooling and lubricating fluids. The Jam Handy Organization.

MACHINE TOOLS (62 pictures, 53 frames). ✓

Definition of a machine tool; five main divisions; general description of the more important machine tools. The Jam Handy Organization.

MACHINIST, THE (50 pictures, 50 frames). ✓

A history of machining; the position of the machinist in industry; training required; opportunities. The Jam Handy Organization.

POWER SUPPLY (87 pictures, 120 frames).

Starting and stopping machines wires separately from each other; machines controlled by a hand-operated master switch; machine using motor controllers and emergency stop stations; machines driven by overhead belts; shifting machine belts; shifting overhead belts; shifting machine belts. The Jam Handy Organization.

SHAPERS (52 pictures, 42 frames). ✓

The shaper, its basic parts and functions; shaper tools; types of work performed; safety hints. The Jam Handy Organization.

TOOL GRINDER (46 pictures, 63 frames). ✓

Introduction to the tool grinder, kinds of tool grinders, names and functions of parts; safe practices for setting up a tool grinder; safe practices for using a tool grinder. The Jam Handy Organization.

CUTTER SHARPENING (14 minutes) 16mm sound. ✓

Demonstrates typical tool and cutter grinding machine, with close up showing operations of grinding commonly used tools. Norton Company.

CYLINDRICAL GRINDER (20 minutes) 16mm sound. ✓

Points out operating levers, hand wheels, push buttons that control the movement of wheel, head, table, work of cylindrical grinding machine. Norton Company.

ENDFEED GRINDING A TAPER PIN (26 minutes) 16mm sound \$32.53 OE89. ✓

Shows the principles of endfeed grinding; how to use cams in tapering the regulating wheel and grinding wheel; how to rough and finish endfeed grind; how to use a taper collet gage and Prussian blue to check work; how to redress the wheels for the finish grind; how to use the light gage; how to correct taper error of less than .0005. USOE-Castle Films.

FIRST PRINCIPLES OF GRINDING 16mm sound. ✓

To demonstrate grinding principles to trainees. Carborundum Company.

GRINDING A DEEP HOLE (18 minutes) 16mm sound \$25.22 OE78. ✓

Shows how to grind the backing pins and work-holding jaws of a three-jaw chuck to hold the workpiece; how to select the spindle projection and

the grinding wheel; how to set length of stroke and break through; how to correct for taper and bellmouth; and how to check a deep hole with an inside micrometer. USOE-Castle Films.

GRINDING A PARALLEL BAR - PART I: SETTING UP THE MACHINE (14 minutes) ✓
16mm sound \$21.95 OE220.

Shows how to mount a grinding wheel; how to position the diamond tool and true the wheel; how to operate a magnetic chuck; how to use the controls of the grinder; how to grind the face of the chuck. USOE-Castle Films.

GRINDING A PLAIN PIN - PART I: GRINDING WHEEL (17 minutes) 16mm sound ✓
\$24.60 OE80.

Shows the cutting action of a grinding wheel; how to select the correct grinding wheel; how to handle and mount the wheel on the collet; how to true and balance the wheel. USOE-Castle Films.

GRINDING A PLAIN PIN - PART II: GRINDING OPERATIONS (17 minutes) ✓
16mm sound \$23.98 OE81.

Shows how to lubricate and set up a centertype grinder; how to prepare the workpiece for grinding; how to mount and adjust the workpiece for proper tension between centers; how to set the table reversing dogs; how to rough-grind a plain pin. USOE-Castle Films.

GRINDING A SLENDER SHAFT WITH BACK REST (17 minutes) 16mm sound ✓
\$23.98 OE82.

Shows how to prepare the machine for the job; how to select and set up a back rest; how to adjust the back rest during grinding; how to rough and finish-grind the long shaft; how to adjust and check for taper. USOE-Castle Films.

GRINDING A STRAIGHT HOLE (18 minutes) 16mm sound \$25.22 OE77. ✓

Shows how to use a universal chuck; how to true up the work with a dial indicator, how to select the proper grinding wheel and adjust the wheel speed; how to set the length of stroke; how to set the cross-feed for automatic grinding; and how to use the prevision cross-feed for finish grinding. USOE-Castle Films.

GRINDING A TAPER (19 minutes) 16mm sound \$26.47 OE84. ✓

Shows how to prepare an arbor for grinding; how to mount and adjust the arbor between center; how to adjust the swivel table and taper scale; how to rough and finish-grind the taper; how to check the taper ring gage and the light gage. USOE-Castle Films.

GRINDING A TEMPLATE (15 minutes) 16mm sound \$22.58 OE222. ✓

Shows how to mount and true the wheel; how to mount the sine bar on the table; how to set the sine bar for specified angles; how to set up the template on the sine bar; how to rough and finish-grind the template; how to check the workpiece for accuracy. USOE-Castle Films.

GRINDING A V-BLOCK (22 minutes) 16mm sound \$29.02 OE223. ✓

Shows how to set up a V-block to grind the ends and the V; how to rough and finish-grind the ends; how to establish reference points for grinding the V to prevision dimensions; how to check the work for accuracy. USOE-Castle Films.

GRINDING AND FACING A BLIND HOLE (17 minutes) 16mm sound \$23.98 OE79. ✓
Shows how to mount and dress the wheels on the two-spindle grinder; how to prepare the diaphragm chuck; how to plunge-grind the bore and adjust for taper; how to grind the shoulder and flange parallel at right angles to the bore. USOE-Castle Films.

GRINDING MULTIPLE POINT CARBIDE TOOLS (20 minutes) 16mm sound \$27.74 ✓
OE243.
Shows how to remove, grind, reassemble, and align blades from inserted-blade type cutter. Demonstrates circle-grinding, surface-grinding of tooth relief angles, honing, and inspecting resharpened cutters. USOE-Castle Films.

GRINDING PRACTICES (10 minutes) 16mm sound Rent or Loan. ✓
Presents theory of grinding rates, feeds, and abrasives in the grinding of special jobs such as forming and threading. McFarland or University of Illinois.

GRINDING SINGLE-POINT CARBIDE TOOLS (26 minutes) 16mm sound \$34.01 ✓
OE242.
Demonstrates preparing the wheel for grinding, semifinish and finish-grinding a dull tool, grinding a broken or chipped tip, grinding a newly brazed tool, and grinding a chip breaker. USOE-Castle Films.

GRINDING THIN DISCS (15 minutes) 16mm sound \$23.22 OE224. ✓
Shows how to true the grinding wheel; how to load and operate the magnetic chuck; how to rough-grind the discs; how to finish-grind the discs to precision measurements; how to check them for accuracy and parallelism. USOE-Castle Films.

GRINDING WHEEL - ITS CARE AND USE (17 minutes) 16mm sound. ✓
Shows mounting; balancing a new wheel, trueing it for desired finish; cause of surface imperfections; checking wheel speeds; care in storing and handling. Norton Company.

INFEED GRINDING A SHAFT OF TWO DIAMETERS (31 minutes) 16mm sound ✓
\$37.88 OE88.
Shows how to profile grind shafts by the infeed method; how to use cams in profiling the regulating wheel and grinding wheel; how to install the cams; how to profile the wheels; how to set up the centerless grinding machine for the job; how to rough and finish-profile grind. USOE-Castle Films.

INFEED GRINDING SHOULDERED WORK (23 minutes) 16mm sound \$30.05 OE87. ✓
Shows the basic principle of infeed grinding; the use of an automatic ejector; how to tilt the regulating wheel for this type of grinding; the use of the infeed lever; how to adjust the end-stop; how to position the work for grinding; how to correct work ground out of round; how to check work with V block, indicator, and micrometer. USOE-Castle Films.

MANUFACTURED ABRASIVES (24 minutes) 16mm sound 1940. (24 minutes) 16mm silent 1940.
Shows experiment that led to discovery of carborundum and shows use of power generated from Niagara Falls in the manufacture of abrasive products.

Depicts making of carborundum, making of grinding wheels by the vitrified process. Illustrates uses of manufactured abrasives. Carborundum Company in cooperation with U. S. Bureau of Mines.

MANUFACTURE OF COATED ABRASIVES (45 minutes) 16mm silent Color.
The story of the manufacture of abrasive papers and wheels. Behr Mamm-
ing Corporation of Norton.

NORTON ABRASIVES IN TOOL GRINDING (10 minutes) 16mm sound Color. ✓
Shows operations performed in the tool room with important machines.
Shows setting up for grinding an end mill on a cutter and tool grinding
machine. Norton Company.

PLUNGE CUT GRINDING (15 minutes) 16mm sound \$22.11 OE83. ✓
Shows how to mount a bushing on a mandrel; how to dress the side of the
grinding wheel; how to set a dial snap gage for the production grinding
of bushings; how to rough and finish-grind a bushing; the importance of
rhythm in production grinding. USOE-Castle Films.

PROGRESSIVE HONING, WITH AUTOMATIC SIZING (18 minutes) 16mm sound
Free Loan. ✓
Produced to illustrate lessons learned during war production programs
that can be applied to peacetime industrial production. Micromatic Hone
Corporation.

ROMANCE OF INDUSTRY, A (ABRASIVE) (45 minutes) 16mm silent.
Shows usage of abrasives, and manufacture of abrasives and abrasive pro-
ducts. Y. M. C. A. or Carborundum Company.

SHARPENING A FORM RELIEVED CUTTER (18 minutes) 16mm sound \$25.22 ✓
OE93.
Shows what constitutes the rake angle and the clearance angle of the
form relieved cutter; how to mount correct attachment; how to set up for
spotting back of teeth; how to grind face of teeth. USOE-Castle Films.

SHARPENING A PLAIN HELICAL CUTTER (16 minutes) 16mm sound \$23.35 ✓
OE91.
Shows how to mount the helical cutter on an arbor; how to arrange the
four elements in the same horizontal plane; how to grind the secondary
clearance angle; how to check and adjust for taper when grinding the pri-
mary clearance angle. USOE-Castle Films.

SHARPENING A SHELL END MILL (17 minutes) 16mm sound \$23.98 OE92. ✓
Shows how to select the correct arbor; how to mount the correct grinding
wheel; how to mount the cutter; how to set up the grinder for sharpen-
ing; how to set the correct clearance angle; how to check for correct
width of land. USOE-Castle Films.

SHARPENING A SIDE MILLING CUTTER (23 minutes) 16mm sound \$30.79 OE90. ✓
Shows how to identify the parts of a cutter; how to set up the grinder
for sharpening. USOE-Castle Films.

HOW TO RUN A LATHE (60 minutes) 16mm sound Color. ✓
Shows metal working lathe; technique of turning work between centers;

covers blueprints, measuring, centering, rough turning, finishing.
South Bend Lathe Company.

LATHE OPERATION (20 minutes) 16mm sound. ✓

Shows operation of lathe in turning, grinding, cutting, boring, tapering, and facing operations. University of Illinois, Visual Aids Services.

METAL WORKING LATHE, THE (20 minutes) 16mm sound Color B & W \$42.50 ✓
Also loan 1941.

Shows lathe, its uses, its operation and demonstrates turning, facing and thread cutting. South Bend Lathe Company.

PLAIN TURNING (20 minutes) 16mm sound Color B & W \$45 \$110 Also ✓
loan 1941.

Companion film to Metal Working Lathe; demonstrates operations in machining a shaft held between lathe centers; basic procedures in lathe work. South Bend Lathe Company.

PRECISION AT WORK (45 minutes) 16mm silent. ✓

Operation of the precision lathe; its construction. Monarch Machine Company.

ROUGH TURNING BETWEEN CENTERS (15 minutes) 16mm sound \$22.73 OE6. ✓

Shows how to set up an engine lathe for machining work held between head and tail centers. USOE-Castle Films.

TURNING A TAPER WITH THE TAILSTOCK SET OVER (17 minutes) 16mm sound \$24.60 OE44. ✓

Shows three methods used to measure the tailstock set-over when turning tapers. USOE-Castle Films.

TURNING WORK HELD ON A FIXTURES (21 minutes) 16mm sound \$27.71 OE58. ✓

Shows how to mount on a special fixture for machining an irregularly shaped casting which cannot be held in chuck; how to mount and center the fixture on the lathe; how to grind tools for the machining of brass. USOE-Castle Films.

TURNING WORK HELD ON A MANDREL (20 minutes) 16mm sound \$27 OE61. ✓

Shows what a mandrel is, and on what type of job it can be used to advantage; how to fit the mandrel into the workpiece. USOE-Castle.

TURRET LATHE, THE - AN INTRODUCTION (17 minutes) 16mm sound \$25.17 OE212. ✓

Shows how functions of the head, hexagon turret, square turret, and bed are used; how to determine the sequence of operations. USOE-Castle Films.

TURRET LATHE (45 minutes) 16mm sound Color. ✓

Shows operations which can be performed on turret lathe, the method of setting up machine for different types of cuts. Gisholt Machinery Co.

USING A BORING BAR BETWEEN CENTERS (22 minutes) 16mm sound \$28.33 OE64. ✓

Shows how to set up a boring bar between centers of a lathe; how to

clamp an irregular workpiece on a lathe carriage; and how to align the workpiece center with the lathe centerline. USOE-Castle Films.

USING A FOLLOWER REST (21 minutes) 16mm sound \$27.71 OE63. ✓

Shows what the follower rest is and when to use it; how the follower rest supports the work against the pressure of the cutting tool. USOE-Castle Films.

USING A STEADY REST (25 minutes) 16mm sound \$31.91 OE62. ✓

Shows what the steady rest is and when to use it; how the steady rest supports the work against the pressure of the cutting tool. USOE-Castle Films.

USING A STEADY REST WHEN BORING (21 minutes) 16mm sound \$27.71 OE65. ✓

Shows how to mount a long casting on a lathe face plate; how to position and adjust steady rest. USOE-Castle Films.

INTERNALLY THREADING A PLATE - MAKING A STUD - EXTRACTING A BROKEN STUD (46 pictures, 44 frames). ✓

Drilling holes for tapped thread, proper use of complete tap set; cutting external threads; removal of broken studs. The Jam Handy Organization.

LATHES - PART I (59 pictures, 59 frames). ✓

The lathe and its construction; parts and functions; holding work in lathe. The Jam Handy Organization.

LATHES - PART II (47 pictures, 46 frames). ✓

Operations performed on the lathe; care of lathes and safety hints. The Jam Handy Organization.

MACHINE TOOLS: THE LATHE FS1-4 (Slidefilm). ✓

Gives nomenclature; practical uses and operation of the lathe. AAF-Castle Films.

SPECIALIZED MACHINES (TURRET LATHES) (35 pictures, 31 frames). ✓

What the turret lathe is and what can be done with it; the automatic screw machine and its functions; relationship to lathe work. The Jam Handy Organization.

A MACHINE OF THE AGE (11 minutes) 16mm sound. ✓

Explains the wet-belt machining method of surfacing, grinding, and stock removal. Porter-Cable Machine Company.

HOW TO MACHINE ALUMINUM (32 minutes) 16mm 35mm sound Rent free. ✓

A fact-packed picture presenting an outline of the best practices employed in machining aluminum with either hand or machine tools. Motion Picture Department, Aluminum Company of America.

TORNADO IN A BOX (28 minutes) 16mm sound.

Concerns the development and operation of the gas turbine--"the power plant of the future." The principle of this new source of power is portrayed by pictures and animated drawings. Produced for Allis-Chalmers Manufacturing Company by The Jam Handy Organization.

TODAY AND TOMORROW (18 minutes) 16mm sound Rent \$2.50.

Presents view of the world today against the background of yesterday. Explains scientific and industrial background of today in a way to stimulate practical thinking about the world of tomorrow. Surveys the use of power from the ox-propelled wheel; the use of wind and water power to modern steam electric and internal combustion engines. Shows man's conquest of the air, and the contribution made by machines. DeVry Films and Laboratories.

LESSONS IN GRINDING - Series of four 16mm sound and color films. Produced especially for job-training programs. Norton Company.

1. Cutter Sharpening
2. The Cylindrical Grinder
3. The Surface Grinder
4. The Grinding Wheel and Its Care and Use.

FIRST PRINCIPLES IN GRINDING (40 minutes) 16mm sound Purchase or Free loan.

Shows the importance of the grinding process in the production of war material, the actual manufacturing of the abrasives silicon carbide and aluminum oxide, their final processing, and a general explanation of the types of materials most efficiently ground with them. Carborundum Co.

MATERIALS AND METALS

HYATT BEARINGS DIVISION (18 minutes) 16mm sound.

History of the roller bearing; high efficiency of the various types of roller bearings assembled at Hyatt and some of the methods used in producing them. General Motors Corporation.

MAKING OF ALLOY STEEL (45 minutes) 16mm sound Free.

Preparation and charging of open hearth furnace, billet preparation, rolling on hand mills; cold drawing; heat treatment; finishing operations, straightening, grinding, rough machining, pickling. Bethlehem Steel Corporation.

MINING OF SULPHUR IN THE GULF COAST REGION (18 minutes) 16mm sound 1939.

Processes used in deep-well mining of sulphur and economic values. Freeport Sulphur Company.

RECITAL OF FAITH (35 minutes) 16mm sound 1944.

Story of Reynolds Metals Company in the production of aluminum and magnesium. Modern Talking Picture Service.

THIS IS STEEL (28 minutes) 16mm sound Free.

Production of pig iron in the blast furnaces; refining of iron into steel; shaping of steel. Bethlehem Steel Company.

ALUMINUM (12 minutes) 16mm sound.

From ore through refining process to fabrication into sheets and then the building of airplanes. Office of War Information, University of Oklahoma.

ALUMINUM (15 minutes) 16mm sound 1941.

Mining, concentrating and processing aluminum. Aluminum oxide is prepared and reduced to metallic aluminum in electrolytic cells. Encyclopedia Britannica Films.

ALUMINUM: FABRICATING PROCESSES (19 minutes) 16mm sound 1943.

The fabrication of aluminum into assorted forms is shown. Laboratory tests, and the making of containers by hydraulic extrusion are illustrated. U. S. Bureau of Mines.

ALUMINUM: MINE TO METAL (30 minutes) 16mm sound 1943.

The mining and purifying of bauxite, mineral from which aluminum is extracted. Uses of aluminum in transportation, building and industry. U. S. Bureau of Mines.

UNFINISHED RAINBOWS (36 minutes) 16mm sound Color 1942.

The aluminum industry traced from Napoleon III's time to present. Hall's experiment of a cheaper way to process aluminum that has opened new fields of use. Modern Talking Picture Service, Inc.

CARE AND MAINTENANCE OF TAPERED ROLLER BEARINGS (45 minutes) 16mm silent.

Shows construction, operation and general maintenance principles of tapered bearings. Timken Roller Bearing Company.

MICRO INSTRUMENT BALL BEARINGS, THEIR HANDLING AND CARE (22 minutes) 16mm sound.

New Departure micro instrument ball bearings receive final inspection, assembly, and packing in completely sterile surroundings. Stresses the care to be given by users to insure the smooth running qualities of the bearings. General Motors.

QUALITY IN THE MAKING (23 minutes) 16mm sound.

The numerous processes of testing and manufacturing of the high-grade steel used in ball bearing production are shown. General Motors.

COPPER REFINING (15 minutes) 16mm silent 1938.

Shows the conversion of nodes into chemically pure copper by the electrolytic process. Ph Dodge in cooperation with U. S. Bureau by Mines.

COPPER SMELTING (15 minutes) 16mm silent 1938.

Shows the crushing roasting, smelting procedures to convert ore and concentrates into metallic copper; shows removal of impurities in converters and anode furnaces; shows casting of metal into anodes. Ph Dodge in cooperation with U. S. Bureau of Mines.

COPPER SMELTING AND REFINING (11 minutes) 16mm sound.

Explains the making of copper base. Rothacker, Douglas D.

MINING AND SMELTING COPPER (15 minutes) 16mm silent.

Shows the physical properties of copper, its mining and refining processes including concentration by smelting and electrolytes. University of Illinois, Visual Education Bureau.

SHEET COPPER (15 minutes) 16mm silent.

Manufacture and uses of sheet copper. American Museum of Natural History.

AIRCO PROCESS OF FLAME HARDENING (1 reel) 16mm silent Color.

Various flame hardening operations on gears, sprocket, lathe way beds. Air Reduction Sales Company.

FLAME HARDENING BY THE OXY-ACETYLENE PROCESS (30 minutes) 16mm silent. Animation illustrates the basic principles of oxyacetylene flame hardening. Linde Air Products Company.

FLAME PRIMING THE DRUM GATES OF GRAND COULEE DAM (15 minutes) 16mm silent.

Photograph of actual operations as they progressed. Linde Air Products Company.

HEAT TREATING HINTS (55 minutes) 16mm sound Color Second Edition. Shows methods and procedures. Lindberg Engineering Company.

HEAT TREATMENT (20 minutes) 16mm sound.

Shows the latest methods of heat treating aluminum alloys. Navy.

HEAT TREATMENT OF ALUMINUM - FILM I (19 minutes) 16mm sound \$27.10 OE344.

Explains purpose and phases of heat treatment. USOE-Castle Films.

HEAT TREATMENT OF STEEL: ELEMENTS OF HARDENING (15 minutes) 16mm sound \$22.58 OE170.

Shows how steel is quench-hardened; how the structures and hardness of steels with different carbon content change at progressive quench-hardening stages. USOE-Castle Films.

HEAT TREATMENT OF STEEL: ELEMENTS OF SURFACE HARDENING (14 minutes) 16mm sound \$21.95 OE172.

Shows how steel is pack carburized; how steel is gas carburized; how a thin, hard case is obtained by cyaniding; how nitriding is used to obtain a very hard case; how steel is flame hardened; how steel is induction hardened. USOE-Castle Films.

HEAT TREATMENT OF STEEL: ELEMENTS OF TEMPERING - NORMALIZING - ANNEALING (22 minutes) 16mm sound \$29.02 OE171.

Shows how steel is tempered. USOE-Castle Films.

RIGHT MATERIAL IN THE RIGHT PLACE (20 minutes) 16mm sound.

Explains the choice of materials for specific purposes; shows internal operation of various types of furnaces. International Harvester Co.

ALLOY STEEL (40 minutes) 16mm sound Free loan.

Shows the manufacture of alloy steel; smelting processes and fabrication of steel. Bethlehem Steel Company.

ALLOY STEELS - A STORY OF THEIR DEVELOPMENT (20 minutes) 16mm sound. Alloy steels from beginning to making of high speed tools. CL Moly in cooperation with U. S. Bureau of Mines.

BACKBONE OF PROGRESS (30 minutes) 16mm sound. (45 minutes) 16mm silent
Shows the application of structural steel to building, bridges, and other structures. American Institute of Steel Construction.

BESSEMER AND OPEN HEARTH STEEL (15 minutes) 16mm silent.
Brief, but concise, clear portrayal of the Bessemer process and the open hearth. Bray Pictures Corporation.

EMPIRES OF STEEL (45 minutes) 16mm silent.
Shows the prefabrication of steel structures in the erection of the Empire State Building. American Institute of Steel Construction.

ENDURO STAINLESS STEEL (40 minutes) 16mm sound Free loan.
Covers the manufacture of Enduro Stainless Steel from the mining of the ore in Rhodesia to the mirror-finished sheet. Republic Steel Corporation.

FURNACES OF INDUSTRY (10 minutes) 16mm sound \$50 Rent B & H.
Entire process of making steel. Distribution of materials and smaller areas in Britain. Bell & Howell Company.

HEAVY INDUSTRIES (10 minutes) 16mm sound.
Pig iron being transferred to furnaces and mixed with ore, then poured into molds for castings and ingots. Visual Library.

HOW STEEL IS MADE (40 minutes) 16mm sound.
Blast furnace, bessemer furnace and open hearth operations. Animated drawings of what takes place in the blast furnace and open hearth. Iron and steel foundry. Bethlehem Steel Company.

IRON AND STEEL (10 minutes) 16mm sound.
Shows the operation of mines, the transportation of ore, blast furnace and smelter, open hearth furnace, production of steel. DeVry Films and Laboratories.

IRON MINING AND MANUFACTURE (15 minutes) 16mm silent \$25 Rent \$1 1941.
Shows open pit mining near Marquette, Michigan. Bailey Film Service.

MAKING AND SHAPING OF STEEL (70 minutes) 16mm sound (90 minutes) 16mm silent 1940.
Reel 1: Raw materials. Reel 2: Making of steel. Reel 3: Flat rolled products. Reel 4: Bars and structural shapes. Reel 5: Rails, wheels, axles. Reel 6: Wire and wire products. Reel 7: Pipe and tube manufacture. U. S. Steel Corporation of Delaware.

MANUFACTURE OF LUKENS CLAD STEELS (20 minutes) 16mm silent 1942.
Shows the techniques involved in bonding together a thick backing plate of steel and a lighter layer of corrosive resistant metal. Lukens Steel Company.

MANUFACTURE OF PIG IRON (10 minutes) 16mm silent.
Animation shows the blast furnace in operation, the charging, the blowing in of air, elimination of impurities, the handling of slag and molten iron. Bray Pictures Corporation.

MANUFACTURE OF STRUCTURAL STEEL SHAPES AND RELATED PRODUCTS (40 minutes) 16mm sound.

Shows the operation of the blast furnace, open hearth, and other mill departments; shows rolling processes. Bethlehem Steel Company.

MANUFACTURE OF TOOL STEEL (30 minutes) 16mm silent Color.

Shows the addition of alloys and heat treatment in the processing of steel into tool steel. Columbia Tool Steel Company.

MEN MAKE STEEL (45 minutes) 16mm sound Color (80 minutes) 16mm sound B & W.

Gives the background of the steel industry. U. S. Steel in cooperation with U. S. Bureau of Mines.

NEW CONTINUOUS PROCESS OF MAKING IRON AND STEEL SHEET (30 minutes)

16mm silent.

Open hearth, continuous rolling, finishing processes are shown.

American Rolling Mills Company.

STAINLESS STEEL (29 minutes) 16mm sound.

Shows each step in production of stainless steel. Allegheny Ludlum Steel Corporation.

STEEL (25 minutes) 16mm sound Loan 1937.

Complete story of steel. American Institute of Steel Construction.

STEEL (20 minutes) 16mm sound.

Steel making with off-screen description of production processes.

American Institute of Steel Construction.

STEEL (10 minutes) 16mm sound \$27 Rent \$1.50 1938.

Shows the manufacture of steel from liquid pig iron to finished product. Hardened steel is cut like cheese by a metal 1000 times harder than that which it cuts. Gutlohn, Walter O.

STEEL 16mm sound Color.

Step by step routine in manufacture of fine steel tools.

Vulcan-Crucible Steel Company.

STEEL - MAN'S SERVANT (38 minutes) 16mm sound Color 1938 Loan.

Description of steel industry from the mining of ore to the finished product. U. S. Steel Corporation of Delaware.

STORY OF CARBON STEEL (30 minutes) 16mm sound 1945.

Shows manufacture of carbon steel. U. S. Bureau of Mines.

STORY OF STEEL (11 minutes) 16mm sound Rent \$1.50.

Materials, ores, oxides, magnite, chemite, and siderate. Iron mining. Location of steel mills with reference to raw materials and transportation. Bell & Howell Company.

STREAMLINED STEEL (40 minutes) 16mm sound.

Shows manufacture of hot and cold rolled sheets and strips in modern steel making. Bethlehem Steel Company.

THERE'S A JOB TO BE DONE (30 minutes) 16mm sound.
Shows the manufacture of alloy steels. Allegheny Ludlum Steel Corporation.

USS COR-TEN (20 minutes) 16mm sound.
Tells the story of a low alloy, high-tensile steel, its use in fields of transportation and allied industries; shows tests and emphasizes weight saving in design. U. S. Steel Corporation of Delaware.

WORLD'S LARGEST PLATE MILL, THE (25 minutes) 16mm silent 1940.
Pictures of the making and rolling of steel from the ore in the open hearth furnace to the plates finished and ready for fabrication. Lukens Steel Company.

LEAD (15 minutes) 16mm silent 1930 Write for nearest distributor.
Shows elementary processes in mining of ore and smelting; how metal is used in industry and the Dutch Boy method of making white lead. Encyclopedia Britannica Films.

LEAD MILLING, SMELTING AND REFINING (35 minutes) 16mm sound Loan 1940.
Shows processes for converting the mined lead ore into finished products. St. Joseph in cooperation with U. S. Bureau of Mines.

LEAD MINING IN SOUTHEAST MISSOURI (33 minutes) 16mm sound Loan 1940.
Diagrammatic drawings show geological formations in Southeast Missouri; showing mining of lead. U. S. Bureau of Mines.

MAGNESIUM - METAL FROM THE SEA (23 minutes) 16mm sound 1944.
Animated drawings and straight photography show the production of magnesium from sea water and from the salt mines under the earth's surface. Dow in cooperation with U. S. Bureau of Mines.

MAGNESIUM - THE MIRACLE METAL (40 minutes) 16mm sound 1945.
Story of magnesium from sea to finished casting is told including molding, machining and other processes. Atlas Educational Film Company.

STORY OF MAGNESIUM, THE (40 minutes) 16mm sound.
Shows mass productions of cores and molds; the pouring of castings; inspections, machining, heat-treating, ageing, and laboratory tests. Hills-McCanna Company.

MICA INDUSTRY 16mm sound.
Mining and preparation of mica. Mario Manufacturing Company.

MEN, METALS AND MACHINES (35 minutes) 16mm sound Loan 1942.
Shows the world's largest nickel rolling mill in operation. Rothacker, Douglas D.

NICKEL AND NICKEL ALLOYS (32 minutes) 16mm sound 1942. Loan.
Shows the production of nickel and nickel alloy sheets from the arrival of copper-nickel matte at the plant, through the processes necessary to turn out the finished sheets. International Nickel in cooperation with U. S. Bureau of Mines.

NICKEL MILLING AND SMELTING (17 minutes) 16mm sound Loan 1940.
Shows smelter where ore is roasted; ore and coke loaded into blast furnaces; slagging converters; pouring matte; cooling; breaking up matte for refining and rolling. International Nickel in cooperation with U. S. Bureau of Mines.

NICKEL MINING (16 minutes) 16mm sound Loan.
Shows mining processes from men going to work and all their varied tasks in mining nickel. International Nickel in cooperation with U. S. Bureau of Mines.

NICKEL REFINING (10 minutes) 16mm sound 1940.
Shows refinery producing electrolytic nickel, black nickel, oxide, and nickel shot, illustrating processes used. International Nickel in cooperation with U. S. Bureau of Mines.

STORY OF MONEL METAL (30 minutes) 16mm silent (10 minutes) 16mm sound
Shows manufacture of this nickel alloy including fabricating processes. International Nickel in cooperation with Douglas.

ARTERIES OF INDUSTRY (5 reels, 15 minutes each) 16mm silent.
Five reels which may be used in combination: 1. Mining of ore-blast furnace operation. 2. Open hearth process of making steel. 3. Butt-weld process of making pipe. 4. Lap-weld process of making pipes and tubes. 5. Seamless process of making pipe.

MAKING OF COLD DRAWN SEAMLESS STEEL TUBES, THE (40 minutes) 16mm sound.
Shows making of seamless steel tubes from billets to finished tubing. Florez, Inc.

OX-WELD INDUSTRIAL PIPING (12 minutes) 16mm silent.
Shows pipe used in industry. Linde Air Products Company.

WALLS WITHOUT WELD PIPES (60 minutes) 16mm silent.
1. Mining of ore 2. Blooming mill and rolling mill operations 3. Manufacture of hot finished pipe and tubes 4. Cold drawing seamless pipe and tubes. National Tube Company.

HARD FACING (30 minutes) 16mm silent.
Shows application of Haynes Stellite, Hascrome, Haystellite alloys to metal parts. Linde Air Products Company.

HAYNES STELLITING THE PLOWSHARE (15 minutes) 16mm silent.
The operations involved in preparing plowshares for hard facing with Haynes Stellite alloy. Linde Air Products Company.

STEEL PLUS (40 minutes) 16mm silent.
The making of tin plate and its applications in canning, toy making and household ware. Bethlehem Steel Company.

TIN (15 minutes) 16mm silent 1930.
Animation and straight photography show processes of making tin plate from mining of tin in the Federated Malay States to finished product in factories in the United States. Encyclopedia Britannica Films.

FABRICATION OF COPPER (45 minutes) 16mm silent Free loan 1939.
Shows manufacture of copper wire, insulated cables and other uses of copper. Ph Dodge in cooperation with U. S. Bureau of Mines.

MANUFACTURE OF WIRE PRODUCTS (15 minutes) 16mm silent.
Shows the processes involved in making wire from raw materials to all sorts of finished wire products. University of Illinois.

MODERN STEEL AND WIRE MILLS (10 minutes) 16mm sound (15 minutes) 16mm silent.
Shows how steel is made; drawn and woven into fencing; nail making; and barbed wire making. Venard Organization.

SINEWS OF STEEL (40 minutes) 16mm sound.
Deals with the manufacture and use of wire rope from raw material to finished product. Bethlehem Steel Corporation.

WIRE (40 minutes) 16mm sound.
Shows the manufacture of rod and wire; zinc coating wire by galvanizing and the Bethanizing processes; the making of Bethanized fence, barbed wire, nails and other wire products. Bethlehem Steel Corporation.

MOUNTAINS OF MARBLE (22 minutes) 16mm sound.
Depicts the marble industry in its entirety from the quarrying operation, through the various phases of fabrication to the distribution of the finished product. Vermont Marble Company.

ALUMINUM (Slidefilm) \$2. Society for Visual Education.

BEARINGS (54 pictures, 55 frames) Silent 1940.
Explains the fundamental differences in the various types of ball and roller antifriction bearings. The Jam Handy Organization.

COPPER AND ITS USES (Slidefilm) \$2. Society for Visual Education.

IRON AND STEEL (Slidefilm) \$2. Society for Visual Education.

IRON INDUSTRY IN PENNSYLVANIA (Slidefilm) \$2. University Museum, Society for Visual Education.

OCCUPATIONS IN THE STEEL INDUSTRY (Slidefilm) \$2.25. Vocational Guidance, Society for Visual Education.

STEEL (4 reels) 16mm sound.
General information concerning steel. Vocational Guidance Films, Inc.

STEEL (Slides).
Institute lists slides under general headings. American Institute of Steel Construction.

WHAT IRON AND STEEL MEAN TO US (Slidefilm) \$2. Long, Society for Visual Education.

LEAD \$2. Society for Visual Education.

PROTECTION OF METALS - PART I (58 pictures, 53 frames).

General protective methods to be followed in the protection of various types of metals. The Jam Handy Organization.

PROTECTION OF METALS - PART II (33 pictures, 30 frames).

Finishing materials; preparing metal surfaces for finishing; metallizing surfaces. The Jam Handy Organization.

GOLD AND SILVER (Slidefilm) \$2. Society for Visual Education.

MINING AND METALLURGICAL ENGINEERING AS A CAREER (Slidefilm) \$2. Society for Visual Education.

PROPERTIES OF METAL - PART II (30 pictures, 39 frames).

Uses of metal in airplane. Working aluminum. Classification of metal according to chemical composition. The Jam Handy Organization.

UNFINISHED RAINBOWS (36 minutes) 16mm 35mm sound.

Story covers biography of Aluminum; its early history, how it once was considered a precious metal. In 1886, Charles Martin Hall, working with crude equipment, discovered the first low-cost method of obtaining metallic aluminum in practical quantities, How Hall and associates built one of the world's largest industries. Aluminum Company of America.

CEMENT QUARRY (1 reel) 16mm silent Rent or Purchase.

How the chief component of concrete is produced. Mogull's Camera and Film Exchange, Inc.

MODERN MINING (1 reel) 16mm silent Rent or Purchase.

Technique, machinery, shoring and conveying. Mogull's Camera and Film Exchange, Inc.

STORY OF ASBESTOS (2 reels) 16mm silent Rent or Purchase.

Mogull's Camera and Film Exchange, Inc.

SULPHUR (2 reels) 16mm silent Rent or Purchase.

How it is taken from the earth, its purification, transportation and use. Mogull's Camera and Film Exchange, Inc.

GOLD (1 reel) 16mm sound Rent \$1.50.

An interesting comprehensive treatment of modern gold mining in the West today. We also see the crude and primitive methods of 1849. International Theatrical and Television Corporation.

A SHORT COURSE IN PAPER MAKING (3 reels) 16mm sound 35 minutes.

P. H. Glatfelter Company.

MECHANICAL DRAWING AND DRAFTING

MOTION PICTURES ON BLUEPRINT READING 16mm silent (Available in slide-films also).

Shows step by step how to read blueprints and visualizes what blueprint symbols means in terms of the finished product. The Jam Handy Organization.

ARCHITECTS OF ENGLAND (1 reel) 16mm sound Rent \$1.50.

First we are shown scenes at Stoneheugh, then cathedrals and churches from the stone. This film shows the development of architecture from the Norman with its arches, towers, and columns, with examples of Tudor, Georgian, and Gothic. International Theatrical and Television Corporation.

GEOMETRY IN ACTION (1 reel) 16mm sound Rent \$1.50.

This film clearly indicates the application of the laws of geometry to everyday living; how motions, advancement and basic nature in life is closely allied to this branch of mathematics. International Theatrical and Television Corporation.

BROADSTROKE DRAWING (10 minutes) 16mm sound Rent \$1.50.

Manipulation of broad-edge crayon paper texture, shading and design are cleverly demonstrated by an eminent artist. Brandon Films.

SHOP DRAWINGS (2 reels) 16mm sound Rent \$2.90.

Stresses the proper method of reading blueprints, by the check-read method. Penn State College.

BAILEY BRIDGE (8 minutes) 16mm sound \$9 Rent \$.50 1945.

The construction and use of a prefabricated bridge made from interchangeable parts. British Information Service.

BRIDGING A CENTURY (45 minutes) 16mm sound Free.

Spinning the cables for the Golden Gate Bridge; wire rope making. Roebling's Sons.

BRIDGING MARBLE CANYON (10 minutes) 16mm sound Free.

How a steel arch bridge was constructed across Marble Canyon at a point miles from the nearest railroad. American Institute of Steel Construction.

CONGRUENT FIGURES (12 minutes) 16mm sound \$40 Rent \$2 1945.

Geometric principles of "equal sides and equal angles" methods for finding and proving that angles and sides are equal. Knowledge Builders Classroom Films.

DRAFTSMAN, THE (11 minutes) 16mm sound \$50 1942.

The graphic language of lines and symbols of the draftsman; the various types of drafting used; from free hand sketched to detailed finished drawings, in the preparation of plans for a building; the various industries requiring draftsmen. Vocational Guidance Films, Inc.

INTRODUCTION TO MECHANICAL DRAWING (20 minutes) 16mm silent \$30 1940.

Preparation of materials and methods of procedure for making drawings of articles requiring one, two and three views. Cocking, Floyd W.

LINES AND ANGLES (12 minutes) 16mm sound \$40 Rent \$2 1945.

Geometry of straight, right, acute, obtuse, and reflex angles. Knowledge Builders Classroom Films.

LOCUS (12 minutes) 16mm sound \$40 Rent \$2 1945. Visualization and explanation. Knowledge Builders Classroom Films.

PROGRESS THROUGH ENGINEERING (12 minutes) 16mm sound.

Relationship of modern civilization to the engineering profession; engineering in the fields of transportation, sound transmission, sanitation, refrigeration, home comforts, electricity, and even luxuries. General Motors.

AUXILIARY VIEWS (15 minutes) 16mm silent.

Procedures for drawing straight and curved line views and for determining necessity of auxiliary views is shown. Purdue University.

BEHIND THE SHOP DRAWING (20 minutes) 16mm sound.

After a series of pictures to show the importance of shop drawings, the narrator discusses perspective drawing with moving pictures showing the points made. The method of making the drawing is shown step by step, pictured by animated lines, arrows and transparent paper so that the reason for each line can be understood. Drawing of more complicated objects are explained as drawings are shown. A section is devoted to blueprints. The Jam Handy Organization.

CAPITAL LETTERS (20 minutes) 16mm sound.

Shows the construction of single stroke, inclined commercial gothic capital letters, ampersand and numerals on ruled grids. Purdue University.

DERIVATION OF INVOLUTE PROFILES (15 minutes) 16mm silent.

A step by step derivation of involute tooth profiles made from a pair of pulleys and a crossed belt. Shows how points in the belt, in moving from a point of tangency on one pulley to a point of tangency on the other, generate the conjugate involutes on both pulleys. New York University, College of Engineering.

DEVELOPMENT OF SURFACES (15 minutes) 16mm silent.

Models and drawings show the construction of patterns of surfaces. Describes methods for right and oblique prisms, right cylinders, pyramids and cones, oblique cones. Purdue University.

DRAFTING TIPS (28 minutes) 16mm sound \$65 Rent \$2 plus transportation. 1943.

Procedures in developing a drawing; use and care of drafting equipment are covered. Penn State College, University of Oklahoma.

FREE HAND DRAWING (15 minutes) 16mm silent.

Illustrates lines; short and long horizontal, vertical and inclined lines, large and small circles and ellipse. Proper strokes for sketching various lines are shown. Demonstrates sharpening of the drawing pencil. Purdue University.

INDUSTRIAL DESIGN (10 minutes) 16mm silent Color Sale or loan.

Shows step by step procedure in designing a radio cabinet, from the first "thumbnail" sketch to the finished drawing, featuring airbrush technique. Frank Knaus.

INK WORK AND TRACING (30 minutes) 16mm silent.

Demonstrates the steps involved in making ink tracing on cloth. Shows the preparation and manipulation of tools and materials, the order of

inking, the use of the proper widths of lines for different purposes. Demonstrates correction of mistakes. Purdue University.

INSTRUMENTS AND MATERIALS (18 minutes) 16mm silent Color.
Technical drawing with properly arranged drawing table and use of drawing instruments. Illinois Technology.

INTERSECTION OF SURFACES (15 minutes) 16mm silent.
Demonstrates procedures for finding intersections of right, oblique and curved surfaces. Purdue University, General Engineering Department.

LOFTING AND LAYOUT (30 minutes) 16mm sound.
Shows how the designers' small original drawings are made into full size layout on metal sheets. Animated drawings show the development of the plane from pencil sketch to production line. Navy-Castle Films.

LOWER CASE LETTERS (13 minutes) 16mm silent.
Demonstrates construction of each lower case letter. After each demonstration, time is allowed student to make letter. Purdue University.

MAKING A MASTER CONTOUR TEMPLATE (18 minutes) 16mm sound \$25.22
OE125.
Shows what a master contour template is and its purpose; how to transfer a line from a lines-board to a piece of sheet metal, using ducks, spline and a roller line pickup to make the transfer; what bean lines are and how to locate them; what bevels are; how to measure and record the bevel angles; and the importance of frequent check for accuracy. USOE-Castle Films.

MOCK-UP AND TOOLING (30 minutes) 16mm sound.
Demonstrates some typical methods used for rapid and economical production of templates, dies, jigs, fixtures, and other tools. Navy-Castle Films.

MULTIVIEW DRAWING (30 minutes) 16mm silent.
By use of models, demonstrates representation of object by means of orthographic views. Shows use of scale for making measurements and the use of the T-square and triangles for constructing the views. Demonstrates technique of transferring a measurement from one view to another or of constructing a third view by projecting from the other two views. Purdue University, General Engineering Department.

ORTHOGRAPHIC PROJECTION (30 minutes) 16mm silent.
A demonstration, with models, of the proper methods for representing objects on paper with the three orthographic views. Shows how to transfer dimensions and use the instruments. Purdue University, General Engineering Department.

PRACTICAL GEOMETRY (10 minutes) 16mm sound \$40 Rent \$2.
Visualizes the mathematic application of basic geometry. Illustrates the relationship of the perpendicular with the ordinary plumb bob and square. Knowledge Builders Classroom Films.

PRINCIPAL DIMENSIONS, REFERENCE SURFACES AND TOLERANCES (12 minutes)
16mm sound \$17.97 OE53.

Shows the relationship between the blueprint and a rough and finished casting; how to compare casting dimensions with blueprint specifications; how a cross-section view is derived from a full view; how to use a blueprint as an aid in selecting reference surfaces from which to take other dimensions; how to interpret tolerances; how to use a blueprint in checking the accuracy of finished work. USOE-Castle Films.

READING A DRAWING OF A VALVE BONNET (20 minutes) 16mm sound \$27.09
OE55.

Shows how to interpret conventional symbols and tolerance specifications, and the conventional views and cross-sectional views shown on a blueprint of a fairly elaborate workpiece; how to use the blueprint as a guide in planning machine operations; how to obtain dimensions not given directly on the blueprint and apply them in laying out and performing work. USOE-Castle Films.

READING A THREE-VIEW DRAWING (10 minutes) 16mm sound \$16.42 OE52.
The use of blueprints to visualize objects, the interpretation of a blueprint, and the making of a tool block according to a blueprint are explained. USOE-Castle Films.

SECTIONAL VIEWS (15 minutes) 16mm silent.
By means of models demonstrates principles of sectioning, transparent cutting planes; shows full, half, and off-set sectional drawings. Purdue University, General Engineering Department.

SECTIONAL VIEWS AND PROJECTIONS, FINISH MARKS. (15 minutes) 16mm sound \$22.11 OE54.
Shows the different types of lines - dimensions, center, cross-section, and object; the projection of sectional view; the locations and uses of finish marks; the meanings of standard cross-section lines denoting types of materials. USOE-Castle Films.

SHEET METAL WORK (20 minutes) 16mm silent 1941.
Reading of blueprints, using drafting instruments, including the procedures and techniques, shown in close-up. Three basic projects illustrated; drag truss fitting, flange reinforcement, I-beam spar. Gutlohn, Walter O.

SCREW THREADS (23 minutes) 16mm silent.
Defines by means of models and drawing the important terms associated with screw threads. Complete step by step construction of national thread and square threads are shown. The meaning of each line of the drawing is explained by reference to a model. Purdue University.

STRUCTURAL DRAWING (20 minutes) 16mm silent.
Shows preparation and use of chisel-pointed pencil in making pencil tracings, order of performing the various steps so as to secure accurate and fast results in the making of a structural drawing. Layout of a roof truss and detailing of a gusset plate are shown. Purdue University, General Engineering Department.

TEMPLATE REPRODUCTION (20 minutes) 16mm sound.
Shows modern methods of reproducing drawings on metal, including photographic, X-ray and electro-chemical processes. Navy-Castle Films.

USES OF T-SQUARE AND TRIANGLES (11 minutes) 16mm silent.

Shows placing of drawings on drawing board; handling T-square, triangles and pencil; drawing, horizontal, vertical and inclined lines with T-square and triangle. Drawing of perpendicular and parallel lines using triangles, and the construction of angles. Purdue University.

VISUALIZING AN OBJECT (9 minutes) 16mm sound \$15.78 OE51.

Shows the development of a blueprint, dimensioning by different views, information on blueprints. USOE-Castle Films.

DRAWING AN ANCHOR PLATE (25 pictures, 20 frames).

List and pictures of tools needed; set-up on the drawing board; layout of center-line and indication of holes and complete horizontal dimensions; layout of verticals; layout holes with arcs and circles; drawing horizontal object lines; drawing vertical object lines; drawing in diagonal; darkening object lines; and extension and dimension lines light; drawing dimension arrowheads and lettering the plate. The Jam Handy Organization.

DRAFTING TRAINING (56 frames).

Elementary picture showing the use of drafting tools, including pencil, T-square, triangles, scales, dividers, compass, french curves, inking, and special instruments. Consolidated Vultee Corporation.

ENGINEER'S RELATION TO PRODUCTION (146 frames) Sound.

Correlates design problems of drafting with tasks of operators in fabrication departments. Broad coverage of shop practice in both sheet metal and machine shop is given, illustrating uses and limitations of equipment and how to meet engineering problems thus incurred. Also covers problems of finishes and processes. Tradefilms, Inc.

HOW TO DEVELOP AN INTERSECTION: PART I SN1036a.

Shows how to make a true layout for a flat pattern of a 2" cylinder, 8" in length, one end elliptical and both ends flanged. Navy-Castle Films.

HOW TO DEVELOP AN INTERSECTION: PART II SN1036b.

Demonstrates the steps in laying out, forming and assembling a filler neck and collar to the end of a metal tank with the aid of machines and hand tools. Navy-Castle Films.

MECHANICAL DRAWING \$5.

A complete course of study in mechanical drawing for beginners on any level. Society for Visual Education.

MECHANICAL ENGINEERING AS A CAREER \$2. Society for Visual Education.

METAL DRAWINGS 16mm sound.

Shows the steps in the detail assembly template process, and many engineering and tooling applications are suggested. Lockheed Aircraft Corporation.

SCALES AND MODELS (80 pictures, 83 frames).

The story behind scales and models; bringing "too big" and "too small" into easy focus; how to plan, use and understand these valuable aids. The Jam Handy Organization.

SIMPLE CALCULATIONS FOR FLAT LAYOUTS SN1035 (Film strip).

Describes several procedures to follow in calculating and laying out on paper and constructing metal parts from such designs as flanges, bends, beads, seams, and joggles. Both straight photography and drawings are used. Navy-Castle Films.

"T" SQUARES AND TRIANGLES - PART I (31 pictures, 32 frames).

Fundamental uses of a "T" square and the 45 degree and 30-60 degree triangles; tools and equipment needed and correct care and usage; setting up for drawing; reproducing margins and title block of standard drawing form; correct use of hands, pencil, triangle, and "T" square in drawing margins; layout of title block. The Jam Handy Organization.

"T" SQUARE AND TRIANGLES - PART II (60 pictures, 53 frames).

Manipulation of triangle to obtain angle lines; constructing of figure 1 with pencil, "T" square, 45 degree triangle and rule; layout of vertical and horizontal lines; layout of angle lines, construction of figure 2, using different triangle; duplication of figure 1; drawing figure 4, a hexagon; drawing figure 5; drawing figure 6, another hexagon. The Jam Handy Organization.

FIRST COURSE IN MECHANICAL DRAWING (86 frame film strip) 35mm. \$5. Designed especially for use in beginning mechanical drawing classes. Includes slides on pencil sharpening and paper arrangement, accurate measuring, analysis of the problem, lettering, locating, and dimensioning holes, and 20 problems of varying degrees of difficulty. Vocational Guidance Films, Inc.

MECHANICAL DRAWING AND DRAFTING - Title of new kit-set containing 1,112 individual pictures on 18 subjects in mechanical drawing projects, basic and advanced geometric constructions, and the uses to which drawings are put in the shop. The Jam Handy Organization.

PAINTS, VARNISHES, AND FINISHING MATERIALS

FROM PIGS TO PAINT (2 reels) 16mm silent 35mm silent.

Story of Dutch Boy White Lead. National Council of Y. M. C. A. Motion Picture Bureau.

THE ROMANCE OF PAINT AND VARNISH (2 reels) 16mm silent.

Shows the assembling of raw materials that go into paints, and the manufacture of protecting coatings. National Paint, Varnish and Lacquer Association.

THE MANUFACTURE OF BEAVER STEEL WOOL (1 reel) 16mm 35mm silent or sound.

Growth of the industry; processing machinery; packing and shipping. James H. Rhodes Company.

MANUFACTURE OF ABRASIVES (3 reels) 16mm 35mm silent. Made in cooperation with the Carborundum Company. U. S. Bureau of Mines, Experiment Station.

LEAD (1 reel) 16mm silent.

Way in which ore is mined and smelted; multiple uses of metal in industry;

processes of making white lead. Eastman Kodak Company, Teaching Films Division.

THE WONDER WORLD OF CHEMISTRY (1 reel) 16mm 35mm sound.
The picture features such recent developments in nylon, synthetic rubber, fibers, etc. E. I. DuPont DeNemours and Company.

THE JEWELS OF INDUSTRY (2 reels) 16mm silent.
Manufacture of modern abrasives and their uses in industrial plants.
Douglas D. Rothacker.

PAINTING AND DECORATING (400 feet) 16mm silent.
The film explains the many kinds of jobs in this vocation - showing both exterior and interior painting - tells of the problems involved in painting surfaces exposed to the weather. Shows the use of the tools of the trade, including the spray gun. Vocational Guidance Films, Inc.

PAINTING SHIPS AND BOATS: PREPARING THE SURFACE FOR PAINT: PREPARING PAINT SN76a 16mm sound.
Shows the preparation of a surface to be painted, the necessary tools, and the safety precautions to be followed, both inside and outside painting. Navy-Castle Films.

PAINTING SHIPS AND BOATS: APPLYING PAINT: SAFETY PRECAUTIONS SN76b 16mm sound.
Points out the different brushes and tools used in painting and gives instructions as to the proper way of applying paint. Some results of faulty applications are illustrated. Navy-Castle Films.

AMERICAN WALNUT (22 minutes) 16mm sound Color.
The manufacture of solid and veneer construction; the making of plywood; and how figured paneled surfaces are produced. American Walnut Manufacturing Association.

FURNITURE CRAFTSMAN (11 minutes) 16mm sound \$50.
Story of custom built furniture. Encyclopedia Britannica Films.

HOW TO FINISH PLYWOOD (22 minutes) 16mm sound Color 1942.
Finishing of plywood; painting, staining; enameling, to create proper exterior and interior finishes. Douglas Fir Plywood Association.

MASTERPIECES OF MAHOGANY (30 minutes) 16mm silent Loan.
From the beginning as a piece of rough solid mahogany lumber through the design and scaled shop drawings, a table is produced as the camera follows the step by step process. Mahogany Association, Inc.

MIRACLE IN WOOD (35 minutes) 16mm sound Color.
The making of plywood; the giant peeler logs; blocks peeled into veneer and veneer into plywood. Douglas Fir Plywood Association.

PLYWOOD FLEET (34 minutes) 16mm sound Color 1942.
Building small boats; sail boats; power boats; speed boats; and racing shells. Douglas Fir Plywood Association.

PLYWOOD, THE MIRACLE WOOD (35 minutes) 16mm sound 1942.
Uses of the material in industry with story of its manufacture. Douglas Fir Plywood Association.

PREFABRICATION WITH PLYWOOD (35 minutes) 16mm sound Color 1942.
Shows factory prefabrication with a survey of the prefabrication industry. Douglas Fir Plywood Association.

REDWOOD SAGE (14 minutes) 16mm silent.
Redwood lumber industry of northern California, the cutting, loading, transportation, mill sawing and finishing operations. Haselton, Guy D.

ROMANCE OF MAHOGANY (45 minutes) 16mm silent 1937.
The making of mahogany lumber and veneers from the felling of trees in the tropical jungles to the factory. Mahogany Association, Inc.

TREES AND HOMES (33 minutes) 16mm sound Color.
The Weyerhaeuser plant in Washington shown in logging and mill operations. Weyerhaeuser Sales Company.

FROM BRISTLES TO BRUSHES (30 minutes) 16mm sound.
Sources of bristles, hair, wire, fibre and cotton are covered; as well as their careful processing after arrival and their utilization in most intricate operations. Fuller-Castle Films.

CARE AND CLEANING OF SPRAY EQUIPMENT SM194 (Slidefilm).
Describes parts, nomenclature and maintenance of dope and paint spray equipments. Navy-Castle Films.

SPRAY PAINTING EQUIPMENT (73 pictures, 61 frames).
Typical outfit; how it works; general construction and functions of all parts. The Jam Handy Organization.

PLASTICS

PLASTICS (16 minutes) 16mm sound \$50 Rent \$5 1944.
Story of plastics. Young America Film Division.

CARE AND CLEANING OF PLEXIGLAS (20 minutes) 16mm sound.
Presents inspection, storage and use of masking paper; cutting; repairing, cementing ribs, cleaning and buffing to eliminate scratches. Rohm and Haas.

CAREERS FOR CELLULOSE (30 minutes) 16mm sound Color.
Forming of cotton linters into cellulose derivatives. From the chemical bases are made cellulose plastics, lacquers, film, rayons. Hercules Powder Company.

LUCITE CARVING (11 minutes) 16mm silent \$21 Rent \$1.50 1941.
The use of machinery in the carving of lucite, as well as hand carving. Gutlohn, Walter C.

MAGIC OF MODERN PLASTICS (40 minutes) 16mm sound Color.

Manufacture of cellulose nitrate and vinyl acetal resin in all stages.
Breskin Publishing Company.

NEW WORLD THROUGH CHEMISTRY, A (20 minutes) 16mm sound Color Free
19411

Shows nylon textile fiber; neoprene synthetic rubber; cellulose sponges;
Zelan finish; synthetic dyestuffs, and lucite plastics. E. I. Dupont.

PLASTICS 1 - ORIGIN AND SYNTHESIS OF PLASTICS MATERIALS (16 minutes)
16mm sound \$23.87 OE466.

Shows structural resemblance of plastics compounds to woods in a tree;
the synthesis of plastics from natural substances; the difference be-
tween thermosetting and thermoplastic materials; the compounding of
plastics to provide desired properties in products; the forms in which
plastics are produced. USOE-Castle Films.

PLASTICS 2 - METHODS OF PROCESSING PLASTICS MATERIALS (21 minutes)
16mm sound \$32.73 OE467.

Shows the fundamentals of the compression, transfer, extrusion, and in-
jection molding methods; finishing molded parts; fundamentals of lami-
nation; machining laminated and other plastic products. USOE-Castle
Films.

PLASTICS 3 - COMPRESSION MOLDING PART I: PREPARING THE CHARGE AND
LOADING THE MOLD (11 minutes) 16mm sound \$17.71 OE468.

Shows how to set up the press; how to weigh the charge; how to preheat
the charge; how to clean and lubricate the mold; how to load the mold.
USOE-Castle Films.

PLASTICS 4 - COMPRESSION MOLDING PART II: MOLDING A SIMPLE PART
(10 minutes) 16mm sound \$17.07 OE469.

Shows how to close the mold; how to breathe the mold; how and when to
open the mold; how to prevent pieces from warping; how to coordinate
steps of molding cycle. USOE-Castle Films.

PLASTICS 5 - MOLDING A PART WITH INSERTS (10 minutes) 16mm sound
\$17.07 OE470.

Shows how transfer molding differs from compression molding; how to de-
termine if a part should be molded by the transfer method; how to mold
a part by the transfer method; how to coordinate the steps of the mold-
ing cycles. USOE-Castle Films.

PLASTICS 6 - SEMI-AUTOMATIC AND HAND MOLDING OF INTRICATE PARTS
(16 minutes) 16mm sound \$23.87 OE471.

Shows how to mold a part with undercuts; how to place wedges and to close
the mold; how to mold a part with complicated shape; how to assemble a
hand mold; how to disassembly a hand mold. USOE-Castle Films.

PLASTICS 7 - INJECTION MOLDING PART I: SETTING UP THE PRESS AND MOLDING
A PART (16 minutes) 16mm sound \$23.87 OE472.

Shows what happens in the plunger cylinder, heating cylinder, and mold
during injection molding; how to set up an injection molding press for
a specified job; how to avoid dampness and contamination of molding ma-
terial; how to maintain the operating cycle and prevent damage to the
mold and press. USOE-Castle Films.

PLASTICS 8 - INJECTION MOLDING PART II: CLEANING AND SERVICING THE PRESS (11 minutes) 16mm sound \$18.36 OE473.

Shows how to disassemble the heating cylinder; how to clean the cylinder; hopper, and feeder mechanism; how to give the entire press a routine cleaning; how to prepare scrap material for re-use. USOE-Castle Films.

PLASTICS 9 - FINISHING MOLDED PARTS (14 minutes) 16mm sound \$21.95 OE474.

Shows trimming, the date, drum-sanding gate and cable hole; retapping metal inserts; removing flash from contours by hand-sanding and filing; filing and scraping cavities; buffing and polishing the surfaces; finishing by tumbling methods. USOE-Castle Films.

PLASTICS 10 - MACHINING LAMINATED PLASTICS (19 minutes) 16mm sound \$27.10 OE475.

Shows how to cut tube stock to length; how to machine outside diameters to specifications by turning on a lathe; how to machine inside diameters to specifications by boring on a lathe; how to machine pockets on a milling machine. USOE-Castle Films.

PRODUCT DESIGN AND MOLDING TECHNIQUE FOR THERMOSETTING PLASTICS

Loan 16mm sound.

Technique and practical application of thermosetting molding plastics. Bakelite Corporation.

PROVING GROUND (25 minutes) 16mm sound 1944.

A celanese plastic, Lumarith transparent packing material -- its use in war and its widening usage in postwar packaging. Celanese Plastics Corporation.

SELECTING THE RIGHT THERMOSETTING MOLDING MATERIALS 16mm sound Loan.

Technique and practical application of thermosetting molding plastics. Bakelite Corporation.

SHAPE OF THINGS TO COME (33 minutes) 16mm sound Color Loan 1944.

A trip through company's plastic material factory showing operation of presses, compression transfer and injection, with step by step illustration of mold construction. Boonton Molding Company.

STORY OF BAKELITE (30 minutes) 16mm silent Rent or Loan.

Animated diagrams of chemical operations involved in manufacture of Bakelite materials. Bakelite Corporation.

STORY OF FORMICA (46 minutes) 16mm sound Color 1944.

Uses made of laminated plastics and their role in the future. Formica Insulation Company.

THIS PLASTIC AGE (30 minutes) 16mm sound Color 1943.

Manufacture of plastics, molding, extruding into forms. Breskin Publishing Company.

ORIGIN AND SYNTHESIS OF PLASTIC MATERIALS (16 minutes) 16mm sound.

Describes processes by which man has produced and developed plastic materials. Two basic types of plastics are described. Techniques of mold-

ing for permanence and temporary use are shown. University of Wisconsin, Extension Department.

THE FOURTH KINGDOM (3 reels) 16mm sound Rent \$1.80.
Shows the manufacture and uses of plastics. Penn State College, Extension Department.

THE MAGIC OF MODERN PLASTICS (1 reel) 16mm silent. Monsanto Chemical Company.

CATALIN ON PARADE (1 reel) 16mm silent. Catalin Corporation.

CARVING IN LUCITE (13 minutes) 16mm silent Rent \$1.50.
This film demonstrates the technique of carving a transparent synthetic plastic with electrically driven tools. Brandon Films.

THE MAGIC OF MODERN PLASTICS (40 minutes) 16mm sound Color.
This film tells the story of plastics from the invention of cellulose nitrate by John Wesley Hyatt in 1869 to the most modern application of all the recently discovered materials. Breskin Publishing Corporation.

THIS PLASTIC AGE (30 minutes) 16mm sound.
Shows scenes in a modern laboratory; describes and shows how plastics are manufactured and molded. Uses of plastics in war work is also stressed. Narrated in non-technical language. Breskin Publishing Corp.

SAFETY

WOODWORKING MACHINERY - 49 (25 frames) Filmstrips, silent. National Safety Council, Inc.

SHOPPING FOR SAFETY (2 parts) (30 minutes) Sound slidefilms.
Deals with proper supervision, maintenance, and techniques in the school shop. Also contains first-aid suggestions for the shop teacher. Part 1, "Shopping for Safety", deals with the boy's introduction to safe practices in the vocational shop. Part 2, "Skills vs. Trouble", deals more specifically with the development of skills as a means of preventing accidents. Center for Safety Education, New York University.

SAFE CURRENTS (30 minutes) (2 parts) Sound slidefilms.
Shows the safe way of using electricity in the home, including approved practices for avoiding fires that result from the misuse of electrical appliances. Part 1, "Safe Currents", shows how electrical shocks can be prevented. Part 2, "Fire By Wires", illustrates the prevention of fires in the home due to electricity. Center for Safety Education, New York University.

OPEN FOR INFECTION (20 minutes) Sound slidefilms.
Story features workman, who cuts finger and then scoffs at first-aid. Is ordered to first-aid room by foreman. While having the cut treated, he learns from the doctor of the great dangers in neglecting even the smallest cut or injuries. The important reasons for prompt first-aid are given and examples of neglected first-aid are shown. The worker is

firmly convinced by the argument and vows never again to let a cut go untreated. National Safety Council, Inc.

WE DRIVERS (1 reel) 16mm 35mm silent or sound.

An effective picture on traffic safety. Black and white and partly technicolor. Paul Garrett, Director of Public Relations, General Motors Corporation.

SAVING SECONDS (2 reels) 16mm 35mm silent or sound.

The theme of this picture is that "Haste makes waste". The film shows the folly of trying to save seconds at the risk of losing lives. Safety lessons in driving a car are shown and accidents due to incorrect and careless driving are illustrated when "Johnny" takes the wheel of the car. American Museum of Natural History.

CARBON MONOXIDE, THE UNSEEN DANGER (1 reel) 16mm 35mm silent.

Splendid film on safety, showing dangers of carbon monoxide gas from an automobile running in a closed garage and proper first-aid methods to be used in resuscitation. Department of Education, American Museum of Natural History.

TWELVE POINTS OF SAFETY (1 reel) 35mm silent.

Made in cooperation with Peabody Coal Company. U. S. Bureau of Mines, Experiment Station.

REMEMBER JIMMY (1 reel) 16mm silent. (Courtesy Fireman's Fund Indemnity Company).

An excellent safety film showing the disastrous results of speeding, inattentive and drunken driving, cutting in, etc. American Museum of Natural History.

WHY NOT LIVE (1 reel) 16mm 35mm silent or sound.

A graphic, dramatic lesson in safety and accident prevention, fitting in timely fashion with the nationwide campaign aimed to cut down the tragic and terrific toll of accidents on the highway, in the water, in the home and on the farm. William J. Ganz Company.

AUTOMOBILE SAFETY (1 reel) 16mm silent.

Shows how accidents are caused by careless drivers and way and means of avoiding accidents. Wholesome Film Service.

AMERICAN RED CROSS TO THE RESCUE (1 reel) 16mm 35mm silent or sound.

A national emergency flood. The American Red Cross faces the worst disaster since its founding. The Army, Navy and Coast Guard Cooperate. William J. Ganz Company.

FOLLOW THE WHITE TRAFFIC MARKER (1 reel) 16mm silent.

A dramatic film showing automobile accidents and how to prevent them. Y. M. C. A. Motion Picture Bureau.

HEEDLESS HURRY (1 reel) 16mm sound or silent.

Vividly portrays the careless acts of drivers and pedestrians resulting in tragic consequences, with a huge annual toll of deaths and suffering. Welch Studios.

HELL WOULDN'T HAVE HIM (1 reel) 16mm sound.
Excellent for showing to truck drivers. Bruce Dodson & Company.

ARTIFICIAL RESPIRATION (1 reel) 35mm silent.
Shows the prone pressure method how to revive a person from drowning and from the asphyxiation by gas and electrical shock. National Safety Council, Inc.

FACTORY SAFETY (1 reel) 35mm sound.
Instruction in safety rules, housekeeping, eye protection, and first-aid are presented with various factory backgrounds. Chevrolet Motor Company, see local Chevrolet Dealer for details.

THE HANDICAP (1 reel) 35mm silent.
Industrial Safety - A romantic story teaching an impressive safety lesson. National Safety Council.

HINDSIGHT VERSUS FORESIGHT (2 reels) 35mm silent.
Some methods of combating hazardous conditions are shown in foundry scenes emphasizing the need for safety goggles, safety shoes and proper clothing. National Safety Council.

LADY LUCK'S HUSBAND (Slidefilm) 35mm sound.
Features industrial safety, also suitable for vocational schools. Travelers Insurance Company.

THE OUTLAW (2 reels) 35mm 16mm silent.
"King Carelessness" smuggles a troupe of mischievous imps into a factory, but the factory manager, safety engineer and the workman regain control. Liberty Mutual Insurance Company.

ASK DADDY (2 reels) 35mm silent.
Elementary-deals with home and street safety and firearms. National Safety Council.

CROSS ROAD PUZZLE (2 reels) 35mm silent.
Shows dangers resulting from lack of uniform traffic regulations. American Automobile Association.

DEATH TAKES NO HOLIDAY (Slidefilm sound).
Presents pictures of the larger phases of the motor traffic problem and high schools' opportunity to train drivers. National Conservation Bureau.

TESTING THE DRINKING DRIVER (Sound slidefilm).
Presents pictures of the proper procedure to follow in securing conviction of drivers under influence of alcoholic liquor. National Safety Council.

MAKING YOUR CITY SAFE (Sound slidefilm).
An invaluable aid to any city or community wishing to start or improve a traffic safety program. National Safety Council.

GAMBLING WITH DEATH (1 reel) 35mm silent.

Shows highway, railroad grade crossing situation from every angle.
National Safety Council.

GOOFS (1 reel) 35mm silent.

Presents series of auto accidents which have actually occurred. Suitable for showing in secondary school. Automobile Club of Southern California.

HIGHWAY MANIA (2 reels) 35mm sound.

Improper and proper driving practices are shown. State Motor Vehicle Commission.

HIT-AND-RUN DRIVER (1 reel) 35mm sound.

Shows adventures of detection, conviction and remorse of young hit-and-run driver. Metro-Goldwyn-Mayer Corporation.

THE HIT THAT SCORED (1 reel) 35mm silent.

Shows adventures of a reckless truck driver who believes in bluffing the other fellow. Bell Telephone Company of Pennsylvania.

INERTIA AND THE OTHER FELLOW (Slidefilm).

Describes organization of community traffic committee. American Legion, Local or State Office.

ONCE UPON A TIME (1 reel) 16mm 35mm silent or sound.

Animated cartoon showing fairyland setting used to emphasize need of safety on streets and highways. Metropolitan Life Insurance Company.

READING, 'RITING AND 'RITHMETIC (1 reel) 16mm 35mm silent.

Simple traffic rules for elementary school children. American Museum of Natural History.

SAFE SEEING SAFE DRIVING (Slidefilm).

Portrays horrors of accidents and prescribes scientific lighting as a major remedy. General Electric Company.

SAFETY IN NUMBERS (Slidefilm).

Community safety program for organization. Metropolitan Life Insurance Company.

SCHOOL PATROL (1 reel) 35mm sound.

Shows school boy patrols duty and points out nine safety rules for pedestrians. Chevrolet Motors Car Company, see local Chevrolet dealer for details.

SENTINELS OF SAFETY (1 reel) 16mm 35mm sound.

Home safety. Glorifies housewife as person who must keep family safety minded. Aetna Life Insurance Company.

STREET AND HIGHWAY SAFETY (1 reel) 16mm silent.

Suitable for elementary schools. National Conservation Bureau.

STREET SAFETY FOR ADVANCED GRADES AND ADULTS 16mm silent.

Safety principles governing activities of older children and adults. National Safety Council.

THE TRUCK DRIVER (1 reel) 16mm sound.

Deals with fleet safety problems on the streets and highways. National Safety Council.

THE VERDICT (2 reels) 16mm 35mm silent.

A gripping story depicting the speeder, jay walker, lady driver, truckman and man who has had "only a couple of drinks". Dramatic climax. National Safety Council.

WHY BE CARELESS (1 reel) 16mm.

Features highway safety. Slapstick comedy. Travelers Insurance Company.

CHANCE TO LOSE (1 reel) 16mm sound and silent.

Excellent traffic safety picture. For general public. Plymouth Motor Company.

BICYCLING WITH COMPLETE SAFETY (1 reel) 16mm silent.

Scenes taken with the cooperation of students in the Kansas City Public Schools. The Calvin Company.

EVERY SWIMMER A LIFE SAVER (1 reel) 16mm 35mm silent.

Shows methods of rescue and resuscitation, including first-aid methods as practiced by boy scouts. Society for Visual Education.

WORKING FOR DEAR LIFE (1 reel) 16mm 35mm silent.

Stresses importance of having thorough physical examination made annually. Metropolitan Life Insurance Company.

THE BAD MASTER (1 reel) 16mm 35mm silent and sound.

Excellent educational fire prevention data. Aetna Casualty and Surety Company.

STOP SILICOSIS (1 reel) 16mm 35mm sound.

Illustrates the danger of silicosis and dust hazards in industrial plants. Gives detailed but comprehensive information on how to eliminate these hazards. National Safety Council.

THE EYES HAVE IT (20 minutes) Sound slidefilm.

A dramatic appeal for the use of goggles in industry. The value and importance of goggles is demonstrated by case histories of eye accidents and how they could have been prevented. Augmented by other characters and sound effects. National Society for the Prevention of Blindness, Inc.

RULES FOR TOOLS (20 minutes) Sound slidefilm.

An interesting story of the safe use of small hand tools, built around the four rules, "select the right tool," "be sure it's in good condition", "use it properly", "put it away safely". The tools, themselves, play the leading roles and carry on a conversation with "Ol' Man Accident". Each tool explains how the safety rules should be applied to him. National Safety Council.

FORMATIONS (9 minutes) 35mm sound.

There are four cars the driver must keep in mind at all times; the car ahead, the car behind, the car around the corner, and the car he is

driving. If he drives safely in relation to these cars, he will be a safe driver. Chevrolet Motor Company.

THE OTHER FELLOW (9 minutes) 35mm sound.

A reckless driver sees himself driving many other cars on the road. He learns from these experiences that to every other driver, he is the "other fellow". The safety lesson is taught through comedy. Chevrolet Motor Company.

KNIGHTS ON THE HIGHWAY (9.5 minutes) 35mm sound.

Night driving is getting to be more a pleasure every year, because progress is being made in the understanding of the principles which make night driving different. The picture illustrates six important safety rules of night driving. Chevrolet Motor Company.

A STITCH IN TIME (26 minutes) 16mm sound.

Covers the causes of accidents on the farm and stresses the importance of checking the premises carefully for all possible commonplace sources of danger to small children. This covers old boards with rusty nails, hoes, rakes, spades and shovels, uncovered cisterns and water tanks; small boys being allowed to drive nervous horses, or to lead or drive a dairy bull. The accidents in the homes that happen every day to the housewife are clearly and emphatically emphasized. Precaution, foresight, and checking up are strongly brought out as the substitute for carelessness. The C. L. Venard Organization.

SHEET METAL

BAR FOLDER (10 minutes) 16mm sound 1942.

Shows the use and care of the bar folder, methods of making flanges, hems, and other sheet metal work. Close-up photography shows every working part of the machine, its adjustments. Sound Masters, Inc.

BENDING AND CURVING (40 minutes) 16mm sound.

Presents method of bending and curving long, narrow parts to desired shapes. Navy-Castle Films.

BLANKING AND PIERCING (15 minutes) 16mm silent 1943.

Shows how to design tools with proper clearance, to set up tools for best results; how to lubricate thoroughly. Shows how to lay out sheet aluminum economically; shows techniques employed in cutting blanks and piercing holes in aluminum sheet. Aluminum in cooperation with U. S. Bureau of Mines.

BLANKING AND PUNCHING (30 minutes) 16mm sound.

Present economical methods of cutting sheet metal to size, including shearing, sawing, punching, routing and gang drilling. Navy-Castle Films.

BLANKING SHEET METAL ON THE SQUARING SHEAR (15 minutes) 16mm sound
\$22.73 OEL30.

Shows how to lay out tapered blanks on an aluminum sheet; how to set and adjust front and back gages and side stops; how to use hold downs and treadle; how to check blanks and further adjust machine; how to trim

blanks. Animated drawings are used to explain operations of the shear. USOE-Castle Films.

BLANKING SHEET METAL WITH HAND SNIPS (18 minutes) 16mm sound \$25.22 OEL31.

Shows how to care for and adjust the sheet metal snips; how to select snips for the job to be done; how to cut along a straight line; how to cut an outside circle and a notch; how to cut an inside line; how to remove burrs left by cutting. USOE-Castle Films.

BLANKING WITH SWING ARM ROUTER (17 minutes) 16mm sound \$23.98 OEL32. Shows how to operate a swing arm router; how to set up the work and template for routing; how to change router bits; how to rout internal contours; and how to rout external contours. USOE-Castle Films.

CORNICE BRAKE (20 minutes) 16mm sound \$40 1942. Shows the use and care of the cornice brake, its adjustments, the bends, flanges, etc. that can be made on the cornice brake. Sound Masters, Inc.

DRAWING, STRETCHING AND STAMPING (22 minutes) 16mm sound 1943. Illustrates alloys best suited for drawing and stretching; shows single and double-action presses making cylindrical; rectangular and odd-shaped parts from aluminum sheets. Shows stamping, embossing, coining aluminum; how the choice of alloy influences tool design, clearances, radii, and reduction per draw. Aluminum in cooperation with U. S. Bureau of Mines.

FILING TEMPLATE METAL (15 minutes) \$22.73 16mm sound OEL29. Shows how to clamp template metal on a bench and in a vise; how to select the correct file for each job; how to grip the file for different jobs; how to file a square edge and remove burrs; how to file inside rectangles and remove fillets from corners; how the wrist is rotated for filing inside curves. For illustration, a straight edge, an inside oval, an outside contour template, and an inside rectangle are used. USOE-Castle Films.

FINISH FORMING BY HAND (16 minutes) 16mm sound \$23.35 OEL35. Shows the tools and methods used for holding small aluminum bulkheads during forming; the grip of the mallet handle and the free movement of wrist and hand during forming (in slow motion); the successive stages of forming with a flat fibre strip (around the bend of the flange, along the flat of the flange and the final smoothing); the successive stages of shrinking large wrinkles with a forming tool; marking excess metal with a surface gage; and checking finished work with a contour template. In illustrating these operations, a long narrow bulkhead and a bulkhead having a sharp radius are used. USOE-Castle Films.

FORMING METHODS (40 minutes) 16mm sound. Shows the forming of flat parts by the use of drop hammers; punch presses, hydraulic and stretch presses. Navy-Castle Films.

FORMING ON A HAND OPERATED BRAKE (17 minutes) 16mm sound \$24.60 OEL34. Shows how to lay out work for bending in a hand operated brake; how to set up brake for bend angle and bend radius; how to check test pieces and finished work; how to operate brake. USOE-Castle Films.

FORMING ON ROTARY MACHINES (17 minutes) 16mm sound \$24.52 OE290.
Illustrates forming a part on a slip-roll machine, marking bend lines, adjusting the rolls, and checking the part with a radius template. Shows the adjustment of a beading-roll machine, the forming of a bead at a specified edge distance, and the forming of shallow and final beads. USOE-Castle Films.

FORMING ON THE STRETCHING MACHINE (16 minutes) 16mm sound \$24.52 OE251 1945.
Parts of the stretch press; how to operate the stretch press; how to set up the machine for a job; how to handle the production run. USOE-Castle Films.

FORMING WITH A DROP HAMMER (16 minutes) 16mm sound \$25.17 OE291 1945.
Purpose and nature of drop hammer forming; how to operate the pneumatic hammer; how to set up the punch and die; how to handle the production run on a single-hit job; how to dismantle the setup; how to use draw rings on a deep-draw job. USOE-Castle Films.

FORMING WITH RUBBER ON THE HYDRAULIC PRESS (11 minutes) 16mm sound \$17.35 OE133.
Shows how sheet metal parts are formed with rubber on a hydraulic press; how to set up the work in the press; and how to operate the press; also shows how a large power press operates, and how small hand presses compare with power presses. USOE-Castle Films.

GENERAL SHEET METAL PRACTICE (20 minutes) 16mm sound.
Shows forming of aluminum sheet by manual and mechanical devices; shows bending, beading, hammering, flanging, edging; how to compensate for springback; and how to care for tools used. Aluminum in cooperation with U. S. Bureau of Mines.

HOW TO FORM ALUMINUM 16mm sound 1944.
Shows processes in manufacturing aluminum; may be shown in series or in separate units:

- (16 minutes) Blanking and Piercing
- (22 minutes) General Sheet Metal Practice
- (17 minutes) Spinning
- (14 minutes) Tube and shape bending

See description by title in this index. Aluminum in cooperation with U. S. Bureau of Mines.

JIGS AND FIXTURES (10 minutes) 16mm sound.
Shows dies in cross section drawing to illustrate operation. Flow of metal shown in animation. R. B. McFarland & Associates.

SAWING TEMPLATE METAL (17 minutes) 16mm sound \$23.98 OE128.
Shows how to use a job selector chart for width, pitch, set of teeth, and speed; how to identify raker, wave, and straight teeth; how to mount a saw blade on a band saw; how to select and adjust blade guides; how to saw to a layout line; how to "chew out" metal from a notch; how to remove burrs. USOE-Castle Films.

SPINNING (ALUMINUM) (17 minutes) 16mm sound 1943.
Shows three methods of spinning aluminum; partly by hand, partly

mechanically, entirely mechanical. Shows aluminum alloys most suitable for spinning. Aluminum in cooperation with U. S. Bureau of Mines.

TUBE AND SHAPE BENDING (13 minutes) 16mm sound 1943.

Shows proper procedure in bending aluminum tubing and shapes, keeping tube round at point of bend. Shows use of filler, mandrels and other supporting devices. Aluminum in cooperation with U. S. Bureau of Mines.

CARE AND USE OF HAND SHEARS, THE (Slidefilm) SN30.

Demonstrates several kinds of shears and snips, including the straight, the slitting, the circular, the left hand and the right hand. Shows how they work, their care, and the proper method of using them. Navy-Castle Films.

DRAW BENCH OPERATIONS (Slidefilm) SN258.

Explains the purpose of the draw bench, demonstrates how a pattern is made, shows how the draw bench is set up for the pattern, and demonstrates how the machine is operated. Navy-Castle Films.

FLANGED PARTS TRAY (94 pictures, 65 frames).

Layout procedure when bend allowances must be computed; stretching metal over forms; making flat patterns or stretchouts; rolling and braking sheet metal to dimensions; squaring shear; cornice brake; bar folder; forming angles to curves; assembling, fitting and riveting parts. The Jam Handy Organization.

MAKING A ROUND METAL CONTAINER (Slidefilm) SN292.

Shows correct procedures for making a round sheet metal container, including cutting the metal, making the flanges, hammering the lock seam, and constructing the bead around the top. Navy-Castle Films.

MAKING CURVED FLANGES (Slidefilm) SN291.

Shows in detail the tools and steps used in hand forming a flange on a disk and the corners of a rectangular tray, both of which are made of aluminum. Navy-Castle Films.

METAL BUMPING AND HOT SHRINKAGE (52 pictures, 63 frames).

Instructions in the fundamentals of bumping sheet metal and in "hot shrinking" stretched sheet metal. The Jam Handy Organization.

SHEET METAL WORK (Slidefilm) \$2. Society of Visual Education.

TOOL BOX - PART I (69 pictures, 43 frames).

How to lay out, make and assemble the bottom, sides, ends, and corners - reinforcing angles - laying out light weight sheet metal for trim, bends, flanges, offsets, hems, beads, slots, corners and rivet holes - forming of parts by hand shears, squaring shears, hand snips, cornice brake, bar folder, beading rolls - center punching, drilling, regulating and riveting of laid out rivet holes. The Jam Handy Organization. (Supplementary printed material is furnished).

TOOL BOX - PART II (34 pictures, 29 frames).

Top and tray of tool box laid out on and fabricated from lightweight sheet metal - scribing center lines to locate positions - bending top to

a fifty-four degree angle and illustration of bend angle formula laying out and forming of rivet holes, slots, hems, and bend lines - use of tin-smith's oval head rivets - square drilling and riveting of end pieces. (Supplementary printed material is furnished). The Jam Handy Organization.

TOOL BOX - PART III (56 pictures, 49 frames).

Simplicity of hardware design - how to lay out, form and assemble simple hinges, hasps, staples, staple plates, sleeve type handles, handle clips, tray supports and tray stops - rod work added to sheet metal work - fitting and setting in place of fabricated hardware - finished tool box painted and ready for use. (Supplementary printed material is furnished). The Jam Handy Organization.

THE EVOLUTION OF AN INGOT (2 reels) 16mm sound.

Manufacture of galvanized sheet metal from ingot to finished product. Mid-Continent Picture Corporation.

SHEET METAL WORKER, THE (11 minutes) 16mm sound Rent \$1.25. Penn State College.

SHEET METAL WORK (20 minutes) 16mm silent 1941.

Reading of blueprints, using drafting instruments, including the procedures and techniques, shown in close-up. Three basic projects illustrated; drag truss fitting, flange reinforcement, I-beam spar. Gutlohn, Walter O.

WELDING

NEW HORIZONS IN WELDING (30 minutes) 16mm sound Free.

The modern set-up for production welding - the testing laboratories, the preparation of templates, and the actual welding processes. Harnischfeger Corporation.

WELDING OPERATOR (11 minutes) 16mm sound \$50 1942.

Use of oxyacetylene equipment; resistance welding; arc welding; typical jobs. Vocational Guidance Films, Inc.

FIRE PREVENTION OF OTHER PRECAUTIONS IN WELDING AND CUTTING 16mm sound.

Safety techniques in the use of oxyacetylene welding and cutting processes. Linde Air Products Company.

SAFE HANDLING OF OXYGEN AND ACETYLENE CYLINDERS AND APPARATUS, THE 16mm sound.

Safety techniques in the use of oxyacetylene welding and cutting processes. Linde Air Products Company.

BRAZING CARBIDE TOOLS (18 minutes) 16mm sound \$25.81 OE241.

Shows the characteristics of carbide tools, the preparation and brazing of carbide tools with silver solder, making a sandwich braze, and brazing by other methods. USOE-Castle Films.

CUTTING AND SHAPING STEEL WITH THE OXWELD CUTTING MACHINE TYPE GM-15 (20 minutes) 16mm silent.

Shows uses of the Type GM-15 cutting machine - including preparation of internal dies, rimming dies, gear blanks, large hexagonal nuts, crane hooks, transformer tops, and gear sections for rocker arms. The GM-15 shown doing straight line cutting, bevel-cutting, circle cutting, cutting, cutting from a templet, and hand-tracing. Each operation is carried through from the arrangement of the material to the finish of the cut. Linde Air Products Company.

FLAME CUTTING OF BILLETS AND BARS (16 minutes) 16mm silent.

Shows oxyacetylene cut-off equipment used for cutting around and square bars in end squaring, cutting to shipping lengths, and dividing long sections into forging blanks, techniques and equipment for hot-cutting of billets and for room-temperature billets. Linde Air Products Company.

GUIDED BEND TEST, THE (17 minutes) 16mm sound \$24.60 OEL89.

Shows how to prepare groove weld and fillet weld test specimens for the guided bend test; how to make the test; causes of failure in bending. USOE-Castle Films.

HAND SOLDERING (20 minutes) 16mm sound \$27 OE479.

Explains the theory of soldering and shows how to prepare soldering irons and torches; how to clean and prepare the work; how to fasten the joints; how to solder wire and lug joints; how to seal seams. USOE-Castle Films.

HIGH FREQUENCY SOLDERING (17 minutes) 16mm sound \$24.60 OE480.

Shows the theory of high frequency heating; how to select a work coil and leads; how to adjust the work coil to the work; how to tune a converter; how to prepare the workpiece; how to determine and adjust correct soldering time and temperature; and how to use an automatic timer. USOE-Castle Films.

HOW TO WELD ALUMINUM (35 minutes) 16mm sound 1942.

Shows gas-welding method, using either the oxyhydrogen flame or the oxyacetylene flame; explains proper adjustment of the torch to produce correct shape and color of flame. Shows arc welding, including the metal-arc, carbon-arc, and atomic hydrogen processes. Aluminum in cooperation with U. S. Bureau of Mines.

INSIDE OF ARC WELDING (6 reels, 10 minutes each) 16mm sound 1942.

Illustrates the technique of arc welding: 1. Fundamentals 2. Flat Position 3. Horizontal Position 4. Alternating Currents 5. Vertical Position 6. Overhead Position. General Electric Company.

INSIDE OF ATOMIC-HYDROGEN ARC WELDING (20 minutes) 16mm sound 1943.

Part I, Fundamentals of atomic-hydrogen welding; Part II, Techniques for making corner, edge and fillet and groove welds; controlling the molten pool; proper penetration; good fusion and uniformity. General Electric Co.

INTRODUCTION TO OXYACETYLENE WELDING (20 minutes) 16mm sound 1942.

Shows methods to get proper flame; holding torch and welding rod; finishing job and putting away tools. The Jam Handy Organization.

MAGIC WAND OF INDUSTRY-ARC WELDING (25 minutes) 16mm sound Color 1944.

A story of arc welding. Describes what the process is, why and where it is used in industry throughout the world. Lincoln in cooperation with U. S. Bureau of Mines.

MANUAL CUTTING A BEVEL - FREEHAND (13 minutes) 16mm sound \$19.21 OE187.

Shows how to select a tip for bevel cutting; how to clean a tip; how to adjust oxygen and acetylene pressure for bevel cutting; how to cut a bevel with minimum drag; and how to handle and operate the cutting equipment safely. USOE-Castle Films.

MANUAL CUTTING A SHAPE FREEHAND GUIDED (16 minutes) 16mm sound \$23.35 OE188.

Shows how to make a plywood template for cutting; how to make a tip guide device; how to position a template for cutting; how to use the guide device; how to use a circle cutting device. USOE-Castle Films.

MANUAL CUTTING TO A LINE - FREEHAND (21 minutes) 16mm sound \$27.71 OE186.

Shows how to assemble an oxyacetylene cutting outfit; how to select the proper cutting tip; how to adjust oxygen and acetylene delivery pressures; how to adjust the preheating cutting flames; how to make a 90 degree freehand cut; and how to disassemble the cutting outfit. Safety measures are emphasized and demonstrated. USOE-Castle Films.

MANUFACTURE BY ARC WELDING (45 minutes) 16mm silent.

Shows the use of arc welding in manufacturing processes. Lincoln Electric Company.

OXWELDING AND CUTTING (15 minutes) 16mm silent.

Cross section views and animation illustrate principles of oxyacetylene process used in cutting metals and welding; construction and operating principles of oxygen cylinders; acetylene cylinders, oxygen and welding regulators, and blow-pipes for cutting. Linde Air Products Company.

OXWELDING AND CUTTING IN PRODUCTION (15 minutes) 16mm silent.

Presents a brief survey of uses of the oxyacetylene flame welding; pressure vessels, condensor heads, cooler and metal furniture. Linde Air Products Company.

OXYACETYLENE WELDING LIGHT METAL (21 minutes) 16mm sound \$27.71 OE190.

Shows how to assemble a gas welding outfit; how to adjust gas pressures; how to adjust the flame; and how to make a butt weld and T weld in light tubing. USOE-Castle Films.

PREHEATING WELDING AND STRESS RELIEVING (15 minutes) 16mm silent.

Portrays the relative effects of heating, over heating, quenching, and slow cooling as applied to stress relieving in welding of prefabricated parts. Electric Arc Company.

PREVENTION AND CONTROL OF DISTORTION IN ARC WELDING (20 minutes) 16mm sound Color 1945.

In any arc welding operation, the heat effect of the arc and molten metal

has a tendency to warp or distort the plates being welded. Principles and rules to prevent this are demonstrated. A Walt Disney production under supervision of Lincoln engineers. Lincoln Electric Company.

PROFITS OF PROGRESS (10 minutes) 16mm sound.

Shows the processes of oxyacetylene welding and cutting in general and in repair and maintenance, construction, and repetitive production. International Acetylene Association.

PROSPERITY PROCESS (20 minutes) 16mm silent.

Shows acetylene process in metal working industries for reclamation and maintenance. Shows welding and cutting in selected industries. International Acetylene Association.

STORY OF A-C WELDING (35 minutes) 16mm sound Color Loan 1944.

Shows the speed, flexibility and efficiency of A-C welding process on all types of joints. General Electric Company.

STORY OF ARC WELDING (25 minutes) 16mm sound Color 1944.

Shows steps in arc welding. U. S. Bureau of Mines.

UNIONMELT WELDING - AN ELECTRIC WELDING PROCESS (15 minutes) 16mm silent.

Animated diagrams shows principles and applications of Unionmelt welding, its mechanical details. Linde Air Products Company.

UNIONMELT WELDING IN INDUSTRY (15 minutes) 16mm silent.

Shows Unionmelt welding equipment in the fabrication of pressure vessels and pipe, stressing speed, economy and simplicity of process. Linde Air Products Company.

UNIONMELT WELDING IN INDUSTRY - GENERAL APPLICATIONS (15 minutes) 16mm silent.

Shows process used in construction of transformer tanks, galvanizing kettles, and railroad equipment. Linde Air Products Company.

WELDING (11 minutes) 16mm sound.

Shows three types of flames, how to secure them, the correct way to hold the torch. University of Illinois.

BRAZING AND SILVER SOLDERING (49 pictures, 41 frames).

Definitions; tools, equipment and materials. The Jam Handy Organization.

CLUSTER WELDS (30 pictures, 32 frames).

Special tools, preparations and materials; inspection. The Jam Handy Organization.

FILLET WELDS - STEEL (75 pictures, 24 frames).

Tools, equipment, materials and preparation. The Jam Handy Organization.

FILMSTRIPS ON ELECTRIC WELDING (9 slidefilms).

1. Arc welded construction 2. Brief discussion of the shielded arc
3. The shielded arc process 4. Greater profits in manufacturing by redesign
5. Better builds and structures at lower cost by electric welding

6. Building better pipe lines faster and at less cost 7. Surfacing by electric welding 8. Automotive arc welding by the electronic tornado 9. Safety and health in arc welding. Society for Visual Education.

FLAT BUTT WELDS (45 pictures, 47 frames).

Preparation, procedures; inspecting weld; tests. The Jam Handy Organization.

FUEL AND OIL TANK REPAIRS (29 pictures, 32 frames).

Preparation; cleaning metals, safety; tack welding; testing. The Jam Handy Organization.

INTRODUCTION TO WELDING, AN (68 pictures, 64 frames).

Oxyhydrogen and oxyacetylene welding; pressure gauges and torches; safety. The Jam Handy Organization.

OXYACETYLENE CUTTING (34 pictures, 39 frames).

Cleaning and preparing the cut; preparing cutting torch; safety. The Jam Handy Organization.

QUALIFICATION TEST FOR WELDERS (69 pictures, 59 frames).

Test welds; single V butt, tubular butt, vertical fillet, combination sheet and tube, horizontal fillet; checks and tests. The Jam Handy Organization.

SETTING UP AND LIGHTING THE WELDING TORCH (58 pictures, 65 frames).

Use of equipment and safety precautions. The Jam Handy Organization.

SOLDERING (92 pictures, 71 frames).

Solder; definition; uses; methods; flux, types and uses; application; the copper; definition; heat sources for soldering; but, steps in soldering; preparing the bit; soldering cables, terminals, taps and splices; soldering sheet metal; safety precautions. The Jam Handy Organization.

STRUCTURAL STEEL WORKERS (Slidefilm) \$2. Society for Visual Education.

TUBE WELDS - STEEL (71 pictures, 58 frames).

Materials and preparation; specific operations. The Jam Handy Organization.

VERTICAL WELDS - STEEL (38 pictures, 41 frames).

Vertical fusion welding, lap welding; fillet welding, cross welding; inspecting. The Jam Handy Organization.

WELDING ALUMINUM FLAT SHEETS (64 pictures, 69 frames).

Characteristics of aluminum; uses of flux; making tack welds; butt weld, lap weld, wandering weld. The Jam Handy Organization.

WELDING ALUMINUM TUBES WITH SHEETS (49 pictures, 32 frames).

Review of aluminum welding properties; flux, preparation; fillet weld; welding flanges. The Jam Handy Organization.

WELDING FLAT RIPPLES (31 pictures, 35 frames).

Tools, equipment, and materials needed. The Jam Handy Organization.

WELDING STAINLESS STEEL (34 pictures, 38 frames).

Tools, material, and equipment; definition of characteristics. The Jam Handy Organization.

WELDING AS AN OCCUPATION (Slidefilm) \$2. Society for Visual Education.

WELDING, ARC IN BUILDING ERECTION (2 reels) 16mm 35mm silent.

Uses of electricity in arc welding in construction of large building. General Electric Company, Visual Instruction Section.

AUTOMATIC ARC WELDING IN INDUSTRY (2 reels) 16mm 35mm silent.

Application in the steel, automobile and electrical industries. General Electric Company, Visual Instruction Section.

TIES OF STEEL (1 reel) 16mm 35mm silent.

Converting scrapped steel rails into railroad ties by automatic arc welding machine. General Electric Company, Visual Instruction Section.

MODERN METAL WORKING WITH THE OXYACETYLENE FLAME (2 reels) 16mm 35mm silent. U. S. Bureau of Mines, Experiment Station.

OXYACETYLENE WELDING AND CUTTING FOR REPAIR, MAINTENANCE AND PRODUCTION (1 reel) 16mm 35mm sound. Linde Air Products Company.

OXWELDED INDUSTRIAL PIPING (1 reel) 16mm 35mm silent.

Shows various piping systems, air conditioning and refrigeration systems. Linde Air Products Company.

OXWELDING AND CUTTING THE MODERN METHOD OF JOINING AND SEVERING METALS (1 reel) 16mm 35mm silent. Internal construction and operating principle. Linde Air Products Company.

OXWELDING FOR PROFIT (2 reels) 16mm 35mm silent.

Versatility of processes in home, plant, farm application in many fields. Linde Air Products Company.

OXWELDING IN PRODUCTION (2 reels) 16mm 35mm silent.

Production of automobile body units, welding of pressure vessels and transformer tops. Linde Air Products Company.

AUTOMATIC MACHINE CUTTING WITH CM-12 SHAPE CUTTING MACHINE A-4 (1 reel) 16mm silent. Linde Air Products Company.

AUTOMATIC MACHINE CUTTING WITH SM-15 SHAPE CUTTING MACHINE A-5 (1 reel) 16mm silent. Linde Air Products Company.

MULTIFLAME LINDE WELDING FOR PIPELINE CONSTRUCTION (1 reel) 16mm silent. Linde Air Products Company.

WALLS WITHOUT WELDS (3 reels) 16mm 35mm silent.

Story of stainless steel tubes. U. S. Steel Corporation, Industrial Relations Department.

STEEL - MANUFACTURE OF PIPE (1 reel) 35mm silent.

Manufacture of pipe; rolling and cutting of blooms; rolling; trimming,

beveling and bending skelp into rough rubes; lap welding; and inspection and testing products. Visual Instruction Bureau, University of Texas.

PIPE AND TUBE MANUFACTURING (Reel 7) 35mm silent.

Illustrates how seamless and butt welded pipe are made. One sees a solid round billet of steel leave the furnace, enter the piercing mill and emerge on the other side as a long tube; passing on through the rolling reel, sizing, and testing operations. Film Division, American Museum of Natural History.

HARDFACING (1 reel) 16mm silent.

Shows how metals are surface hardened by using the flame of torch. Linde Air Products Company.

UNIONMELT WELDING 16mm silent.

An electric welding process U-1. Linde Air Products Company.

UNIONMELT WELDING IN INDUSTRY - PART I U-2 16mm silent.

UNIONMELT WELDING IN INDUSTRY - PART II Y-3 16mm silent.

Linde Air Products Company.

FLAME-HARDENING K-1 16mm silent.

Shows how the different sheet metals and tools are hardened by use of the flame. The picture shows also the high temperatures to which the metals are heated. Linde Air Products Company.

WELDING, SOLDERING AND BRAZING (7 slidefilms).

This series of educational slidefilms covers these subjects: (1) The welder - a brief history of welding (2) Gas welding equipment (3) Gas welding (4) Arc welding equipment (5) Arc welding (6) Elementary soldering (7) Brazing. The Jam Handy Organization.

THIS IS RESISTANCE WELDING (25 minutes) AS-2583 16mm sound Color.

This picture explains what resistance welding is and shows the fundamental types; spot, seam and projection. Shown in detail by cross section animated drawings. General Electric Company.

THE MULTI-FLAME LINDE WELDING HEAD FOR PIPE LINE WELDING (1 reel) 16mm silent (15 minutes).

This film presents the three-flame Lindeweld process, the Major portion of the film is devoted to instruction in the proper technique to be used with this method of welding pipe. In addition, there are some unusual telephoto scenes which show clearly the flow of molten metal. Linde Air Products Company.

FLAME HARDENING K-1 (1 reel) (15 minutes) 16mm silent.

A recently developed and extremely important use for the oxyacetylene flame is shown. The ability of this hot flame, followed by a water quench to harden the outside surface of steel and yet not affect the tough ductile core is clearly portrayed. Parts thus hardened have greatly increased life over unhardened parts. Interesting scenes show how the operator can control the width and depth of the hardened surfaces. Linde Air Products Company.

WELDING STAINLESS STEEL 16mm sound Free loan.

Aids in the teaching of welding students as well as those familiar with carbon-steel welding procedure. Allegheny Ludlum Steel Corporation.

WOODWORKING AND LUMBER

DOUGLAS FIR PLYWOOD (30 minutes) 16mm sound Color.

Logging operations and details of making plywood by both the cold and hot press methods; uses of plywood. Denver & Rio Grande Western Railroad.

TREASURES OF THE FOREST (15 minutes) 16mm sound \$16 1941.

Cutting and transportation of logs to mills; cutting logs into lumber and pulpwood; manufacture of wood pulp, paper, and viscose, and viscose into rayon. USDA-Castle Films.

WOODWORKER (11 minutes) 16mm sound \$50 1940.

Carpentering, mill working, cabinet making, pattern making phases of woodworking industry. Vocational Guidance Films, Inc.

DOORWAY TO HAPPINESS (30 minutes) 16mm sound Color 1942.

Logging, manufacture of doors and mill work; use and care in the homes. Fir Door Institute.

HOME BUILDERS AT WORK (45 minutes) 16mm silent \$32.50 1936.

The building of a home, from plans and blueprints to its occupation, with a depiction of the various trades involved in its construction. Furinton, Robert F.

HOW TO BUILD A HOUSE IN 78 MINUTES (30 minutes) 16mm sound 1943.

Technical review of the fabrication and erection of 5000 Homasote homes in 5 months time, showing the prevision-built system of construction. Homasote Company.

MAKING OF AMERICAN HOMES (20 minutes) 16mm sound Color 1943.

How the kitchen and bathroom may be rebuilt and modernized into rooms and beauty and utility; manufacturing processes in the making of porcelain fixtures. Castle Films.

ROOFS (35 minutes) 16mm sound Color 1941.

History of the invention of asphalt, ready-to-lay roofing by the Rubberoid Company in 1892. Process of manufacturing asphalt shingles and roofings, demonstrations of asphalt roofing products. Rubberoid Company.

DESIGNING A PATTERN FOR A WATER-COOLED MOTOR BLOCK (15 minutes) 16mm sound \$22.58 OE337.

How a patternmaker designs a complicated pattern and core boxes; how he can combine study of a drawing with the making of a layout to help in designing; how a complicated design can be broken down into smaller elements for detail study; how production requirements must be considered. USOE-Castle Films.

DESIGNING CORE BOXES FOR A WATER-COOLED MOTOR BLOCK (12 minutes)

16mm sound \$19 OE338.

How a patternmaker designs complicate core boxes; how a patternmaker can combine study of a drawing with the making of a layout to help in designing; how a complicated design can be broken down into smaller elements for detailed study; how machining and molding requirements must be considered. USOE-Castle Films.

MAKING A CORE BOX FOR FLANGED PIPE ELBOW (21 minutes) 16mm sound \$28.38 OE330.

Shows how to use pattern layout in making a core box; how to design a core box; how to lay out a curved core piece; how to turn the core cavity in a curved piece; how to use a reverse template; how to assemble a core box having a curved piece; how to finish the core box. USOE-Castle Films.

MAKING A CORE BOX FOR A MACHINE BASE (13 minutes) 16mm sound \$19.65 OE334.

How a patternmaker, working from a casting, goes about the job of designing a core box; how to design and construct two core boxes in which mating cores are to be made; how to design and construct large core boxes with loose pieces; how to design and construct a small, half-core box with interchangeable loose pieces. USOE-Castle Films.

MAKING A CORE BOX FOR A TAIL PRINT (17 minutes) 16mm sound \$25.81 OE350.

Shows how to use dry sand cores in molding holes in castings; how to use pattern layout to make a core box; how to distinguish between core and core print; how to lay out the core print; how to add the core; how to determine parting line of a core box. USOE-Castle Films.

MAKING A CORE BOX FOR A VERTICAL CORE (19 minutes) 16mm sound \$27.10 OE329.

Shows how to make sand cores; the function of the sand core; how to make a half box; how to use parted boxes; how to use layout pattern in making a core box; how to prepare core box pieces; how to assemble a core box. USOE-Castle Films.

MAKING A MASTER PATTERN AND CORE BOXES, AND ASSEMBLING CORES FOR A WATER-COOLED MOTOR BLOCK (15 minutes) 16mm sound \$23.22 OE339.

How careful design results in a practical pattern and core boxes; how each step of construction is checked; how a final check can be made with test cores and a sample casting; how these cores are pasted up and assembled. USOE-Castle Films.

MAKING A MATCH BOARD PATTERN (20 minutes) 16mm sound \$28.33 OE328.

Shows how to sketch a match board; how to prepare the board; how to make the patterns; how to make a match board layout; how to prepare gates to connect patterns; how to prepare the runner for the cope side; how to assemble the match board; how to turn a draft taper on a hole; how to attach flask fixtures. USOE-Castle Films.

MAKING A ONE-PIECE FLAT PATTERN (21 minutes) 16mm sound \$29.02 OE321.

Shows how to identify the parts of the molding flask; how to use shrinkage rules; how to prepare a pattern layout; how to prepare the pieces that make up a pattern; how to make identical castings; how to finish patterns. USOE-Castle Films.

MAKING A PATTERN FOR A FLANGED PIPE ELBOW (18 minutes) 16mm sound
\$25.81 OE327.

Shows how to make a right angle layout; how to make a 90 degree, horizontally parted round body; how to turn out separate core prints; how to make split flanges; how to set flanges into core prints; how to assemble half the pattern on the layout; how to dowel an elbow pattern; how to apply fillets. USOE-Castle Films.

MAKING A PATTERN FOR A MACHINE MOLDED STEEL GLOVE AND ANGLE VALVE
(13 minutes) 16mm sound \$21.95 OE340.

Shows how machine molding affects pattern design; how this particular pattern is designed; constructed, and mounted on inserts; how casting in steel affects pattern design; how the gating system for this particular pattern is designed and built for casting in steel. USOE-Castle Films.

MAKING A PATTERN FOR A THREE-PART MOLD (20 minutes) 16mm sound \$27.74
OE326.

Explains the reasons for the three-part pattern; shows how to make the layout; how to segment the body or center section; how to eliminate end grain on large flanges; how to turn large work on the end of the lathe. USOE-Castle Films.

MAKING A PATTERN REQUIRING A COVER CORE (14 minutes) 16mm sound
\$21.95 OE332.

Shows how consideration of the molding and coring problems leads to the choice of a cover core; how a patternmaker designs a pattern (and core boxes), requiring a cover core; how a patternmaker designs a cover print; how a patternmaker constructs this particular pattern and its core boxes. USOE-Castle Films.

MAKING A PATTERN REQUIRING BOX CONSTRUCTION (17 minutes) 16mm sound
\$24.52 OE333.

Shows how a patternmaker approaches the task of making a pattern from a casting; how a casting is measured to get pattern dimensions; how a pattern to be made of box construction is designed and why box construction is used; how this particular pattern is made by box construction. USOE-Castle Films.

MAKING A PATTERN REQUIRING SEGMENTAL CONSTRUCTION (13 minutes) 16mm
sound \$19.65 OE335.

Shows how and why segmental construction is a preferred method for some patterns; how a patternmaker designs a pattern requiring segmental construction; how a patternmaker constructs this particular pattern. USOE-Castle Films.

MAKING A PATTERN USING A GREEN AND A DRY SAND CORE (14 minutes)
16mm sound \$21.95 OE331.

Shows how a green sand core is molded; how a patternmaker determines when to allow for a green sand core; how a patternmaker designs a pattern allowing for a green sand core; and how a patternmaker visualizes and constructs this particular pattern. USOE-Castle Films.

MAKING A PATTERN WITH A HORIZONTAL CORE (14 minutes) 16mm sound
\$21.95 OE323.

Shows when to use a horizontal core; how to allow for shrinkage in bronze; how to lay out fillets; how to make horizontal core prints; how to true up a parting plane; how to dowel a pattern with a horizontal core; how to turn crusher strips. USOE-Castle Films.

MAKING A PATTERN WITH A TAIL PRINT (19 minutes) 16mm sound \$27.10
OE324.

Shows how to mold castings with holes; how to make a rough sketch for visualizing the actual casting; how to use dry sand cores; how to form core cavities by using tail prints; how to make a layout including tail prints. USOE-Castle Films.

MAKING A PATTERN WITH A VERTICAL CORE (15 minutes) 16mm sound \$21.95
OE322.

Explains the importance of making a preliminary sketch; shows how to make the layout; how to allow for shrinkage; how to allow for finish; how to lay out the core prints; how to use the layout; how to assemble the pattern; how to allow for draft; how to shellac the pattern. USOE-Castle Films.

MAKING A SEGMENTED PATTERN (22 minutes) 16mm sound \$29.02 OE325.

Shows how to plan segmentation of pattern; how to lay out segments; and web; how to assemble the pattern; how to prepare the recessed hub; how to finish the patterns. USOE-Castle Films.

REDESIGNING A PATTERN FOR PRODUCTION PURPOSES (11 minutes) 16mm sound \$17.71 OE336.

Shows how this pattern, as originally designed, is molded and why it is not practical for quantity production; how the pattern can be redesigned to meet quantity production requirements. USOE-Castle Films.

BAND SAW (79 pictures, 89 frames).

Introduction to the band saw; names and functions of parts; safe practices for setting up a band saw; safe practices for band sawing. The Jan Handy Organization.

BELT SANDER (62 pictures, 84 frames).

Introduction to the belt sander; names and functions of parts; changing a sander for horizontal operations; safe practices for setting up a belt sander; replacing an abrasive belt; safe practices for belt sanding. The Jan Handy Organization.

CIRCULAR SAW: PARTS - INSTALLING A BLADE (74 pictures, 76 frames).

Introduction to the circular saw; kinds of circular saw; names and functions of parts; kinds of blades; installing a blade. The Jan Handy Organization.

CIRCULAR SAW: SETTING UP - OPERATING (46 pictures, 64 frames).

Safe practices for setting up a circular saw; safe practices for using a circular saw. The Jan Handy Organization.

DISC SANDER (31 pictures, 48 frames).

Introduction to the disc sander; kinds of disc sanders; names and functions of parts; safe practices for setting up a disc sander; safe practices for disc sanding. The Jan Handy Organization.

DRILL PRESS (63 pictures, 82 frames).

Introduction to the drill press; names and functions of parts; safe practices for setting up a drill press; safe practices for using a drill press. The Jam Handy Organization.

HAND TOOLS - HAMMERS - SAWS (41 pictures, 67 frames).

Selecting, carrying, and arranging tools at the workbench; safe use of coping saws; handsaws; hammers. The Jam Handy Organization.

JOINTER (62 pictures, 83 frames).

Introduction to the jointer; names and functions of parts; safe practices for setting up a jointer; safe practices for using a jointer. The Jam Handy Organization.

JIG SAW (76 pictures, 96 frames).

Introduction to the jig saw; names and functions of parts; safe practices for setting up a jig saw; safe practices for jig sawing. The Jam Handy Organization.

LATHE: FACEPLATE TURNING - OTHER OPERATIONS (35 pictures, 74 frames).

Safe practices for setting up a lathe for faceplate turning; safe practices for faceplate turning; safe practices for sanding and polishing; safe practices for drilling.

LATHE: PARTS - SPINDLE TURNING (74 pictures, 86 frames).

Introduction to the wood-turning lathe, kinds of wood-turning lathes, names and functions of parts; safe practices for setting up a lathe for spindle turning; safe practices for spindle turning. The Jam Handy Organization.

PLANER (47 pictures, 75 frames).

Introduction to the planer, names and functions of parts; safe practices for setting up a planer; safe practices for using a planer. The Jam Handy Organization.

PLANES - BITS - KNIVES - CHISELS - SCREWDRIVERS - FILES (52 pictures, 72 frames).

Safe use of smooth, jack, and jointer planes; bits and drills; chisels; gouges, and carving tools; knives; selecting and using screwdrivers; safe use of files and wood rasps. The Jam Handy Organization.

BUILDING TRADES, CAREERS IN (Slidefilm) \$2. Society for Visual Education.

MARBLE, VERNONT (Slidefilm) \$2. Society for Visual Education.

PATTERNMAKING (Slidefilm) \$2. Society for Visual Education.

FURNITURE MAKING (1 reel) 16mm silent.

Contrasts importance of period styles of past with styles of today; master craftsmen at work; modern methods in machine production. Eastman Kodak Company, Teaching Films Division.

HOOPING UP (1 reel) 16mm silent.

Shows manufacture of tight barrels for liquids from felling of the tree to the filling of the barrel. Associated Cooperage Industries of America, Inc.

IN THE WOOD (1 reel) 16mm silent.

Shows the manufacture of barrels. Associated Cooperage Industries of America, Inc.

MODERN INDUSTRIAL METHODS (4 reels) 16mm 35mm silent.

Lumbering; cabinet making; mass production of interchangeable parts; testing sewing machines. Singer Sewing Machine Company.

ACTION IN THE WOODS (2 reels) 16mm 35mm silent.

Producing timber in the woods for commercial purposes. Allis-Chalmers Manufacturing Company.

CEDAR CAMPS IN THE CLOUDS (1 reel) 35mm silent.

Scenic survey of pole-making industry. Western Electric Company.

CONQUEST OF THE FOREST (1 reel) 16mm 35mm silent.

Felling trees and manufacturing lumber in the Northwest. General Electric Company.

FELLING FOREST GIANTS (1 reel) 16mm silent.

Lumbering in Carolinas and the Northwest; various methods of handling. Films of Commerce Company.

LAND OF THE WHITE CEDAR (1 reel) 35mm silent.

Making poles in nature's snowy workshop. Western Electric Company.

LUMBERING IN THE PACIFIC NORTHWEST (2 reels) 16mm silent.

Story of lumber in Washington and Oregon. Audleir Films Company.

LUMBERING IN BRITISH COLUMBIA (1 reel) 16mm 35mm silent.

Shows lumbering operations and shipping. American Museum of Natural History.

LUMBERING IN THE PACIFIC NORTHWEST (2 reels) 16mm silent.

Laying railroads; dragging logs to it by steel cables; sawing logs into lumber; drying, planing and subsequent sorting and shipping. Eastman Kodak Company, Teaching Films Division.

OIL, THE WOOD PRESERVER (1 reel) 35mm silent.

Cargo of creosote oil from time it is pumped from tanker until it is forced into pine poles. Western Electric Company.

OUT OF THE DEEP WOODS OF DIXIE (1 reel) 35mm silent.

Preparing yellow pine tree cross arms. National Council of Y. M. C. A. Motion Picture Bureau.

PILLARS OF THE SKY (1 reel) 35mm silent.

Gathering and milling the raw products for cross arms and conduits. Western Electric Company.

POLE PUSHERS OF PUGET SOUND (1 reel) 35mm silent.

Views of northwestern cedar industry showing many amusing and thrilling incidents. Western Electric Company.

FOREST TREASURES (1 reel) 16mm sound.

Cutting and sawing logs of mahogany, walnut, oak and other kinds of trees used in veneer making. Complete operations from log to finished piece of furniture. 20 minutes to show. The Veneer Association.

TEAK LOGGING WITH ELEPHANTS (1 reel) 16mm silent.

In upper Siam. Bell and Howell Company.

TIMBER-R-R (1 reel) 16mm 35mm silent.

Timber growing and logging practices in the California pine region. U. S. Department of Agriculture, Division of Motion Pictures.

THE TRAIL OF THE LONG LEAFED PINE (1 reel) 35mm silent.

Yellow pine forests of far south; how trees are utilized for telephone timber. Western Electric Company.

TWO GENERATIONS (3 reels) 16mm silent.

Handling and utilization of wood lands; prepared especially for use in hardwood sections of the South. U. S. Department of Agriculture, Division of Motion Pictures.

WILD WOOD WORKERS (1 reel) 35mm silent.

Preparing yellow pine trees for use; activities of sawyers, axmen, teamsters, and boatmen. Western Electric Company.

THE MANUFACTURE OF DOUGLAS FIR PLYWOOD (1 reel) 16mm silent.

Steps in the manufacture of Douglas fir plywood from forest through the mill in detail, with brief showing of uses. Y. M. C. A. Motion Picture Bureau.

TREES AND MEN (4 reels) 16mm sound.

Modern logging and sawmill operations in the Northwest, emphasizing timber as a crop and showing methods used to conserve this resource and promote continuous production. Y. M. C. A. Motion Picture Bureau.

HARVESTING THE WESTERN PINES (1 reel) 16mm sound. Western Pine Association.

FABRICATING THE WESTERN PINES (1 reel) 16mm sound.

Graphic portrayal of the fabrication and assembly of sash doors, frames and screens as made from the Western Pines. Western Pine Association.

CALIFORNIA GIANTS (1 reel) 16mm sound. California Redwood Distributors, Ltd.

BUILDING A HOME WITH WESTERN PINES 16mm sound.

Step by step portrayal of the actual building of the Western Pine Home at the Golden Gate Exposition in San Francisco. The Western Pine Association.

BIG TIMBER (1 reel) 16mm sound.

A film depicting lumbering operations on Vancouver Island, B. C., from woods to the mill. This film contains some spectacular scenes of felling giant fir trees, etc. Y. M. C. A. Motion Picture Bureau.

FOUR THOUSAND GIFTS OF THE FOREST (2 reels) 16mm sound.

This film is a woodland phantasy of color. It displays, in the guide of a pageant, the wide variety of forest products which contribute to the present day standard of living. Y. M. C. A. Motion Picture Bureau.

THE STORY OF CANADIAN PINE (3 reels) 16mm sound.

In this film, the entire story of Canadian white pine from forest to the export of the finished product is covered in detail. Y. M. C. A. Motion Picture Bureau.

FROM FOREST TO FIRESIDE (3 reels) 16mm sound 35 minutes Color.

This picture is a colorful presentation of the origin, conversion and eventual use of the products of Ponderosa Pine. Many scenic views are from Yosemite, and Crater Lake. Shows many phases of logging operations; felling, limbing and bucking of timber and skidding of logs by machine power. Many scenes are shown in the mill itself, showing the cutting, kiln, drying and storage and sorting sheds. No advertising. Western Pine Association.

LET'S MAKE TOYS (2 reels) 16mm sound Color Rent \$7.

Illustrates in a clever way the manner in which several small toys can be made. This picture is extremely successful with students of all ages and with mechanically minded adults. A carefully diagrammed guide is enclosed with each reel. International Theatrical and Television Corporation.

PATTERNS OF AMERICAN RURAL LIFE (1 reel) 16mm sound 10 minutes Color.

Portrays in color, objects of rural handicraft exhibited in Rural Art Exhibit held in Washington in 1940. Briefly outlines the story of revival of rural crafts. Oklahoma A. and M. College, Stillwater, Extension Department. Y. M. C. A. Motion Pictures Bureau.

SET OF COLOR SLIDEFILMS (KODACHROME) Sale by Western Colorfilms Co.

- Group A 10 slides on industrial forest trees - Western pines, Idaho White Pines, Ponderosa Pine and Sugar Pine.
- Group B 10 slides on logging Western Pines.
- Group C 10 slides on railroad logging and saw milling.
- Group D 10 slides selected from Groups A, B, and C.
- Group E An additional group of 10 slides selected from Groups A, B, and C.

The following slidefilms can be furnished in either single or double frames. 35mm Listed for sale by the U. S. Department of Agriculture.

- | | |
|---|--------|
| 1. Chestnut Blight No. 199 | \$.50 |
| 2. Community Forests, A Local Asset No. 604 | 1.50 |
| 3. Famous Trees in the U. S. No. 507 | .60 |
| 4. Farm and the Farm Woods No. 622 | 1.00 |
| 5. Farm Forestry Extension in the U. S. No. 393 | .60 |
| 6. Farm Forestry in the South No. 447 | .55 |

7. Farm Shelterbelts in the Plains Region No. 387	\$.55
8. Farm Woods, a Safe Crop for Steep Land; Upper Mississippi Valley No. 570	.50
9. Forest Fires Delay Victory No. 626	1.25
10. Forestry and Human Welfare No. 506	.55
11. Pruning Southern Pines No. 596	.60
12. Saving our White Pines from the Blister Rust No. 370	.50
13. Southern Pines Pay No. 595	.50
14. Tree Planting and Land Use No. 620	1.25
15. Use of Logs in Farm Buildings No. 648	1.00

STRENGTH OF THE HILLS (1 reel) 16mm 35mm sound. 11 minutes.
Portrays the part that forests have played in the lives of the people of lower Ohio and in the Ozark Mountains. Y. M. C. A. Motion Picture Bureau.

TREE IN A TEST TUBE (1 reel) 16mm 35mm sound 11 minutes Color.
Scenes were made at the Forest Products Laboratory at Madison, Wisconsin, the many uses which man has made of wood are shown. The laboratory emphasizes its constant search for developing new and better uses for wood. Y. M. C. A. Motion Picture Bureau.

ELEMENTARY MANUAL TRAINING (1 reel) 16mm silent or sound. 15 minutes
Rent \$2.
Shows steps in construction of a gift box from wood. Instruction in uses of tools and technique are given. Y. M. C. A. Motion Picture Bureau.

THE FOREST RANGER (3 reels) 16mm 35mm sound 32 minutes.
Shows clearly the daily duties of the hundreds of forest rangers from Maine to California. Y. M. C. A. Motion Picture Bureau.

THE TREE OF LIFE (2 reels) 16mm 35mm sound 19minutes.
Discusses chiefly the methods advocated to insure perpetuation of forests on both publically and privately owned land. Emphasizes periodic cutting of trees selected in a manner to insure a growth equal to or greater than the cut. Y. M. C. A. Motion Picture Bureau.

PINE WAYS TO PROFIT (2 reels) 16mm 35mm sound 20 minutes.
Shows the number of ways pines can be used industrially. Covers lumber, pulpwood, poles, piling, fence posts, shingles, and other forest products. Oklahoma A. and M. College, Extension Department.

PREVENT FOREST FIRES (in three parts) 16mm sound.
1. A Good Woodsman, Precautions in Woods in Smoking and Building Fires.
2. How to Build A Camp Fire.
3. The Careful Fisherman.
Y. M. C. A. Motion Picture Bureau.

FORESTS FOREVER S-726 (3 reels) 16mm sound Color Service charge 50¢ plus Registration Fee.
This picture shows what can be done to stop destructive cutting practices, to restore and maintain a thrifty growing stock of growing trees, and to

safeguard forest production for the years ahead. Y. M. C. A. Motion Picture Bureau.

OPERATION OF A FOREST NURSERY S-444 (1 reel) 16mm sound Service charge 50¢ plus Registration Fee.

How true seeds are gathered and how seedlings are cared for until ready to transplant in the open. Y. M. C. A. Motion Picture Bureau.

STOP FOREST FIRES S-415 (1 reel) 16mm sound Service charge 50¢ plus Registration Fee.

Contains scenes of recent major forest fires, showing fire fighters at work and damage done to woods, wild life and soil in burnt-out areas. Y. M. C. A. Motion Picture Bureau.

THERE'S MORE THAN TIMBER IN TREES S- 411 (3 reels) 16mm sound Service charge 50¢ plus Registration Fee.

Shows the effect of forest cutting practices on labor, the need for a nationwide forest program to stop destruction of the resources, to keep forest producing and to furnish more permanent jobs. Y. M. C. A. Motion Picture Bureau.

TOMORROW'S TIMBER (2 reels) 16mm sound 18 minutes Color Rent \$7.50.

Story of Canada's timber resources and lumber industry. Shows how timber makes rayons and plastics; builds homes and planes; how it affects wages. Emphasis is stressed on preventing destruction forest fire. Brandon Films.

TIMBER FRONT (2 reels) 16mm sound 21 minutes.

Shows importance of Canada's forests and the vital part they play in the reconstructive days ahead. Reckless exploitation of forests in days gone by is contrasted with the care and foresight devoted to the woodlands of today. Brandon Films.

AMERICAN WALNUT (22 minutes) 16mm sound Color.

Gives the romantic story of the part walnut has played in its usefulness to mankind, from pre-historic days to the present day. Solid and veneer construction are explained. Shows many examples of fine furniture and other examples of the many uses of walnut in the finer homes of America. American Walnut Growers Association.

FORESTRY AND FOREST PRODUCTS (400 feet) 16mm silent.

An excellent background is laid for this subject by showing what has happened to our forests in the past. How the government has acted to protect the woodlands by enacting laws and the establishment of the Forest Service. Vocational Guidance Films Company.

PLANTING AND CARE OF TREES (1 reel) 16mm silent Rent or Purchase.

Close-up study of the tent caterpillar and the codling moth. The film further illustrates the planting and care of trees. Mogull's Camera and Film Exchange, Inc.

WHEN TREES TALK (1 reel) 16mm silent Rent or Purchase.

Detail of tree growth, uses of lumber and forest preservation. Mogull's Camera and Film Exchange, Inc.

AND SO WE MAKE A DRAW-TOP COFFEE TABLE (1100 feet, 3 reels) 16mm silent 40 minutes Free except \$1 handling charge plus insurance.

This picture was filmed in the workshop of the well-known Saunders Trade School, in Yonkers, New York, under the direction of Herman Hjorth, who as the instructor supervises the step-by-step construction of a small extension coffee table.

Description of the laying out and making of the spiral legs, an intricate procedure in abstract theory, is so finely detailed that every craftsman will be able to follow the method after seeing the picture. Albert Constantine and Sons, Inc.

CHAPTER IV

SUMMARY AND CONCLUSIONS

The information contained in this report deals with the lists of available films, filmstrips, and slides pertaining to industrial arts subjects which are most commonly taught. The technical phases of equipment and projection have been discussed by others, and their findings are summarized in Chapter I. This report has two definite aims:

- (1) A list of 575 firms supplying films, filmstrips and slides has been compiled and brought up to date.
- (2) A classified list of industrial arts subjects has been arranged under nineteen headings, with a list of films, filmstrips and slides for each; including a description of each.

The Problem Reviewed

It is apparent that during and since the war, much effort and attention has been directed to the production of all types and forms of visual aids. The alert teacher can readily see that these films lists are constantly changing and need to be revised frequently in order to have a list of currently available films. The classified film list, arranged under nineteen headings is a valuable aid for the shop teachers in obtaining films for their particular subjects. Since new films will be produced, and others become obsolete, it will need constant revision. 826 films and 279 filmstrips, pertaining to these department listings, are given with complete technical

information necessary for ordering. A short description of the film or visual aid is given in almost every case informing the teacher what information or technical phases are covered by the film.

The uses and place of visual aids in industrial arts has been stated. A list of 575 companies or distributing agencies of films or visual aids for industrial arts education is given in this report. These companies will gladly send catalogs, pamphlets, circulars, and other information to any shop teacher wishing to build up a complete file on visual aids.

There may be other agencies, but the writer feels that the companies listed can supply practically every form of visual aid, which the teacher desires for his program.

The organization of a visual education department, methods of building up the files of recent films and care and operation of equipment has been discussed.

The duties of a director of visual education have been enumerated and discussed. The building of equipment, to aid the efficient projection of visual aids, has been described.

Recommendations for Further Study

The writer realizes that the scope of this problem is unlimited. New industrial processes are being discovered and developed every day. Visual aids concerning these industrial changes will be made from

time to time to enable industrial arts to keep pace with industry. The alert teacher should be mindful of these important changes and always have on hand a list of films that are currently available.

The following topics or subjects suggested for further study seemed to be worthy of further consideration:

- (1) Building a file of aids for opaque-projection.
- (2) A study of rooms and acoustic effects for efficient projection of visual aids.
- (3) The correlation of films, filmstrips and slides to the courses of study in industrial arts.
- (4) A study of the administrative problems relative to visual education.
- (5) Cost accounting relative to a visual education program.
- (6) Forms for records of information relative to the projection of visual aids.
- (7) Preparation of criteria for evaluating visual aids.
- (8) A study of a program of films in the various industrial arts subjects, with emphasis on grade placement and evaluative criteria.

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