

FREE AND INEXPENSIVE TEACHING MATERIAL  
FOR WOODWORKING TEACHERS--AN UPDATE

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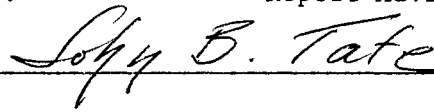
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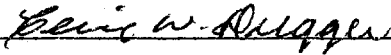
Submitted to the Faculty of the  
Graduate College of the  
Oklahoma State University  
in partial fulfillment of  
the requirements for  
the degree of  
MASTER OF SCIENCE  
December, 1985

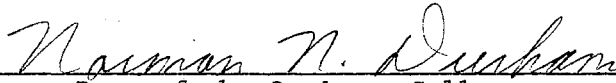
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Report Approved:

  
Report Adviser





  
Dean of the Graduate College

#### ACKNOWLEDGMENT

I would like to take this opportunity to thank Dr. Harold Polk, Chairman of the Industrial Arts Education Department at Oklahoma State University, Stillwater, Oklahoma, for the advice and help he has given in writing this report. I would also like to thank Dr. John B. Tate for his help and to Dr. Cecil W. Dugger for serving on my committee.

I would also like to thank my wife, Charlotte, for her encouragement, understanding and assistance during the writing of this report and to Jeanne Young for the typing.

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## CHAPTER I

### INTRODUCTION TO THE PROBLEM

Teachers face a continuing problem of presenting students with current, quality instructional materials while operating on school budgets which, by necessity, are scrutinized carefully and often cut back to absolute minimums.

Because of the need for excellent classroom materials, inventive teachers find it necessary to obtain pamphlets, films, and other materials which will make classroom teaching more effective while, at the same time, staying within a given budget.

It is believed that teachers could use and profit from an up-to-date list of manufacturers who publish and will send materials to schools at a nominal cost or at no cost.

#### Statement of the Problem

The purpose of this report is to provide teachers of woodworking with a good reference manual for inexpensive teaching materials. In order for the manual to be useful, it was necessary to inspect materials from the several manufacturers and media centers, and to classify them, by company, so that all information would be readily accessible to teachers.

#### Method of Research

A study conducted by Jakie F. Fisher in 1963 was reviewed. It was

believed that an update of his work would be the most effective method of presenting the needed materials in a manual. Names and addresses of suppliers of free and inexpensive teaching materials and films were obtained. A list of these can be found in Appendix A. Letters were sent to suppliers of teaching aids asking for any materials which were available. The materials obtained were evaluated to determine which could be used as instructional materials. A list of materials was made according to machines, tools, wood, plans, glues, fasteners, hardware, finish, safety, and miscellaneous items. Films were previewed and categorized according to general information or specific units of instruction.

Letters were sent to the suppliers listed in the appendix. Many responded with a volume of current literature. Information from the respondents was reviewed critically and all materials considered worthy of classroom instruction is listed and described.

To be considered worthy of classroom instruction, the literature and films had to pertain to woodworking. Materials had to be free, have a minimal cost; or, in the case of films had to be free with the stipulation that they could be kept for one week.

#### Limitations of the Problem

The information in this report is not complete in that it does not list every supplier who might offer free and inexpensive teaching materials.

A study of this type becomes dated quickly and should be revised and updated to keep abreast of new products and materials.

#### Expected Use of the Report

All teachers of woodworking classes who are interested in improving

instructional techniques will be able to use this report with effective results. The materials obtained may be used to supplement a student textbook, films may be used to portray a subject area, and lastly, the teacher will be presenting the most current material available.

## CHAPTER II

### TEACHING MATERIALS

Instructional materials should be presented to students in a manner that is easily understood. Teachers have relied on various teaching aids to accomplish this. This chapter lists and describes materials which can assist the teacher in presenting information in an interesting and informative manner. Part A of this report lists machines and tools which could be used by instructors. Literature concerning wood is described in Part B of this chapter. Plans which may be used by students and instructors are listed in Part C. Part D describes items needed to add beauty and stability to the project, such as glues, fasteners and hardware. Included in Part E is information which pertains to the finish that may be applied to a project. The subject of safety in the shop is covered in Part F of this chapter. Lastly, Part G is devoted to miscellaneous items which pertain to instructional materials.

Items marked with an asterisk (\*) can be purchased at a slight cost. The purchaser should request a price list from the supplier at the time of ordering since the price may change without notice.

#### Part A Machines and Tools

Industrial Arts students and instructors need pertinent information concerning machines and tools. The information which follows lists leaflets, folders, charts, catalogs, cards and films which illustrate machines and tools. Machines and tools are the means by which raw material is



changed into a finished product. They therefore constitute the primary basis for instruction. The following alphabetical list of manufacturers shows the various teaching materials that they distribute. Safety with tools is a vital concern to instructors. Several films concerning shop safety are also listed below the manufacturers.

#### Abernathy Vise Company

"Miter-master Clamp"--describes the characteristics of the type described.

"Woodworkers Vise" is a pamphlet describing the characteristics of the vise recommended for use with wood products.

"Abernathy Vises" describes the two vises recommended for use in woodworking shops, schools, home and industry.

#### Adjustable Clamp Company

"Clamps" describes, illustrates and gives the specifications of Jorgenson and Pony brand clamps. Handscrews, bar, band and "C" clamps and clamp fixtures are illustrated and described in this catalog.

"Jorgenson" describes, illustrates, uses and gives specifications of hold-down clamps. Directions are given on how to make these clamps in a school shop to meet the individual needs.

"School Shop" gives suggestions for selecting clamps for the school shop needs. It recommends and gives specifications of six of the company's clamps that can be used in the school shop.

#### Andersen Corporation

"Training Manual" deals with nomenclature, construction and proper usage of windows and gliding doors, and is intended to be a useful

educational aid. Classroom quantities are available when requested on official stationery.

Black and Decker Manufacturing Company

"Precision Power Tools" describes, gives specifications and illustrates precision power tools and accessories offered by this company which are suitable for use in the woodworking area of the school shop. Drills, hand power saws and other power tools are described in this brochure.

Cleveland Twist Drill Company

"The Use and Care of Twist Drills" was written as a textbook for colleges and vocational schools. It will aid in the proper use and care of drills. The different types are shown and the various uses of each are discussed. Some of the special types are described and illustrations are shown.

Columbian Vise and Manufacturing Company

"Columbian Vises" gives illustrations, descriptions and specifications of this company's line of vises which are suitable for use in school shops.

"Care and Uses of Vises" is divided into two parts. One side of the chart gives right ways to use and not use bench vises. On the other side it gives six ways to use and not use the woodworker's vise.

"Care and Use of Vises" is a wall chart and is similar to the item listed above.

DeVilbiss

"Manual and Automatic Equipment" describes the spray equipment offered by this company. There are two sections in this catalog which give pictures, descriptions, specifications and equipment recommended for use with different materials. The catalog offers all equipment needed for establishing or revising an existing spray application system.

"The A B C's of Spray Equipment" is a booklet based on questions repeated most often at the DeVilbiss School of Spray Painting. The fundamentals of use, care and operation are discussed in question and answer form. The various types and combinations of equipment best suited to different spray operations are described.

"Spray Gun Motion Study" is an analysis of spray gun techniques which will enable the user to obtain the best quality finish with the least fatigue and at a minimum cost.

"Making the Most of the Spray Painting Method" is a reference guide for spray painters. It shows and describes the basic spray equipment, correct use and technique and cleaning procedures.

Desmond Stephan Manufacturing Company

"Vises" is a catalog which describes, illustrates and gives specifications on twelve simplex-type vises. It also illustrates and lists repair parts for the vises. A vise comparison chart is given on which the simplex vises are compared with vises from eleven other companies.

"Sidewinder Vise" describes, illustrates and gives the specifications of the sidewinder vise which is offered by this company.

Duro Metal Products Company

"Duro Power Tools" illustrates, describes and gives specifications of the company's power tools for school and industry. Tilting arbor saws, spindle shapers, drill presses and band saws are listed in the catalog.

Greenlee Tool Company

"Woodworking Tools" describes and shows the different types of expansive, auger, power and zip bits. Chisels, gouges, drawknives and turning tools are also given. Some of the uses of these tools are discussed as well as their features.

"Woodworking Tools for Mortising, Boring, and Routing" describes and shows the different types of boring, countersinking, mortising and routing tools made by this company.

"Tips on Sharpening and Maintaining Bits, Chisels and Turning Tools" illustrates and explains how to use and care for a hollow chisel and bit. Descriptions and illustrations are given for power drills and hand brace and bits as well as sharpening procedures. Also given are sharpening instructions for multispur machine bits, wood chisels and turning tools.

"Boring Chart For Wood Screws" is divided into two parts. The table of wood screw specifications simplifies the selection of the bit or drill size best suited to requirements. The fractional equivalents and undersize and oversize decimals indicate how close a bit of given fractional size will be to a snug or loose fit. The other part shows the actual screw shank sizes of eighteen sizes from number zero to number twenty four.

### The Irwin Company

"How to Select and Care for Wood Bits" describes the importance of wise selection of bits for type of work. A section on the proper care of these tools is included.

"How to Know the Size of a Bit" is a poster showing how auger bits are sized. Irwin's catalog lists tools used in schools and industry. Classroom quantities are available.

### Northfield Foundry and Machine Company

Northfield produced brochures describe precision woodworking machines for school shops and industry. Included are brochures for band saws, radial saws, jointers, tilting arbor variety saws, surfacers and single and double spindle shapers. The specifications of the machines are given in these brochures as well as illustrations of each.

### Oliver Machine Company

"Oliver Woodworking Machines" illustrates and describes the machines which are suitable for use in Industrial Arts classes. This booklet lists all machines offered by the company such as saws, jointers, lathes and vises.

### Powermatic-Houdaille, Inc.

Powermatics catalog shows, describes and gives specifications on the company's line of machinery suitable for school shops. The catalog illustrates surfacers, jointers, tilting arbor saws, band saws,

scroll saws, lathes, sanders, mortisers, tenoners, and spindle shapers.

#### Skill Corporation

"Power Tools" is the catalog of this company which illustrates, describes and gives the specifications of power tools that can be used in school shops. Drills, saws, routers, sanders, grinders and other hand power tools are listed in the catalog.

#### Stanley Tools

Stanley's "Tool Catalog" illustrates and describes the tools produced by this company which would be best suited for school shops. Also listed are visual aids and ninety five ideas for student projects which can be purchased from the supplier.

#### L. S. Starrett Company

The "Micrometer" Chart clearly illustrates the latest type micrometer and component parts.

"The Educational Set" charts, which are blueprint-type, show fifteen widely used tools and many of their uses. "Decimal Equivalent and Tap Drill Sizes" are handy pocket size reference cards with complete information concerning decimal equivalents, letter sizes, number size drills and tap sizes. This information is also presented on a wall chart which is bound with metal at the top and bottom and has eyelets for hanging.

#### Vaughan and Bushnell Manufacturing Co.

The company catalog shows hammers, hatchets, pry bars, punches,

chisels and other hand tools. Descriptions, illustrations and safety tips are also given.

Vermont American Tool Co.

Vermont American's "Product Catalog No. C-385" gives their "complete line of power tool accessories, cutting tools and hand tools..."

This catalog could be used in identifying wood working tools and accessories and learning what products are available to the woodworker.

Warren Tool Group

"Columbian Woodworkers' Vise--Use and Care Chart" illustrates and explains the proper and improper use of woodworking vises.

"Clamps--Their History and Their Uses" is a booklet illustrating and explaining the types and uses of clamps from the time of the Egyptians.

Warren will also furnish their catalog containing Columbian Vises and Levels and Cincinnati Clamps.

Wilton Corporation

The "Wilton School Catalog" gives information concerning the Wilton line of woodworking vises. Illustrations and descriptions are given on the vises that the company recommends for use in school shops.

Films

From the Media Resource Center, Oklahoma State Department of Education.

### ABC of Hand Tools-Part I

Illustrations with animation are given for the proper use of common hand tools. The film covers hammers, screw drivers, pliers and wrenches.

### ABC of Hand Tools-Part II

The film illustrates the proper use of common hand tools with animation. It covers files, saws, chisels, planes, drills and punches.

### Power Tools: Safety in the Shop

This 14-minute film stresses common sense practices with power saws, lathes, and other woodworking and metal working machine tools, proper clothing, adjusting machine before starting and dealing with broken blades.

From the Oklahoma State Department of Vocational and Technical Education Film Library.

### Building Tech: Framing Rafters

This black and white film illustrates the principles of laying out and cutting of common rafters.

### Framing: Hip and Valley Rafters

How to cut, measure and fit hip and valley rafters is shown in this 25 minute film.

### The Wood Shell



This film shows the building of walls, floors, ceilings and roof of a house.

From the Oklahoma State University, Department of Education Film Library.

#### Hand Tools for Woodworking

Illustrations are given of the many varieties of woodworking tools found in school shops, industries and homes. The film shows how to select a woodworking tool and how to use it safely and correctly.

#### Precision Measuring: Combination Squares

The use of the combination square, one of the most valuable tools in the precision production of square corners, angles, mitres, curves, and circles, is demonstrated from blueprint to finished part by a craftsman. The square head, center head and protractor head are shown in practical use with aluminum, sheet metal and angle iron.

#### Precision Measuring: Steel Scale, Pt. 1--The Fractional Scale

Animation and close-up photography are used to explain in detail how to read the fractional scale through 1/64ths of an inch. Measurements of machine parts provide practical application of each step in the explanation.

#### Precision Measuring: Steel Scale, Pt. 2--The Decimal Scale

Step by step instruction is given in the use of the decimal scale by thousandths. Practical demonstrations with actual parts, and de-

tailed animation sequences that explain counting and measuring procedures are included.

#### Part B Wood

This section gives information on wood--its growth, harvesting, manufacturing and use. Wood, the essential material of the woodworking shop, has more material written about it than any other product covered in this report because of its age and vast quantities. Wood producers as well as furniture manufacturers have produced large quantities of literature for sales promotion. This material can be easily adapted to classroom use to assist the teacher in presenting the material.

##### American Plywood Association

American Plywood Associations' "Publication Index" lists pamphlets and booklets covering grade, design, and construction, industrial uses and source lists for plywood and products used in construction. Up to 25 copies of most APA publications are available free of charge for accredited college level and vocational school classroom use.

##### American Wood Council

"Some Little Known Facts About Wood" discusses the strengths of wood, its durability, ease of maintenance, adaptability and renewability are discussed. Up to 25 copies will be sent on request without cost.

##### Appalachian Hardwood Manufacturers, Inc.

"The Life of the Forest" is a booklet from St. Regis Paper Co., illustrating the aspects of forest life. It begins with the story

of how a tree seed takes root. Then, it illustrates how the trunk feeds and supports a growing tree, compares the leaves of familiar tree species, tells the life history of a tree in its rings, glimpses of the life of the forest in summer and tells all the uses of a single log.

"Important Trees of Eastern Forests" is a booklet describing and illustrating the forest trees of Eastern United States.

"Your Wood Fact Book" is a booklet giving facts about the twelve most popular woods growing in the Appalachian mountain region from New York to Georgia.

"Appalachian Oak for Fine Cabinets" is a brochure describing the use of oak in cabinet making and the three typical finishes for oak cabinets.

"Here's How" is a set of plans for constructing various wood products suitable for the woodworking shop. The set also includes "The Use of Wood Screws" and "To Use Nails" that give information on how to use screws and nails and their sizes. Included in this set are plans too.

"Lessons in Appalachian Forestry" is a booklet prepared to give insight into what the forest is, how it grows, how it can be used to benefit man, and its relationship to the environment.

"Appalachian Hardwoods" gives technical descriptions of the characteristics, grading properties and uses of Appalachian oak, yellow poplar, hard maple, basswood and beech.

"Wood Sample Kit" includes 12 descriptive blocks of wood for display. Blocks measure 5 x 6 inches each and are made of the different woods which are described on the reverse side of the block as to areas

found, main uses, characteristics, etc. Titles are:

Appalachian Basswood or Linden Tree (*Tilia glabra*)

Appalachian Birch (*Betula lutea*)

Appalachian Black Cherry (Wild Cherry) (*Prunus serotina*)

Appalachian Black Walnut (*Juglans nigra*)

Appalachian Butternut (*Juglans cinerea*)

Appalachian Hickory (*Carya* sb.)

Appalachian Red Oak (*Quercus borealis*)

Appalachian Sugar Maple (*Acer saccharum*)

Appalachian White Ash (*Fraxinus americana*)

Appalachian White Oak (*Quercus alba*)

Soft Maple (Red Maple) (*Acer rubrum*)

Yellow Poplar or Tulip Tree (*Liriodendron tulipifera*)

These blocks are cut from natural wood, showing the grain and shade of each specimen. Fifth grade through adult level material is included. Kits are limited to one per school year. A charge is made for any additional block.

Bedford Lumber Company, Inc.

Bedford's "Cedar Furniture" catalog shows building kits for assembly including chests, bookcases and tables. Finishes and accessories are also offered.

Beloit Corporation, Jones Division

"Pulping in the Pulp", "Paper and Board Industry", "Refining in the Pulp", "Paper and Board Industry" are technical brochures on the pulp, paper, and board industry and are intended for classroom use.

### Boy Scouts of America

"Woodworking" \* is a merit badge book for a boy scout. It describes and gives helpful information on how to earn a merit badge in wood-working. The booklet is divided into five sections. The first chapter is on forests and lumber. The second covers the workshop and describes the use and care of tools. The third chapter gives several projects which can be made of wood. The fourth describes wood turning tools and wood turning operations. The last chapter discusses some of the opportunities for employment in the woodworking industry.

### Oak Flooring Institute

"Wood Floor Care Guide" is a comprehensive maintenance manual for hardwood flooring, types of finishes, and how to maintain them. Removal of stains is also discussed.

### Oklahoma State Department of Vocational and Technical Education

"Wood Materials" section of the catalog discusses wood structure, the growth of trees, the difference between hardwoods and softwoods and their uses, lumbering, grading, and how to purchase lumber.

### Frank Paxton Lumber Company

"Beautiful Woods" is designed to make available a collection of data on wood and lumber. This booklet gives the characteristics and a description of one hundred and twenty-five species of wood as well as information on grading, growth and manufacturing.

"How to Specify and Buy Industrial Arts Lumber and Plywood" is an outline in concise form on the several elements entering into the preparation of a requisition for lumber and related supplies. Descriptions of lumber and plywood are given. The species and grades recommended for elementary, intermediate and advanced students are listed.

#### Southern Forest Products Association

"Communications Catalog" is a guide to literature, audio-visual programs, merchandising aids and services for builders, architects, consumers and educators.

#### United States Government Printing Office

"Wood - Color and Kinds" \* describes thirty-two species of wood most commonly found in lumber markets. Full color illustrations of each species show grain patterns and other characteristics. To assist the reader in getting the utmost help from this booklet, the terms used in the descriptions are defined in a glossary.

"Technique of House Nailing" \* gives examples of nailing techniques to insure good sound construction and examples of when, where and how to use different sizes of nails.

"Use and Abuse of Wood in House Construction" \* points out good construction practices and gives the reader a basis for evaluating carpentry work and application of structural principles, as well as determining the quality of the wood used.

"Wood Decay in Houses" \* describes causes of wood decay, general safeguards to prevent decay, how to safeguard woodwork close to the

ground and parts of the house exposed to rain. Care of houses to stop ordinary decay and "dry rot" are also discussed.

#### Western Wood Products Association

"Product Information Literature" order form lists booklets containing ideas, plans, photos and technical information.

"Tree Farms of The Western Pine Region" describes tree farming in the western pine region and illustrates timber protection measures. It also has a fold-out tree identification chart which shows and describes the ten major tree species growing in the twelve state region.

"Wood Carving For Pleasure" \* deals mostly with sugar pine wood. Such things as principles to observe when carving in wood, tools and important types of wood carving are discussed and described. The five main kinds of carving discussed are scratch carving, chip, low relief, base relief and sculpturing.

"Wood Turning In The Home Workshop" \* deals mostly with ponderosa and types of wood turning are discussed. The types of wood turning discussed are spindle or cylinder, and face plate and chuck turning.

"Timber" gives facts and figures about the western pine region's timber supply. This folder opens into a wall chart to show and give the properties of ponderosa, sugar, Idaho white, and lodgepole pines, douglas and white fir, incense and inland red cedar, englemann spruce, and larch.

"Facts" is a series of folders which gives botanical classification, properties, uses, grading and distribution of the ten most important species of the western pine region. These species are ponderosa,

sugar, Idaho white and lodgepole pines, douglas and white fir, incense and western red cedar, larch, and englemann spruce.

Weyerhaeuser Company

"America's Green Gold" is a pamphlet telling the story of how wood grows and how we use it every day. The pamphlet also includes identification of several common conifers.

"Wood For The World Today and Tomorrow" is a booklet outlining the world's uses of wood now and the expected uses in the future.

Part C Plans

Plans are essential in order for students to undertake woodworking projects. This part presents information and plans which can be used in woodworking courses.

Adjustable Clamp Company

"Mitering and Veneering" shows and tells how to make miter clamps and veneer press frames for use in a shop.

Appalachian Hardwood Manufacturers, Inc.

"Here's How" is a set of plans for constructing various wood projects suitable for the woodworking shop. The set also includes "The Use of Wood Screws" and "To Use Nails" that give information on how to use screws and their sizes. Included in this set are plans to:

Make a Basketball Backboard

Make a Bed-Side Table

Make a Bunk Bed

Make a Christmas Card Display



Make a Coffee Table  
Make a Collapsible Sawhorse  
Make a Colonial Bench  
Make a Fireplace Bellows  
Make a Frame for Wall Charts  
Make a Garden Table and Bench  
Make a Garden Tool Bench  
Make a Gun Rack  
Make a Miter Board or Box  
Make a Modern Bed  
Make an Aquaplane  
Make a Portable Ice Box  
Make a Safety Swing  
Make a Sandbox  
Make a Seesaw  
Make a Student's Bookshelf  
Make a Table Desk  
Make a Telephone Wall Desk  
Make a Television Turn-Table  
Make a Tool Box  
Make a Tool Cabinet  
Make a Toy Chest Bench  
Make a Utility Step Ladder  
Make a Utility Step Stool  
Make a Valance Board  
Make a Wall Cabinet  
Make a Work Bench

Panel That Basement Room

Please That Man at Christmas

Use Nails

Use Wood Screws

Duro Metal Products Company

"Planning a School Shop" discusses the major objectives in planning a school shop. The shop should afford good industrial and practical educational experience with safety practices. It gives the basic principles of shop planning and the considerations that should be given to the selection of equipment.

Frank Paxton Lumber Company

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#### Wood Moulding and Millwork Producers

"How to Work With Wood Mouldings" is a brochure that goes step by step through all the basics of working with wood mouldings, including measuring, mitering, coping and splicing. The pamphlet also shows most standard profiles available, plus ideas on moulding uses.

"How to Finish Wood Mouldings" shows how to apply a professional looking finish; explains differences between paints, stains, clear finishes, and miscellaneous finishing products; illustrates how to finish new wood and covers tools needed, and cleanup.

"How-to-Make Picture Frames" shows how to make dozens of picture frames using standard mouldings; tells what tools to use; plus ideas on finishing, matting and hanging.

#### Part D Glues, Fasteners and Hardware

Information is presented in this part concerning methods of holding together wood projects by means of various materials. Information on different types and kinds of hardware which can be used to add beauty and stability to a project is also included.

##### Amsco Products

Amsco Products publishes a brochure that illustrates and describes various types of screws and bolts manufactured by Amsco and illustrates and describes standard tapping screw threads and heads.

##### Devcon Corporation

Devcon Corporation produces a wide variety of materials, including adhesives that can bond wood. Statistical information regarding this material is included in this catalog.

##### Northwestern Steel and Wire Co.

"Homeowner's Guide to Nails" is a booklet summarizing what you need to know about choosing and using nails. Included is information on

how to read nail sizes, picking the right size nail, and matching the nail to the job. Also included is information on the art of driving nails; how to make strong nail joints; nail types, sizes and counts; and a nail guage chart.

Oklahoma State Department of Vocational and Technical Education, Industrial Arts Catalog

"Plastics Materials" is a unit discussing the development of plastic materials, polymers, resins, reinforcing agents and their use in woodworking.

Rockford Products Corp.

Rockford's "Update, Volume I" supplies information about how bolts and other metal products are made by Rockford.

Rockford's "Technical Bulletin" gives information on methods and types of plating used on metals and gives comparisons.

Tower Manufacturing Co.

"Nails and Nailmaking--A Short History" is a brochure giving a short history of the development of the nail from 3400 B.C. to the present. Both cut nails and wire nails are considered. Included in this history of nails are illustrations showing nail sizes, kinds of shanks and points and kinds of nail heads.

Walnut Hollow Farm

Walnut Hollow Farm will send to industrial arts teachers upon request, their current catalog; pattern sheets for woodburning; instruction sheets for woodburning; clock making, oil color penciling

on wood; and a flyer explaining their supply kits designed for teachers.

#### Part E Finishing

The finish given to a project is said to be the "making" of the project. Without a good finish, the most beautiful wood project will be just another assembly of wood and fasteners. Some finishes and their application are listed below.

##### Beverly Manufacturing Company

"Famowood" describes an all purpose plastic wood filler that is applied like putty. The characteristics and application methods are given. Samples of fourteen matching colors are shown.

##### Beecham Home Improvement Products, Inc.

"Wood Treatment" is a brochure designed to help select and apply DAP wood treatment products. It suggests which product to use and provides some practical "how to" advice.

"Adhesive Selection and Use" is a brochure designed to help you select and use DAP adhesives for a variety of products.

"DAP Adhesives" is a brochure giving descriptions and uses of DAP adhesives.

Beecham also included leaflets giving descriptions, suggested uses, performance characteristics and surface preparation and application for adhesives including hobby and craft glue, carpenter's glue and construction adhesives.

M. L. Campbell Company

"How to Use Campbell Finish Repair Specialties" is an instruction book. The purpose of this book is to furnish information about how Campbell's products may be used in repair and touch-up operations and for refinishing.

"Ez-E Wood Stain and Seal" gives examples of stains and application instructions.

Deft, Inc. of Ohio

"Deft--The Wood Finish People" is a catalog listing and explaining the uses of Deft finishing products. Included in this catalog are instructions for finishing raw wood, finishing previously finished wood and refinishing wood originally finished with Deft. Also included are instructions for touching up scratches and nicks on surfaces.

General Finish Sales and Service Company

"Facts on Finishing Beautiful Woods" is a manual describing the methods of finishing wood with this company's products. The manual gives a step-by-step lesson on the use of Sealocell, Heavy Duty Arm-Seal, Varnowax and Royal Finish.

S. C. Johnson and Company

"Manual of Home Care" describes the company's polishes and waxes, using several charts illustrating which wax to use under certain conditions.

"Three Easy Recipes for Finishing Furniture" describes methods of



finishing new furniture and refinishing old pieces. It lists what is needed to finish wood with sealer and wax, shellac and wax, and stain shellac and wax.

"Furniture Waxing Guide" lists types of furniture surfaces and recommends the use of the best wax suited for each surface.

#### Johnson Wax

"Furniture Care" is a booklet illustrating and explaining furniture care including sections on special care for antiques; hiding scratches, spots, and other damages; refinishing; types of finishes, and care of finishes.

#### National Paint and Coating Association

"Finishing Hardwood Floors: is a booklet which points out detailed procedures and specified materials, which, when used as suggested, will result in a beautiful floor.

"Finishing Wood Furniture" outlines the procedures to be followed when applying finishes and the specific steps that must be taken, and also certain techniques that must be learned. It will also serve as a guide to do it yourselfers who are interested in finishing unpainted furniture, as well as to those who would like to re-finish some old, previously finished pieces. "To The Finish" describes how to finish unfinished furniture. It lists the equipment and materials used to finish furniture in several different styles.

"The Romance of Shellac" is the history of shellac. The booklet tells how shellac was first discovered, its origin, how it is processed and how it is used.

Norton Company

Norton's "From Stock to Finish" is a brochure designed to help understand the Norton line of abrasive products and how they fit into each stage of furniture production. Information in each section includes general production information; a detailed description of Norton products which apply to this area; a performance guide, to aid in selecting the right product; and a brief tip to improve an operating procedure.

Oak Flooring Institute

"Hardwood Flooring Finishing/Refinishing Manual" describes methods and products that will give a beautiful, lasting finish to oak and other hardwood floors, and restore the beauty to old hardwood floors.

Oklahoma State University

"Furniture Restoration" is a textbook on the way of restoring old furniture. The booklet is divided into four parts. The first covers restoring old finishes. Part two covers removing old finishes and equipment needed to do so. Part three describes the methods of preparing the wood for finishing. The last part explains how to apply the finishes and some of the results obtained.

Rust - Oleum Corporation

"How to Beautify and Protect Metal" is a booklet describing how to prepare the surface of rusted metal and the tools and steps needed to remove rust, and repaint metals.

"Rust-Oleum Primers and Topcoats" is a brochure showing colors and special use paints offered by this company.

Star Bronze Company

"Refinishing and Finishing" is a guide to finishing and refinishing wood products. This guide contains information on paint, varnish and stain removers, refinishing with removers, staining, and wood finishes in addition to other information. Also available are brochures on finish removers, wood preservatives, clear wood finishes, and brush cleaners.

Wilson-Imperial Company

"Refinishing" \* is a complete guide on the latest and best methods in refinishing. It illustrates and describes how to remove paint, varnish, and enamel; how to prepare the surface for refinishing and how to refinish furniture and floors.

William Zinsser and Co.

"How and Where to Use Bulls Eye Shellac" is a pamphlet giving detailed information on how to apply shellac for different types of finishes. Also included are applications and functions of shellac.

"Shorten Your Painting Time" is a pamphlet giving the where and why for using B-I-N Primer-Sealer.

Part F Safety

One of the most important parts of the educational program a teacher must develop is safety. With the many machines and tools that students

use in woodworking, a safety program is essential. This part lists some of the material offered on safety.

Frank Paxton Lumber Company

"Safety Rules" is a booklet covering the safe operation of power tools used in woodworking shops. The safety program suggested is used by one of the large trade shops in the middle west. Safety rules are listed and discussed for the following machines: band-saw, circular saw, drill press, grinder, jointer, lathe, shaper and sander.

"Woodworking Guidelines" is a booklet produced for the employees of the Frank Paxton Lumber Co., in an effort to show safety rule guidelines to reduce carelessness and accidents.

Oklahoma State Department of Vocational and Technical Education

"Accident Prevention" is a unit in the Industrial Arts Catalog which suggests policies and procedures that may be adapted in any industrial arts or trade and industrial education program for the purpose of organizing and administering a program of shop safety. Section I of the guide consists of general requirements for establishing a safety program. Topics in this section range from safety and health concerns, facilities, eye safety, and accident-reporting to acknowledgment of safety instruction and a safety pledge. Section II outlines a program of safety instruction and presents a safety inspection checklist. Section III stresses specifics--machine and tool safety and materials-handling. Sections IV through VI consist of lesson plans and instructor's guide sheets, tests, and a bibliography.

## Part G Miscellaneous

Part G itemizes and describes material which did not fit into the previous categories. Most of the materials listed are catalogs from lumber companies followed by a list of films on safety.

Brodhead Garrett Company

The 1985 "Catalog" lists the equipment and supplies for use in industrial arts, vocational education and crafts. Such items as lumber, drawing supplies, printing supplies, tools, machines, paper, and other shop equipment are included.

Vaughan and Bushnell Manufacturing Co.

"Hammer Safety Rules" is a posting chart explaining with illustrations safety rules while using a variety of hammer types.

"Hand Tool Reference Chart" is a wall chart illustrating and explaining the right and wrong uses of a wide variety of hand tools and shop equipment.

Vaughan and Bushnell also has available a catalog showing hammers, hatchets, pry bars, punches, chisels and other tools. Descriptions and illustrations and safety tips are also given.

## Films

From the Media Resource Center, State Department of Education, Oklahoma City:

Safety in the Shop: Basic Practices

This film emphasizes the worker's responsibility for safety in using

hand and power tools in both wood and metal shops. The film shows the importance of proper clothing, safe ways to lift and carry and ways to guard against possible fires.

Safety in the Shop: Hand Tools

Emphasis is on the importance of protective clothing and demonstrations regarding the safe use of the forge and welding equipment.

Safety in the Shop: Power Tools

The film stresses common sense practices with power saws, lathes, and other woodworking and metal working machine tools, proper clothing, adjusting machine before starting and dealing with broken blades.

From the Oklahoma State University Film Library in Stillwater, Oklahoma:

Safety with Electricity

The film shows simple experiments and demonstrations about the nature and sources of electricity and illustrates desirable practices with electrical equipment and appliances.

## CHAPTER 3

### CONCLUSIONS AND RECOMMENDATIONS

This report was compiled to provide industrial arts teachers with pertinent free and inexpensive teaching materials to supplement classroom instruction in the woodworking area. It was realized that adequate information needed to be listed in an easily accessible source in order to provide teachers with material to help improve various areas of classroom instruction.

It is not possible to gather and present all the information concerning free and inexpensive teaching materials in this area, but an effort was made to present a wide variety on pertinent subjects.

A need still exists for more detailed and scientific study and evaluation of materials which is not covered in this study. Such an undertaking would involve considerable expense and would require many hours of research.

#### Conclusions

Due to the present shortage of qualified teachers and the emphasis on better quality of teaching methods, there is a need for teaching aids. These aids may be in the form of material that the students can use or may be material to advance the teacher's knowledge. Most teachers continually seek to improve teaching methods and upgrade skills.

Teaching materials should be reviewed yearly and revised to fit in

with new methods and techniques being developed.

Most companies will send current information regarding their products. They realize the importance of new materials and methods and will gladly pass the information on to teachers who requested on official stationery. Most companies will send 25 copies of booklets without cost.

#### Recommendations for Further Study

A research study of all the free and inexpensive teaching material available would be of value. This study would require an intense effort to obtain names of companies which would supply information. The need exists for more information which will help students achieve desired goals. When further study is undertaken, the following factors should be considered: the quality of the material, the adaptability of the material, the validity of the material, and the importance it will have in the teaching situation. Another factor to consider is the cost of the material if it is not free.

An effort has been made to assemble all available material on the subject of free and inexpensive teaching material for the woodworking teacher. This study can be used by both teachers and students and should contribute to their knowledge of woodworking. A continuing search of available information should help increase the quality of instruction and learning.



A SELECTED BIBLIOGRAPHY

Educators Guide to Free Films: Randolph, Wisconsin, Educators Progress Service, Inc., 1980, 787 pages.

Film Catalog: Stillwater, Oklahoma, Oklahoma State University, Audio-Visual Center, 1983-86, 231 pages.

Film Catalog: Stillwater, Oklahoma: State Department of Vocational and Technical Education, 1982, 59 pages.

Film/Filmstrip Catalog: Oklahoma City, Oklahoma State Department of Education, 168 pages.

Free and Inexpensive Teaching Material for the Woodworking Teacher, Stillwater, Oklahoma, Jackie F. Fischer, 1963, 43 pages.

Outstanding Free-Loan 16 mm Sound Films for Schools: St. Petersburg, Florida, Modern Talking Picture Service, 1984, 6 pages.

APPENDIX A

RESPONDENTS WHO OFFER TEACHING MATERIAL

- Abernathy Vise and Tool Company, 132 W. Home Avenue, Villa Park, Illinois 60181.
- Adjustable Clamp Company, 417 W. Home Avenue, Villa Park, Illinois 60622.
- American Plywood Association, P.O. Box 11770, Tacoma, Washington 98411-0700.
- American Wood Council, 1619 Massachusetts Avenue, N.W., Suite 500, Washington, D.C. 20036.
- Amsco Products, Camcar Division of Textron, Inc., 345 East Marshall St., Wytheville, Virginia 24382.
- Appalachian Hardwood Manufacturers, Inc., P.O. Box 427, High Point, North Carolina 27261.
- Bedford Lumber Company, Inc., P.O. Box 65, Shelbyville, Tennessee 37160.
- Beecham Home Improvement Products, Inc., P.O. Box 277, Dayton, Ohio 45401.
- Beverly Manufacturing Company, 9118 South Main Street, P.O. Box 73233, Los Angeles, California 90003.
- Black and Decker, 701 East Joppa Road, Towson, Maryland 21204.
- Boy Scouts of America, New Brunswick, New Jersey 08900.
- Brodhead-Garrett Company, 4560 East 71st Street, Cleveland, Ohio 44105.
- M. L. Campbell Co. 2909 Chrysler Road, Kansas City, Kansas 66115.
- Columbian Vise and Manufacturing Company, 9021 Bessemer Avenue, Cleveland, Ohio 44104.
- Deft, Inc., 411 E Keystone Ave., Box 1476, Alliance, Ohio 44601.
- Desmond-Stephan Manufacturing Company, 317 South Walnut Street, Urbana, Ohio 43078.
- Devcon Corporation, Endicott Street, Danvers, Maryland 01923.

DeVilbiss Company, P.O. Box 913, Toledo, Ohio 43600.

Duro Metal Products Company, 2649-59 North Kildare Avenue, Chicago, Illinois 60639.

General Finish Coating Association, 1548 West Bruce Street, Milwaukee, Wisconsin 53204.

Greenlee Tool Company, 2136 12th Street, Rockford, Illinois 61100.

The Irwin Company, Wilmington, Ohio 45177.

S. C. Johnson and Son, Inc., Racine, Wisconsin 53400.

Johnson Wax, Racine, Wisconsin 53403-5011.

National Paint and Coating Association, 1500 Rhode Island Avenue, N.W. Washington, D.C. 20005.

Northfield Foundry and Machine Company, Northfield, Minnesota 55057.

Northwestern Steel and Wire Company, 121 Wallace Street, Sterling, Illinois 61081.

Norton Company, Troy, New York 12181.

Oak Flooring Institute, 804 Sterick Building, Memphis, Tennessee 38103.

Oklahoma State Department of Education Media Resource Center, 2500 North Lincoln, Oklahoma City, Oklahoma 73105.

Oklahoma State Department of Vocational and Technical Education, Curriculum Instructional Materials Center, 1500 West 7th Avenue, Stillwater, Oklahoma 74047 Attention: Film Library.

Oklahoma State University, Extension Service, Stillwater, Oklahoma 74074.

Oklahoma State University Film Library, Stillwater, Oklahoma 74074.

Oliver Machinery Company, Woodworking Division, Grand Rapids, Michigan 49500.

Frank Paxton Lumber Company, P.O. Box 82215, 1815 S. Agnew, Oklahoma City, Oklahoma 73148.

Powermatic-Houdaille, Inc., Dept. 6, McMinnville, Tennessee 37110.

Rockford Products Corporation, 707 Harrison Avenue, Rockford, Illinois 61108-7197.

Rust Oleum Corporation, 11 Hawthorn Parkway, Vernon Hills, Illinois 60061.

Skill Corporation, Department 141 J, 5033 Elston Avenue, Chicago, Illinois 60630.

Southern Forest Products Association, P.O. Box 52468, New Orleans, Louisiana 70152.

Stanley Tools, 7211 Elm Street, New Britain, Connecticut 06050.

Star Bronze Company, P.O. Box 2206, Alliance, Ohio 44601-0206.

L. S. Starrett Company, Department C E, Athol, Massachusetts 01331.

Tower Manufacturing Company, Madison, Indiana 47250.

United States Government Printing Office, Division of Public Documents, Washington, D.C. 20000.

Vaughan and Bushnell Mfg. Company, 11414 Maple Avenue, Hebron, Illinois 60034.

The Vermont American Tool Co., Lincolnton, North Carolina 28093-0340.

Walnut Hollow Farm, Route 2, Dodgeville, Wisconsin 53533.

Warren Tool Group, P.O. Box 68, Hiram, Ohio 44234.

Western Wood Products Association, 1500 Yeon Building, Portland, Oregon, 97204.

Weyerhaeuser Company, Tacoma, Washington 98477.

Wilson-Imperial Company, 115 Chestnut Street, Newark, New Jersey 07105.

Wilton Corporation, 3005 Hicks Road, Palatin, Illinois 60067.

Wood Moulding and Millwork Producers, P.O. Box 25278, Portland, Oregon 97225.

William Zensser and Co., Inc., 39 Belmont Drive, Somerset, New Jersey 08873.

APPENDIX B

LETTER OF INQUIRY SENT TO PRODUCERS OF TEACHING MATERIALS

# Morrison Public Schools

P. O. Box 176 405 724-3341

Morrison, Oklahoma 73061

DR. FRED McBRIDE, Superintendent

JOHN CHATBURN  
Jr. H/HS Principal  
405-724-3307

CHARLOTTE CHATBURN  
Elementary Principal  
405-724-3620

September 24, 1985

Dear Sir:

In 1963 a report was written by Jakie F. Fischer entitled, "Free and Inexpensive Teaching Material For Woodworking Teachers", in partial fulfillment of the requirements for the degree of Master of Science at Oklahoma State University.

I am attempting to update this report for my degree of Master of Science at Oklahoma State University.

I would appreciate your sending any material offered by your company that could be included in this report including charts, graphs, and catalogs.

Thank you,

John Chatburn  
P. O. Box 71  
Morrison, Oklahoma 73061

JC:lh

VITA

John Vard Chatburn, Jr.

Candidate for the Degree of

Master of Science

Report: FREE AND INEXPENSIVE TEACHING MATERIAL FOR WOODWORKING  
TEACHERS--AN UPDATE

Major Field: Industrial Arts Education

Biographical:

Personal Data: Born in Minidoka, Idaho, April 19, 1933, the son of  
J. Vard and Eva Chatburn. Married to Charlotte A. Cotton on  
December 29, 1956.

Education: Graduated from Albion High School, Albion, Idaho, in  
May, 1951; attended Idaho State College, Trade and Industrial  
Education, Pocatello, Idaho, January, 1952 to May, 1953; re-  
ceived Associate of Science Degree in Civil Engineering from  
Boise Junior College in May, 1957; received Bachelor of Science  
Degree in Industrial Arts Education from Oklahoma State Uni-  
versity in May, 1960; completed requirements for the degree of  
Master of Science in Industrial Arts Education at Oklahoma  
State University in December, 1985.

Professional Experience: Served in U. S. Army, June, 1953, to May,  
1955; Teacher, Mathematics Department, Morrison Public Schools,  
August, 1960, to May, 1961; Teacher, Mathematics Department,  
Rupert Junior High School, Rupert, Idaho, August, 1961, to May,  
1962; Teacher, Industrial Arts Department, Morrison High School,  
Morrison, Oklahoma, August, 1962, to present; Teaching Princi-  
pal, Morrison High School, Morrison, Oklahoma, August, 1970, to  
present.