A SURVEY OF UNIT SEWING CENTER EQUIPMENT WITH APPLICATION TO A GIVEN CLOTHING LABORATORY FLOOR PLAN

By

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CHAPTER I

INTRODUCTION

The trend in modern homemaking is toward the organization of work centers for the purpose of reduction of time and effort. However, it seems that only within the last ten or eleven years this principle has been applied, to any great extent, in the planning of a clothing laboratory. Research has shown that distance traveled, steps taken, time spent in travel, and orderliness were definitely affected by the arrangement of major equipment in the clothing construction process.[1]

Purpose of the Study

Since the author has an immediate need for the development of an organized plan for her laboratory, an attempt has been made to become familiar with: (1) unit sewing center equipment available on the market, (2) how satisfactory this equipment has been when used by others, (3) clothing construction teacher's preferences and opinions about unit sewing center equipment and its arrangement, and (4) new ways to change a specific floor plan so that it will become more effectual. Many high school teachers and supervisors as well as college personnel have also expressed a desire for more information in these areas. Other equipment useful and/or necessary in a clothing laboratory was also surveyed. The cost of equipping a unit sewing center was investigated.

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[1]Marjorie Prior Bennion, "An Evaluation of a Proposed Unit Arrangement for the College Clothing Laboratory" (unpublished Master's thesis, College of Home Economics, Utah State Agricultural College, 1950), p. 47.

The author wishes to state that she by no means claims to have covered every type of unit sewing center equipment available. Rather, this problem is an assemblage of the information she could obtain into one source which she hopes will be of benefit to others who anticipate room changes.

Definitions of Terminology

The terms used throughout this study have the following meanings:

Self-Contained Unit Table. A unit containing an ironing board and all necessary pressing equipment, sewing machine, cutting and working space, and storage of all items.

Unit Table. A unit incorporating only some of the above mentioned features. It may contain cutting and working space and a sewing machine but no pressing or storage facilities.

Unit Arrangement. Separate traditional laboratory equipment, i.e., sewing machine, all-purpose table, and pressing equipment organized in one area.

Unit Sewing Center Equipment. This refers to an organized plan and may include any or all of the three types defined above.

Group Arrangement. This arrangement has the sewing machines placed along a wall, usually near the windows, tables in the center of the room, and pressing equipment located at various places in the room.

Tote Tray or Tote Drawer. A portable drawer-like container for student's sewing supplies.

Clothing Laboratory. A separate or special purpose room where only subjects related to textiles and clothing construction, selection, and maintenance are taught.

All-Purpose Room. A room where many phases of the homemaking program are studied.

CHAPTER II

REVIEW OF LITERATURE

Home economics offerings from the very beginning have included work in clothing and textiles at each educational level. Rathbone and Tarpley are of the opinion that clothing construction courses contribute toward an individual's ability to ". . . acquire and use the skills and habits involved in critical and constructive thinking."[1] If students are to learn up-to-date homemaking methods, it is apparent that the school laboratories need to be equipped with modern appliances. One of the conclusions reached as the result of a panel discussion held at the 1957 American Home Economics Association Convention was that students displayed a greater interest and enthusiasm for home economics when the laboratory was attractively furnished with up-to-date equipment.[2]

Development of Unit Sewing Center Equipment

Home economics is in an area that grows and changes rapidly so that lag between theory and practice is evident. However, there is probably more lag in the matter of sewing equipment than there needs to be. Although modern methods in clothing construction have gone swiftly forward, physical facilities have not kept pace.

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[1]Lucy Rathbone and Elizabeth Tarpley, "Student and Teacher Cooperation in Clothing Construction Courses," Journal of Home Economics, XLIV (February, 1952), 101.

[2]Julia Kiene, "Keeping Laboratories Up to Date," Journal of Home Economics, XLIX (November, 1957), 700.

Friesen notes that the ultra modern kitchen of the average home and the average home economics clothing laboratory have little in common.[1] Equipment specialists and Home Economists have experimented extensively to determine the most satisfactory kitchens with work center arrangements that conserve time and energy as well as emphasize convenience, comfort, and beauty. These changes have brought a gradual development of efficiency in the home, school, and business. Unfortunately, this trend toward efficiency has by-passed the clothing laboratories. There are still many high schools and colleges using dark, outmoded sewing rooms. An article written in 1952 pointed out that the unit grouping of equipment was only beginning to be put into effect for the clothing construction classroom even though it had long been advocated for efficiency in the home.[2]

Although a stronger impetus for organized sewing centers was felt in the early fifties, Cushman stated in 1929 that, ". . . centralizing the sewing equipment cut down the distance traveled to a large degree, simplified the procedure, and took away many of the disagreeable features of sewing."[3] Three definite trends in teaching were observed by Linn in 1950: (1) streamlining the sewing process and at the same time producing a better product, (2) encouraging the proper use of equipment and the organization of sewing centers, and (3) developing the individual.[4]

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[1]Maria S. Friesen, "Modern Sewing Methods vs Antiquated Labs," Forecast for Home Economists, LXXII (June, 1956), 31.

[2]"The Clothing Area of the All-Purpose Room," What's New in Home Economics, XVI (May, 1952), 96.

[3]Ella M. Cushman, Organization of the Sewing Center in the Home, Cornell U. Agricultural Experiment Station, Ithaca, New York, Bull. 492, (August, 1929), p. 17.

[4]Alice Linn, "Trends in Teaching Clothing," Practical Home Economics, XXVIII (September, 1950), 331, 362.

This same year Bennion conducted a study of different arrangements of equipment. Six tests made in each arrangement proved that the distance traveled, the steps taken, and the time spent in travel was definitely affected by the arrangement of the major pieces of equipment used in the clothing construction process.[1] The seventeen students who worked in the unit arrangements were questioned as to their preference for the group arrangement versus the unit arrangement. Bennion reported:

> The opinions stated in the questionnaire were an indication that the greater value of the unit arrangement may be that it reduces confusion, tensions, and frustrations, and increases satisfactions, orderliness, responsibility, and ease of learning.[2]

A study by Sullivan in 1951 to determine types of sewing activity that takes place in the home found the following causes of dislike for sewing mentioned by 53 per cent of the women queried: (1) scattered sewing equipment, (2) equipment and supplies not best suited to purpose, (3) poorly finished products due to inconvenient working conditions, (4) time required to get work out and put it away, and (5) fatigue caused by improper working heights.[3]

Although teachers were concerned about their outmoded laboratories, they continued to use them. Manufacturers did nothing about improving their equipment because clothing teachers had not demanded a change.

In 1951, Stout Institute, Menomonie, Wisconsin (now known as Stout State College), designed an organized unit which appears to be the most complete application used by a school up to that time.[4]

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[1]Bennion, 47.

[2]Ibid., 65.

[3]Kathleen Andrea Sullivan, "The Development of Several Home Like Sewing Centers in a High School Classroom" (unpublished Master's thesis, Pennsylvania State College, 1951), p. 12.

[4]M. Frances Henry, "Facilities for Teaching Clothing and Grooming," What's New in Home Economics, XVI (June, 1952), 79.

This self-contained unit table was the result of one hundred and forty teacher responses to a questionnaire. Over 60 per cent of the teachers believed that the unit arrangement of a clothing laboratory would improve efficiency in regards to "waits" for equipment. The same number believed the general speed of construction would be improved, and nearly 90 per cent felt that room traffic would be decreased.[1] The Hamilton Manufacturing Company now manufactures a product called the "Stout Sewing Table." (See Appendix II for names and addresses of companies manufacturing unit equipment.)

A co-operative effort between a home economics teacher and a manufacturer frequently results in space-saving equipment designed to meet the special needs of the modern clothing laboratory. One example of this is the "Contour Unit" developed in the early fifties by Ritta Whitesel, Associate Professor of Clothing and Textiles at Southern Illinois University, and the St. Charles Company.[2] This company now prefers to make custom units.

Mrs. A. Dee Glover, a homemaking teacher in Elgin, Texas, told her husband of the problems of work space, storage, and general confusion of equipment. With his wife he developed plans for the "Glover Homemaking Unit," which is now manufactured for national distribution.

Other unit sewing center equipment has been designed jointly by architect, cabinet maker, and homemaking teachers.[3] Many have special features. For example, the unit designed by South Dakota State is constructed so that the whole working surface is adjustable in height.

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[1]Alice Kirk, "Improved Clothing Laboratories," Journal of Home Economics, XLIII (June, 1951), 427.

[2]"Sewing Units," Practical Home Economics, XXXII (February, 1954), 28.

[3]Lucy McCormack, "Efficiency Built In," Journal of Home Economics, L (June, 1958), 414.

Mary Mark Sturm, Director of the Bureau of Home Economics of the Chicago secondary schools, has designed a cutting table equipped with pressing centers at either end. It also has an open space on one side for cutting and marking equipment.[1]

At least twenty-two different models of self-contained and unit tables were in use or about to be placed on the market when Johnson made her study in 1956.[2] These included both commercial and original designs.

Progress has been made. In 1948, a new homemaking department displayed unit kitchens but planned to use some treadle machines.[3] In 1958, a new department announced that all their equipment was built-in, including the sewing machines.[4]

Home economics will continue to occupy an important place in the offerings of secondary schools during the sixties.[5] It is imperative that the physical facilities keep in step with the modern trends in clothing construction. If students are to retain their interest and do a job well, up-to-date equipment should be provided and properly arranged.

Clothing Laboratory and All-Purpose Room

Little evidence was found in literature to support the author's belief that unit sewing center equipment can be used effectively in an all-purpose room.

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[1]Mary Mark Sturm, "Modernizing Clothing Laboratories," Practical Home Economics, XXXII (February, 1954), 30.

[2]Muriel Johnson, "Unit Tables for Clothing Laboratories," Journal of Home Economics, XLVIII (February, 1956), 91.

[3]Helen Beranek, "Setting Up a Homemaking Department," Forecast for Home Economists, LXVI (October, 1950), 18-19.

[4]Bridget Weston, "Planned for Present and Future," Forecast for Home Economists, LXXIV (March, 1958), 17.

[5]"Home Economics Education," American Vocational Journal, (March, 1960), p. 10.

It was pointed out that more research is needed on space, equipment, and arrangement for this type of room.[1] Johnson found that the type of unit arrangement where the separate machine can be located near a movable table with adjacent pressing equipment can be used for any age student and in any laboratory, all-purpose or clothing.[2] Where enrollment is high and classes are large, separate rooms especially equipped for teaching one phase of homemaking best serve the purpose. Lee points out that these special purpose laboratories will require the maximum amount of equipment because each student will be participating in the same activity at about the same time.[3]

Teacher Demonstration Area

The teaching center, although often neglected, should occupy a prominent spot in the laboratory and be as compact as possible.[4] Demonstration is a popular and accepted way of teaching home economics. The author is extremely interested in a teacher demonstration area because it requires less individual instruction in large clothing construction classes and facilitates learning from the standpoint of time.

Jones's study of demonstration units provides valuable information.[5] She found that either the straight or the parallel arrangement of

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[1]"The Clothing Area of the All-Purpose Room," What's New in Home Economics, XVI (May, 1952), 98.

[2]Muriel Helen Johnson, "An Investigation and Comparison of Some Self-Contained Unit Clothing Tables" (unpublished Master's thesis, New York State College of Home Economics at Cornell University, 1956), p. 81.

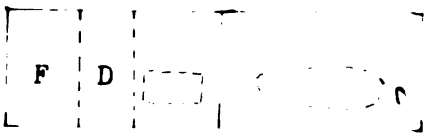
[3]Ata Lee, Space and Equipment for Homemaking Programs, Misc. No. 9, U.S. Government Printing Office, Washington 25, D.C., 1950, p. 1.

[4]Una Dowds Fowler, Planning and Using Storage for Effective Teaching in Homemaking, Dept. of Home Economics, National Education Association, Bulletin 1956, p. 3.

[5]Elizabeth Mohr Jones, "An Analysis of Demonstration Units for Teaching Clothing Construction" (unpublished Master's thesis, Purdue University, 1955), pp. 48-53.

PLATE I

TEACHER DEMONSTRATION UNITS[1]



STRAIGHT UNIT

Symbols used:

PRESSING BOARD

SEWING MACHINE

IRON

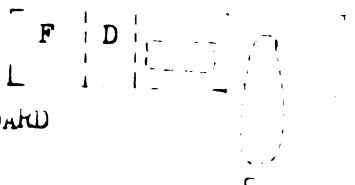
B. B. BULLETIN BOARD

C. B. CHALK BOARD

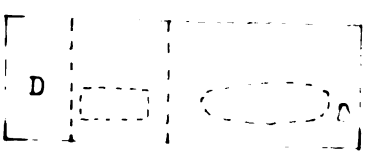
L. LAVATORY

D. DRAWERS FOR SMALL EQUIPMENT AND SUPPLIES

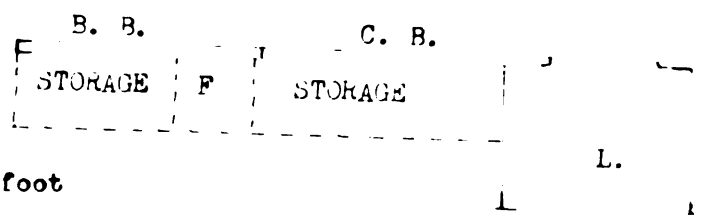
F. FILE



RIGHT L-SHAPE UNIT



PARALLEL UNIT



1/4 inch = 1 foot

[1] Elizabeth Mohr Jones, "An Analysis of Demonstration Units for Teaching Clothing Construction", (Unpublished Master's thesis, Purdue University, 1955), pp. 21, 30.

equipment would be satisfactory plans for a clothing demonstration unit and would be superior to the L-shape (see Plate I, page 9). The parallel unit was not significantly different from the straight unit in the time consumed while demonstrating and was only slightly superior in audience visibility. Three feet was found to be a sufficient distance between the work area and the bulletin board, chalk board, and lavatory. Jones suggests that the prime concern, however, should be a convenient arrangement of equipment.

Other Areas in the Clothing Laboratory

The tendency today seems to be to omit the separate fitting room because: (1) demonstrations of fittings are recognized as an important teaching device and have value for an entire class and should be seen by all members, and (2) such rooms require space which is not used enough to justify it.[1] Lee also suggests that a triple mirror on a stand with casters is desirable for fitting because it can be moved into any position in the room. Probably the simplest and least expensive way to gain privacy for changing garments is to use one or two movable screens. Specifications for making a folded screen are obtainable.[2]

Provision should be made for storage of the books and items carried by students from class to class, so that they do not take up table space. Some ways to handle this are: (1) open shelves near the entrance door, (2) a drawer or shelf in the sewing unit, or (3) a shelf under the chair. It has been noted that the use of the shelf in the tote drawer cabinet creates confusion and congestion at the end of the class period.[3]

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[1]Lee, 31.

[2]Ibid., 30.

[3]"Setting for Teaching Clothing in High School," What's New in Home Economics, XXIII (February, 1959), 84.

Guides in Planning

Lee has offered several suggestions to serve as guides while planning for equipment: (1) the majority of women can work comfortably at a table if the thickness of the table top plus the width of the apron is kept to a maximum of three and one-half inches, (2) the chair height should be twelve inches lower than the table for high school pupils, and (3) the maximum class size preferred by most administrators and teacher trainers is twenty-four pupils.[1]

In conclusion, Alexander states, "Today's schools reflect the belief that simple, attractive, up-to-date equipment and furnishings can encourage pupils to want to make improvements in their own homes."[2]

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[1]Lee, 30-31.

[2]Margaret Alexander, "Trends in Homemaking Education in the High Schools of Today," Journal of Home Economics, XLVII (October, 1955), 580.

CHAPTER III

PROCEDURE

This is an exploratory study with major emphasis on the accumulation of information pertaining to unit sewing center equipment. The data were secured by means of observations and interviews, correspondence, and a questionnaire. A floor plan of the author's classroom was obtained. New floor plans were drawn incorporating the data secured from the media mentioned above. A rating sheet was developed to be used by a panel of judges in evaluating the present and the proposed floor plans. A panel of judges was secured.

Observations and Interviews

An observation and interview record sheet was formulated and pretested in a local high school. A few minor revisions were then made to facilitate its use (see Appendix I).

Eleven high schools in Illinois, Indiana, and Michigan were visited during the month of March, 1961. These schools were chosen because of their new departments, type of equipment, or proximity (see Appendix II for a list of schools visited).

Clothing construction classes working with both the group arrangement of equipment and unit sewing center equipment were observed. Questions were asked of the teachers and of the students. Also, colored slides of an all-purpose room were viewed.

The knowledge gained through these visits served mainly as background for the study. The findings will be discussed briefly.

Correspondence

Fifty-six personal letters were sent to manufacturers, retailers, secondary school and college personnel in regards to unit sewing center equipment. A great deal of co-operation and valuable information was received from the majority of those who responded. Much of this data was used to compile Tables I and II (see pages 23 and 28), and to evolve the new floor plans.

The Questionnaire

A questionnaire was developed to be completed by clothing construction teachers working with unit sewing center equipment. Questions were formulated relevant to the objectives. The questionnaire was pretested by two clothing construction consultants with teaching backgrounds, and by one college teacher and one high school teacher. The content remained the same but the order was revised for clarity (see Appendix I).

Names of clothing construction teachers using unit sewing center equipment were obtained from: a State Director of Vocational Education, a State Supervisor of Home Economics Education, a Director of a Bureau of Home Economics of city secondary schools, a manufacturer, college faculty, and from literature.

Both secondary school teachers and college teachers were included in the sample for several reasons: (1) the author teaches in a clothing laboratory which is similar to college room specialization, (2) considerable interest was expressed at both levels when they learned of the study, (3) college personnel could be readily contacted and would be more likely to have unit sewing center equipment, and (4) the size of the sample could be increased.

Thirty-seven questionnaires with a cover letter were distributed to clothing construction teachers attending a State Home Economics

Convention the second week-end in April, 1961. Sixty-three questionnaires with a cover letter were mailed and collected during the last two weeks of April and the first two weeks of May, 1961. All the questionnaires were not mailed at one time. As the investigator secured additional names, more questionnaires were distributed until a total of one hundred was reached.

A total of 44 per cent of the questionnaires were returned. Eleven per cent were not usable because they were incomplete, or the teachers were not working with unit sewing center equipment. A total sample of thirty-three was obtained.

Some of the data collected was used in the compilation of Tables I and II, and the material in Chapter V. The remainder of the questionnaire was analyzed in accordance with the objectives.

Evaluation of the Floor Plans

A rating sheet was formulated to be used by a panel of judges in evaluating the proposed new arrangements of equipment in the author's classroom (see Appendix I). The present arrangement was also rated and served as a basis for comparison. An explanation sheet describing structural changes and physical limitations in the proposed plans was developed to accompany the plans as they were being evaluated.

However, more guidance could have been given in the explanation sheet such as: (1) a more complete definition of the rating scale terms; (2) a list of the controls, i.e., an equal number of sewing machines in each plan; (3) a list of the variables--the number of pressing boards and irons, the amount of cutting space, and the expense involved with each proposed plan; and (4) a statement that the machines in the group arrangement plan were illustrated with the leaves closed (see Appendix I).

A panel of judges was secured and was composed of the following members: a Head of a University Textiles and Clothing Department, a City Co-ordinator of Home Economics of secondary schools, and three secondary school home economics teachers.

Photostatic copies of the floor plans, the explanation sheet, and the rating sheets were distributed and collected during the first week of July, 1961.

CHAPTER IV

DISCUSSION OF OBSERVATIONS AND INTERVIEWS

The author visited eleven high schools in order to: (1) become more familiar with unit sewing center equipment, and (2) note any differences between the classes using a unit sewing center arrangement or a group arrangement of equipment.

Characteristics of the Schools Visited

Two of the schools were occupied within the last year or two. Three schools had been recently remodeled, and three were new within the past six years.

The number of students in the classes visited varied from fourteen to thirty-two with the average class size approximately twenty-three students.

The level of classes ranged from junior high (seventh grade) to the senior year in high school.

The length of the classes also varied. The shortest period was forty-five minutes. Seventy minutes was the longest period and was found in only one school. Fifty-five minutes appeared to be the most common period length.

Observation Findings

Type and Arrangement of Equipment

Two of the schools were equipped with self-contained unit tables manufactured by the Hamilton and Mutschler Companies. One remodeled

school contained Geneva unit tables. In these schools the rooms were used only for clothing courses.

The unit arrangement was utilized by two schools. Both of these rooms were used for other subjects in addition to clothing construction. The larger of the two had complete sewing center units located in each corner of one-half of the room. One unit illustrated a sewing center combined with a living room (small house type), one unit represented use in a bedroom, and another showed how a sewing center can be utilized in a laundry or utility room. The fourth unit was the "professional corner" with a quadruple mirror and the other "extras" needed by the more advanced students. Roll-up wooden slat screens and mirrors on the insides of cabinets or closet doors formed fitting areas when needed. Slides of this room have been developed by Mrs. Dorothy Clark, the instructor and planner, and are available on loan (see Appendix II).

One room was used to teach all phases of the homemaking program simultaneously. The built-in sewing machines were pulled out and raised up mechanically from under a wall counter. The pressing was done on the counter top. Cutting and work space were available at a nearby table. Five to eight girls participated in clothing construction while the remainder of the class studied other areas of homemaking.

Two new schools with group arrangements taught clothing construction plus other homemaking courses. Although the kitchen areas in these schools were planned for the utmost in efficiency, the organization of the sewing activity had been neglected. A great deal of movement from one work area to another was necessary.

The remaining schools were equipped with the group arrangement and were used only for clothing courses. The sewing machines were in separate cabinets placed along the walls or stored under wall counters. In others, the built-in sewing machine heads were pulled out and raised up mechanically from under wall counters. In some cases, machines

were assigned by student choice and were often on the opposite side of the room from their table space.

Tables

Table size varied. One teacher felt a 30" x 60" table was too small. Another stated that a 42" x 60" size was adequate.

Most of the tables which were not the self-contained type had runners underneath for the tote drawers.

Formica or other laminated plastics were the most common table surfaces. A pressed wood table top was not satisfactory according to one teacher.

Chairs

One-fourth of the schools used padded benches at the machines and chairs at the tables. Molded plastic bodies with metal legs appeared to be popular in the newer departments.

Grooming Area

Three-fourths of the schools had grooming areas. These ranged from a lavatory and mirror to very elaborate counter tops with stainless steel sinks, long lighted wall mirrors, and padded stools.

Fitting Area

Separate fitting rooms were found in one-fourth of the schools. The tendency to omit them as noted by Lee was apparent particularly in the newer and remodeled departments.[1] In many instances cupboard doors opened to form triple mirrors. Accordion type doors were

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[1]Lee, 31.

pulled on rods or across recessed areas to permit privacy. Folding screens were also very popular.

Demonstration Area

Teacher demonstration areas were found in three schools. One arrangement was similar to the straight unit suggested by Jones.[1] Another used a sewing machine in the center of the room and pressing space on a wall storage counter behind the machine. The third arrangement consisted of a sewing machine, a table, and a counter pressing area.

Storage

What to do with purses and other personal belongings carried by the students appeared to be a problem. One-half of the schools provided one of the following types of storage: shelves near the entrance, openings in a counter type cupboard, hall cupboards, shelves in the units, and space in the tote tray cabinets when the drawers were removed. The other schools made no provision for these items.

Sewing

The types of machines used by the various schools included: built-ins, separate cabinets, portables, and one treadle. One to five students per machine was the range with two the most common.

Pressing

The pressing boards included sleeve, skirt, and standard floor boards. Students per iron varied from two to ten with equal distribution throughout the entire range.

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[1]Jones, 36.

Differences Noted Between Classes Using a Unit Sewing Center Arrangement or a Group Arrangement of Equipment

The most significant difference noted between the two arrangements was the greater amount of traffic and movement with the group arrangement. Talking and visiting occurred with both. An equal degree of co-operation between student and teacher was apparent in either arrangement.

Discipline, methods taught, class size, and course content appear to be some important factors in teaching clothing construction as well as the type and arrangement of the equipment.

CHAPTER V

DESCRIPTION AND COMPARISON OF UNIT EQUIPMENT

Five manufacturers and three sewing machine companies were found to make standard models of self-contained unit tables and unit tables. One company (St. Charles) who formerly manufactured a self-contained unit table now prefers to custom build its equipment to suit the individual teacher and classroom situation. All of these tables except the Necchi-Elna product are designed to be used by four students.

Another manufacturer contacted expressed the following reasons for not making unit equipment: 1) The tables require too much floor space. (This opinion is not in agreement with a claim made by another manufacturer that his table requires one-third less floor space than the traditional clothing laboratory equipment.[1]) 2) Flexibility in room arrangement is sacrificed since the table is fixed to electrical connections. 3) The price becomes excessive if it cannot be standardized and put on a production basis. (It appears that no two teachers seem to want the same equipment in the table.) 4) The sewing machine heads are furnished by other manufacturers so there is always the necessity of coördination between the table maker and the sewing machine manufacturer.[2]

The self-contained unit tables and unit tables made by five manufacturers and available on the market are compared. One model, Geneva, is called a unit table because storage for all pressing equipment

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[1]Diagram with report and letter from A. Dee Glover, Glover Manufacturing Co., May 3, 1961.

[2]Letter from Harry Appleby, President, Bavinco Manufacturing Corp., Buffalo 11, New York, March 3, 1961.

and small equipment is not included. The other four are classified as self-contained (dependent upon the model). Unit tables manufactured by three sewing machine companies are considered separately.

Self-Contained Unit Tables and Unit Tables Made by Five Manufacturers

Size and Shape

The four models, Glover, J. J. Lane, Mutschler, and Geneva are very similar in size when not in use. The range is from Glover, 72" x 48", to Geneva, 75" x 45". There is a difference, however, when the units are open and are being used. The Glover becomes 72" x 92" and the J. J. Lane and Mutschler are both 75" x 118" (see Table I, page 23).

The longest and narrowest table is the Hamilton which is 90" x 36" closed and 90" x 64" in use. This table is the only one that opens to a U-shape. The others all become a ⌐¬ -shape when in use. The shape common to all five tables when they are closed is the rectangle.

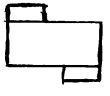
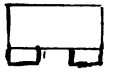
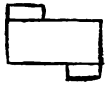
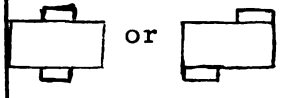
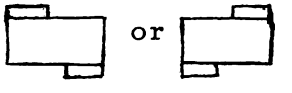
Storage

The Glover is the most self-contained unit in two respects: it has both built-in press boards and built-in tote drawers. The press boards are padded, covered, and equipped with a handle locking device. There are two boards attached to each unit.

The other companies do not furnish press boards. All except Geneva provide space for their storage, however. Storage for pressing irons can be found in all five units. Asbestos type lined compartments or shelves are provided for safety in storing hot irons.

The Glover table eliminates the need for tote tray cabinets. There are ten tote drawers in each unit and each drawer has a removable

TABLE I. A Comparison of Clothing Construction Self-Contained Unit Tables and Unit Tables Made by Five Manufacturers

Manufacturer		Glover "Glover Home-making Unit" Style A (Also Make Unit Tables)	Hamilton "Stout Sewing Table" (Also Make Unit Tables)	J. J. Lane (College, High School and Custom Models)	Mutschler (2 Models)	Geneva (4 Models)
Type		self-contained	self-contained	self-contained or unit table	self-contained or unit table	unit table
Dimensions:	Not in use	72"x48"	90"x36"x31" high	75"x42"x32" high	75"x42"(other sizes available)	75"x45"x36" or 30" high
	In use	72"x92"	90"x64"x 31" high	75"x118"x32" high	75"x118"	75"x94" or 75"x106"
Shape:	Not in use	rectangle	rectangle	rectangle	rectangle	rectangle
	In Use				 or	 or
Storage:	Press equipment	yes, 2 boards built-in	yes	in some models	in some models	for iron only
	Small equipment	yes	yes	in some models	no	no
	Tote Tray	10 drawers in each unit built-in	yes	yes	yes	built-in in some models
Cut and work space		yes	yes, top extends to 90" x 64"	yes	yes	yes
Press space		yes	yes	yes	yes	yes
Sewing machine position		roll under	roll under	roll under	raised into position by a spring	roll under or pull out, lift up mechanism

Materials	hard wood, ash and elm, laminated Micarta top	maple wood, 7 ply maple veneer or plastic top	wood with Formica top	maple wood with a choice of tops	steel with laminated plastic top and self edge
Finishes	natural blonde	6 wood finishes	not available	colors and natural grain	6 colors
Cost	$485.00 f.o.b. the factory, av. delivery cost per unit $15. to $20.	$550.00 to $700.00* with Formica top	$450.00 to $575.00	not available	not available
Number who can use at one time	4	4	2-4	4	4
Where equipment can be observed	Wash. State U., Pullman, Wash. and Edison Jr. H.S., Springfield, Ill.	Roosevelt H.S., E. Chicago, Ind. and Nicolet H.S., Milwaukee, Wis.	Purdue U., Lafayette, Ind. (custom model)	Bloom Township H.S., Chicago Heights, Ill.	Thornton Township H.S., Harvey, Ill.
Comments	"Excellent, well built, attractive"* "Very crowded for 6"*	"We like them"* "Knee control drops down and catches"*	manufacture a high school model and a larger, more complete college model, plus custom made	"Very satisfied"* "Changes in center storage drawer needed"* "Should be longer"*	"Plastic edge chips, would prefer stainless steel edge"*

*Data from questionnaire.

divider. This company reports the following statistics:

> Our research discovered that the average time required for a class to remove trays from a conventional tote tray cabinet and get seated is 5 minutes. The same amount of time is required to return the tray. A total of 10 minutes out of each 50 minute period is wasted. This is 1/5 of the period and is equivalent to the loss of one day out of each week or two months out of each school year.[1]

Tote drawers in the other units either slide under the table on racks, or fit into openings in the table when the student is in class. At other times they must be stored in tote drawer cabinets.

Cut and Work Space

The Hamilton model has the largest cutting surface. A leaf slides out from under the table top to form an area 90" x 64". The unfavorable feature is that this leaf is one and one-half inches below the table surface. Since the machines must be out to support it's weight, no sewing can be done while this leaf is extended.

A respondent to the questionnaire felt that the Mutschler unit should be longer and provide more work space.

The average table height is approximately thirty inches. This is higher than the twenty-eight inches recommended by Lee for work while seated.[2] One teacher stated that a table height of thirty-two inches was too high.

Press boards must be placed on the table tops in all units except the Glover. A multi-purpose board, twenty-four inches long, five inches high, and eight inches wide is acceptable for this use (see Appendix III). Standard floor boards can be provided for final garment pressing.

---

[1]Letter from A. Dee Glover.

[2]Lee, 30.

Sewing Machine Position

The majority of the sewing machines roll out from under the table for use. The heads are lifted out as in the conventional type of cabinet. Another method employed by Geneva is the use of a pull out, lift up mechanism (see commercial literature in Appendix III). Responses to the questionnaire indicated that the Hamilton unit required changes made in the foot or knee control operations.

Materials and Finishes

Of the five models studied, four are constructed of wood and one, Geneva, is made of steel. (St. Charles also uses steel in their sewing machine unit which may be custom built into a table of any shape.)

Laminated plastic tops are available from all five companies. Of those responding to the questionnaire, 87.5 per cent who had this type of table covering (Formica) liked it. A range of six colors plus natural wood finishes are offered by some companies. Natural finishes were preferred over the colors by 75 per cent of the respondents.

Cost

The author's belief that the units are expensive was substantiated. The price range was from $450.00 to $700.00 (the latter figure was obtained from the questionnaire). Prices were not available from two companies. The E. L. Erickson Products Company of South Dakota quoted prices from $650.00 to $950.00 or more for units accommodating two students.[1] This company did not have an illustrated catalogue due to standardization difficulties and so was not included in the comparison. None of the prices mentioned include sewing machine heads or delivery charges.

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[1]Letter from E. L. Erickson, Founder-Owner, E. L. Products, (Ames Powercount Company) Brookings, South Dakota, May 8, 1961.

Sewing Machine Company Unit Tables

The unit tables manufactured by three sewing machine companies, Necchi-Elna, Singer, and White, have similar dimensions. The height is thirty inches with a rectangular shape ranging in size from 60" x 35" to 64" x 42". Drop leaves increase the size of two of the tables (see Table II, page 28).

Tote tray storage is provided when the students are in the room. Drawers will hold small equipment in two models. There is no provision made for storing pressing equipment.

All three tables are constructed of wood and have natural birch, light blonde, or dark walnut finishes.

The Necchi-Elna model seats two students and can be considered a unit table only when two desks are joined together with a connecting leaf.

Cut and work space is available in all three models only when the sewing machine heads are down since they lift up out of the table tops. This is an unfavorable feature and limits the function of this type of unit table. The sewing machine heads are located in the left side of the White and Singer tables. This provides very little space for the fabrics while stitching and is another undesirable characteristic.

TABLE II. A Comparison of Clothing Construction Unit Tables Made by Three Sewing Machine Companies

Company	Dimensions	Storage		Pressing Space	Materials	Finishes	No. Who Can Use at One Time
		Small Equip.	Tote Tray				
Necchi-Elna (Unit table only when two desks are joined with connecting leaf)	60"x35"x30" high	Yes, small drawer	Collapsible shelf will hold	No	Wood	Light birch	2
Singer (Combination sewing and cutting table)	60"x42"x30" high + 18"x42" drop leaves	Yes, two small drawers	Yes, two openings in apron	No	Wood with Formica top	Light blonde or dark walnut	4
White (Sew and cut table)	64"x42"x30" high + one or two 16"x42" drop leaves	No	Yes, two openings in apron	Yes, extra outlet permits minor pressing	Wood	Natural birch with Pionite top	4

The shape of all three unit tables is rectangular.
There is no provision made for storage or pressing equipment in any of the units.
The sewing machines lift out of all three table tops.
Cutting and work space is only provided when the machine heads are down.

CHAPTER VI

ANALYSIS OF THE QUESTIONNAIRE

The questionnaire was developed to secure data relevant to the following objectives: (1) to obtain information about unit sewing center equipment being used, (2) to determine satisfaction with present equipment, (3) to learn preferences for equipment, and (4) to garner opinions concerning the arrangement of equipment. Questionnaires were distributed to clothing construction teachers working with unit sewing center equipment.

Description of the Sample

The teachers selected and who responded represented nine states which included: California, Indiana, Illinois, Kansas, Michigan, Missouri, Ohio, Washington, and Wisconsin.

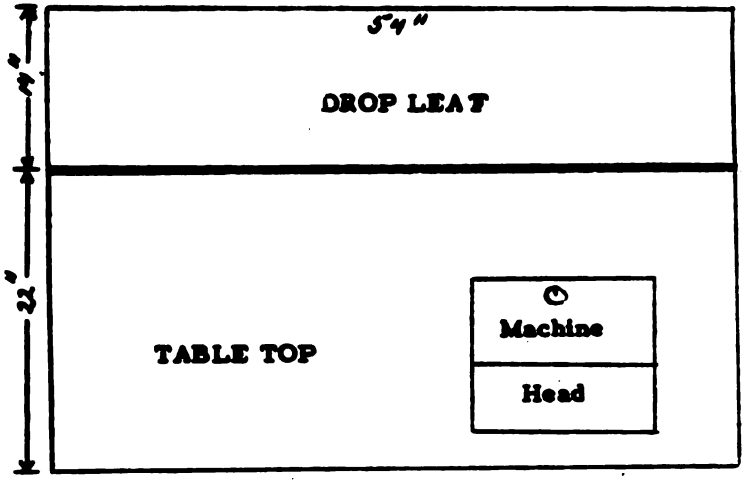
The sample was composed of teachers working at three different levels (see Table III).

Table III. Distribution by Teaching Level of the Respondents to the Questionnaire*

Teaching Level	Percentage
College	36.3
High School	48.5
Junior High School	15.2

*The percentages in this study are based on the total sample (33) or on the three teaching levels--college (12), high school (16), and junior high school (5) of which the sample is composed.

PLATE II



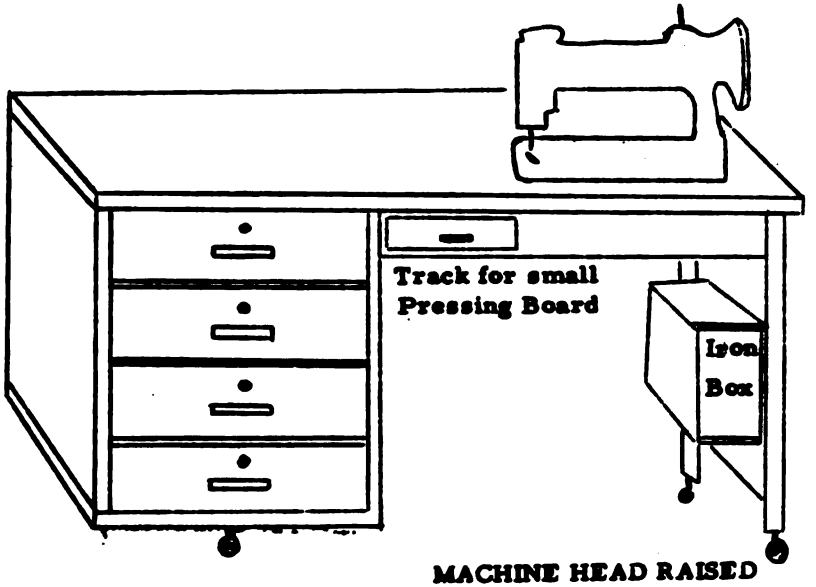
INDIVIDUAL CLOTHING CONSTRUCTION UNIT

designed by
Textile and Clothing Division
SCHOOL OF HOME ECONOMICS
THE OHIO STATE UNIVERSITY

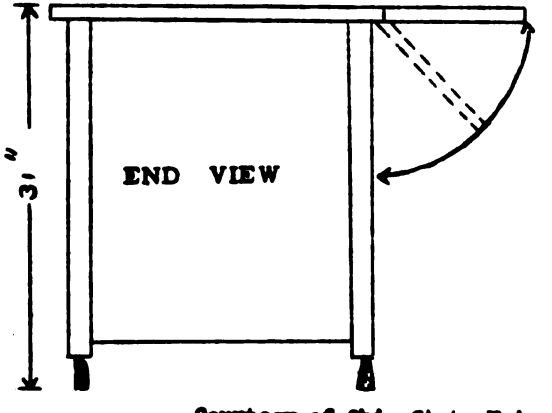
Provide space for:
- Cutting garments
- Hand sewing
- Machine sewing
- Pressing during construction
- Storage for student supplies
- for four laboratory sections

Finish: hard wood or Formica top

Cost of table	- $360.00 less 45% to schools	$198.00
Cost of head	- 187.50 less 45% to schools	103.13
($301-1)	Total cost to schools	$301.13



MACHINE HEAD RAISED



Courtesy of Ohio State Univ.

Slightly more than one-half (57.6%) were teaching in new departments which were equally divided among the three levels. Older and temporary housing were occupied by 9.1 per cent. Of these, several indicated plans for new buildings within the next few years. The remaining segment (33.3%) were teaching in remodeled rooms.

The respondents were teaching only clothing classes in 80.6 per cent of the rooms. The remainder of the rooms (19.4%) were used to teach other phases of homemaking plus other unrelated subjects in addition to clothing classes. Room size varied considerably. The smallest rooms were found in one high school and in one college. They were 25' x 24' and 26' x 24' respectively. The latter, a college clothing room only was equipped with nineteen individual self-contained unit tables (see Plate II, page 30). The high school room had a unit arrangement of equipment. These were also the only square-shaped rooms, the others all being rectangular.

The longest room reported was 67' x 27' (junior high school) and was an all-purpose room. Complete sewing centers were contained in each corner of one-half of the room.

The narrowest room (college) was 19'6" x 32' and contained a variety of equipment. The average size room was found to be approximately 46' x 26'.

Objective I. To Obtain Information About Unit Sewing Center Equipment Being Used

Types of Equipment Being Used

The Glover Homemaking Unit was used at all three levels. Although the Hamilton, Mutschler, and St. Charles units were found in colleges and high schools, 50 per cent of the colleges were using their own designs. More self-contained unit tables were being used by the

colleges while the three types of unit sewing center equipment were about equally divided at the high school level. There were no unit tables being used in the junior high schools (see Table IV).

Table IV. The Types of Unit Sewing Center Equipment Being Used at the Three Teaching Levels

Types of Equipment	College		High School		Junior High School	
	No.	%	No.	%	No.	%
Self-Contained Unit Tables	8	66.6	6	37.4	2	40.0
Unit Tables	2	16.7	5	31.3	-	----
Unit Arrangement	2	16.7	5	31.3	3	60.0

Use of Equipment in an All-Purpose Room

More than one-half of the college teachers who had self-contained unit tables said they could not be used in an all-purpose room. The majority (83.3%) of the high school teachers with this same type of table agreed.

The unit table could be utilized according to all of the high school teachers but only one-half of the college teachers felt this way.

All the senior and junior high school teachers indicated that the unit arrangement would be satisfactory for an all-purpose room. The college teachers were equally divided in opinion as to the possible use of the unit arrangement.

Number of Students and Classes

The number of students accommodated in a unit varies with each type of school. This was also true with the number of classes per day that used the equipment (see Table V, page 33).

Table V. Variations in Unit Accommodation and Use at the Three Teaching Levels

Level of Teaching	Number of Students Accommodated in a Unit		Number of Classes Per Day that Use the Equipment	
	Range	Most Common	Range	Average
College	1-2	1-2	1-5	3
High School	1-4	4	3-7	5
Junior High School	2-6	4	2-6	5

Irons Per Student

At the college level, two students usually share an iron. The average is five students per iron in the senior and junior high schools.

Cutting Area

Seventy-five per cent of the college teachers reported doing all the cutting in the unit. The other 25 per cent either used cutting tables, equipment in another laboratory, or cutting boards.

Less than one-half of the high school teachers (43.7%) mentioned using only the unit for cutting. They supplemented cutting space by using cutting tables, counters in the clothing room, and tables in the foods laboratories.

The junior high schools used the units or cutting tables.

Seating

Twenty-five per cent of the high schools had benches at the machines and chairs at the tables. One junior high school had stools that swing out from the four corners of the table. Several college teachers mentioned other features such as : adjustable height, casters, padded seats, and the use of a "regular secretary's chair." Metal legs with

fiberglass bodies or wooden backs and seats were other forms. The Glover Company has developed a special low backed revolving chair which is a companion piece to their Homemaking Unit (see photograph in Appendix III). The majority, however, had wooden chairs with backs.

Storage of Personal Belongings

Provision was made for the storage of personal belongings carried by students from class to class by more than one-half at all three levels. This was especially true in the colleges (83.3%) where space was provided in the units or in hall lockers. The high schools most frequently utilized the space in the tote tray cabinets when the drawers were removed.

Objective II. To Determine Satisfaction with Present Equipment

Changes in Equipment

When asked if they would make changes if selecting or designing equipment a second time, 42.4 per cent of the total sample stated they would not. Of the college group who had self-contained unit tables, 37.5 per cent wanted or had made changes in their equipment. The St. Charles units did not have enough space at the back of the sewing machine to hold the fabric. A drop leaf was given as a suggestion to remedy this situation. The Mutschler center storage drawer could also be improved upon. One-half of the college teachers expressed a desire for pressing equipment storage in their unit tables.

One-third of the high school segment who had self-contained unit tables listed the following changes: a stop on the pull out machine, the addition of a foot control holder, and the closing of an opening to keep the bobbins from dropping out on the Hamilton unit; and more length added to the Mutschler unit.

Table Surfaces

Of the group who had Formica table tops, 87.5 per cent expressed satisfaction. Dissatisfaction with Formica appeared at all three levels to an equal degree. The reasons given were: (1) too slippery but balanced by durability, (2) edges chip, and (3) finger prints will not come off.

Table VI. The Types of Table Surfaces Being Used by the Entire Sample

Material	Percentage
Formica	72.7
Wood	18.4
Cork	6.1
Other (Asphalt Tile, etc.)	2.8

Thirty-three per cent dissatisfaction, all at the college level, was evident among the group who had wooden table surfaces. The reasons mentioned were: (1) too soft a plywood was used, (2) it must be kept waxed, (3) one had to be careful about water, and (4) a heat, scratch or mar resistant finish was preferred.

The owners of cork and asphalt tile covered tables were all satisfied.

Outlets

Floor outlets were the most satisfactory type for self-contained unit table and unit table arrangements. A difference of opinion was noted, however, in the type of floor outlets. One respondent stated that they should be flush with the floor, while another intended to have hers raised since they had been damaged in mopping.

Wall outlets were unanimously unsatisfactory for both self-contained unit tables and unit tables, but satisfactory for 75 per cent of the group who had a unit arrangement of equipment.

Objective III. To Learn Preferences for Equipment

Type Preferred

Teachers at the three levels most often mentioned the self-contained unit table as the type of equipment they would prefer in their clothing rooms (see Table VII). All but one teacher who had this type of table preferred it.

Table VII. The Type of Unit Sewing Center Equipment Preferred by Teachers at the Three Levels

Type of Equipment	Percentage		
	College	High School	Junior High School
Self-Contained Unit Tables	66.7	68.7	60.0
Unit Tables	8.3	6.3	20.0
Unit Arrangement	16.6	18.7	20.0
No Response	12.6	6.3	----

Note: Totals may exceed 100 per cent because of multiple responses.

Teacher's Demonstration Unit

Fifty per cent of the college teachers, 18.7 per cent of the high school teachers, and 20 per cent of the junior high group had separate teacher demonstration units. A similar response at all three levels indicated that such a unit would be desirable (see Table VIII, page 37).

Table VIII. The Importance of a Teacher's Demonstration Unit Indicated by Teachers at the Three Levels

Importance	Percentage		
	College	High School	Junior High School
Essential	16.7	6.3	--
Desirable	66.6	68.7	60.0
Unnecessary	16.7	18.7	40.0
No Response	--	6.3	--

If the teacher did not have a separate unit or area, the usual procedure was to use one of the student units.

Demonstration Mirror

Seventy-five per cent of the college group and 60 per cent of the senior and junior high segment stated that a demonstration mirror would be desirable. An almost equal portion among all three groups said it was either essential or unnecessary. One college teacher noted that a demonstration mirror would reverse procedures but this is a mistaken opinion.

Grooming Center

A grooming center was more important in the secondary schools although 25 per cent of the college teachers said it was desirable (see Table IX, page 38).

Pressing Boards

The responses were very dissimilar when the respondents stated their preference for the type of pressing board to be used in a unit (see Table X, page 38).

Table IX. The Importance of a Grooming Center Indicated by Teachers at the Three Levels

Importance	Percentage		
	College	High School	Junior High School
Essential	----	12.5	40.0
Desirable	25.0	56.2	40.0
Unnecessary	75.0	18.8	20.0
No Response	----	12.5	----

Table X. The Type of Press Board Preferred for Use in Each Unit Sewing Center by Teachers at the Three Levels

Type of Board	Percentage		
	College	High School	Junior High School
Sleeve Board	25.0	25.0	20.0
Skirt Board	8.3	31.4	----
Standard Floor Board	---	----	60.0
Sleeve and Skirt Boards	16.8	6.2	----
Sleeve and Floor Boards	----	6.2	----
Skirt and Floor Boards	8.3	----	----
Sleeve, Skirt, and Floor Boards	8.3	----	----
Combination Board (See Appendix III)	---	6.2	----
Pressing Cushion	----	6.2	----
Built-in Board (Like Glover)	----	----	20.0
Other (Did not specify)	----	6.2	----
No Response	33.3	12.6	----

Small Equipment

The teachers were asked to, "Check those items of small equipment which you feel are essential in each unit." The college teachers noted that their students usually supply their own small equipment. The items varied in importance within the three groups. The college segment were most concerned with pressing equipment while the junior high school teachers mentioned these pieces least often (see Table XI).

Table XI. Small Equipment Considered Essential in Each Unit Sewing Center by Teachers at the Three Levels

Equipment	Percentage		
	College	High School	Junior High School
Tracing Wheel	*	75.0	80.0
Tracing Paper	*	75.0	80.0
Tracing Board	16.6	31.2	----
Cutting Shears	*	56.2	80.0
Small Scissors	*	50.0	60.0
Pressing Cushion	75.0	93.7	20.0
Pounding Block	50.0	43.8	20.0
Point Presser	50.0	56.2	60.0
Pressing Cloths	66.6	62.5	40.0
T-Square	16.6	6.2	----
Yardstick	25.0	25.0	20.0
Transparent Ruler	*	43.8	60.0
Measuring Gauge	*	31.2	60.0
Zipper Foot	50.0	75.0	60.0
Machine Attachments	25.0	18.7	40.0

*Students supply their own.

"Others" suggested by the respondents included standard pressing equipment which the author assumed would be part of the unit. In addition, the following were listed: seam guides, machine instruction booklet, pinking shears, buttonhole and zig zag attachments, tailor's chalk, and hem markers.

Objective IV. To Garner Opinions Related to the Arrangement of Equipment

Group Arrangement

When asked if they had taught using the group arrangement of equipment, 90.9 per cent responded in the affirmative. The group arrangement was thought to have disadvantages by 75.7 per cent of this segment. "Time wasted" followed by "Too much traffic and movement" were the most frequently suggested disadvantages (see Table XII).

Table XII. Disadvantages of the Group Arrangement Suggested by Teachers Who Have Used this Type of Equipment

Disadvantages	Mentioned Frequency Percentage
Time wasted	36.4
Too much traffic and movement	30.3
Confusion and congestion	21.2
Leads to noise and visiting	15.1
Not efficient	12.1
Students cannot keep supplies with them	6.1
Wastes steps	3.0
Inconvenient	3.0
Less likely to press	3.0
Less management of time and energy	3.0

Unit Sewing Center versus Group Arrangement

The respondents at the junior high level were unanimous in their opinion that a room is more orderly and easier to supervise with unit sewing center equipment than with a group arrangement. Most college (83.3%) and high school (87.5%) teachers agreed.

Similarly, 75 per cent (college), 81.3 per cent (high school), and 80 per cent (junior high school) indicated that more talking and visiting would occur among students using the group arrangement. One high school teacher, however, felt there was no difference and that it was a matter of discipline.

The majority at all three levels agreed that more student and teacher satisfaction results from using the unit sewing center method of arranging equipment. Carry over for efficiency in home sewing was indicated as another result.

Several of the college teachers were of the opinion that the type and arrangement of equipment depends on what is to be taught. They felt that unit sewing center equipment was more satisfactory where a great deal of construction occurred but preferred to use the group arrangement for advanced students who were working with flat patterns and draping.

Unit Arrangement

Opinions varied considerably on the question of whether or not the organized arrangement of traditional clothing laboratory equipment (unit arrangement) would be comparable in use to the self-contained unit table or the unit table arrangements. One-half of the high school teachers indicated an affirmative answer while 25 per cent replied negatively (25% did not respond). Fifty per cent of the college group and the majority of the junior high school teachers said it would not be

comparable (16.6% of the college segment said "yes" and 33.4% did not respond). Several high school teachers offered the following comments: (1) space does not usually permit the unit arrangement, and (2) it is not entirely comparable but it will be better than the group arrangement.

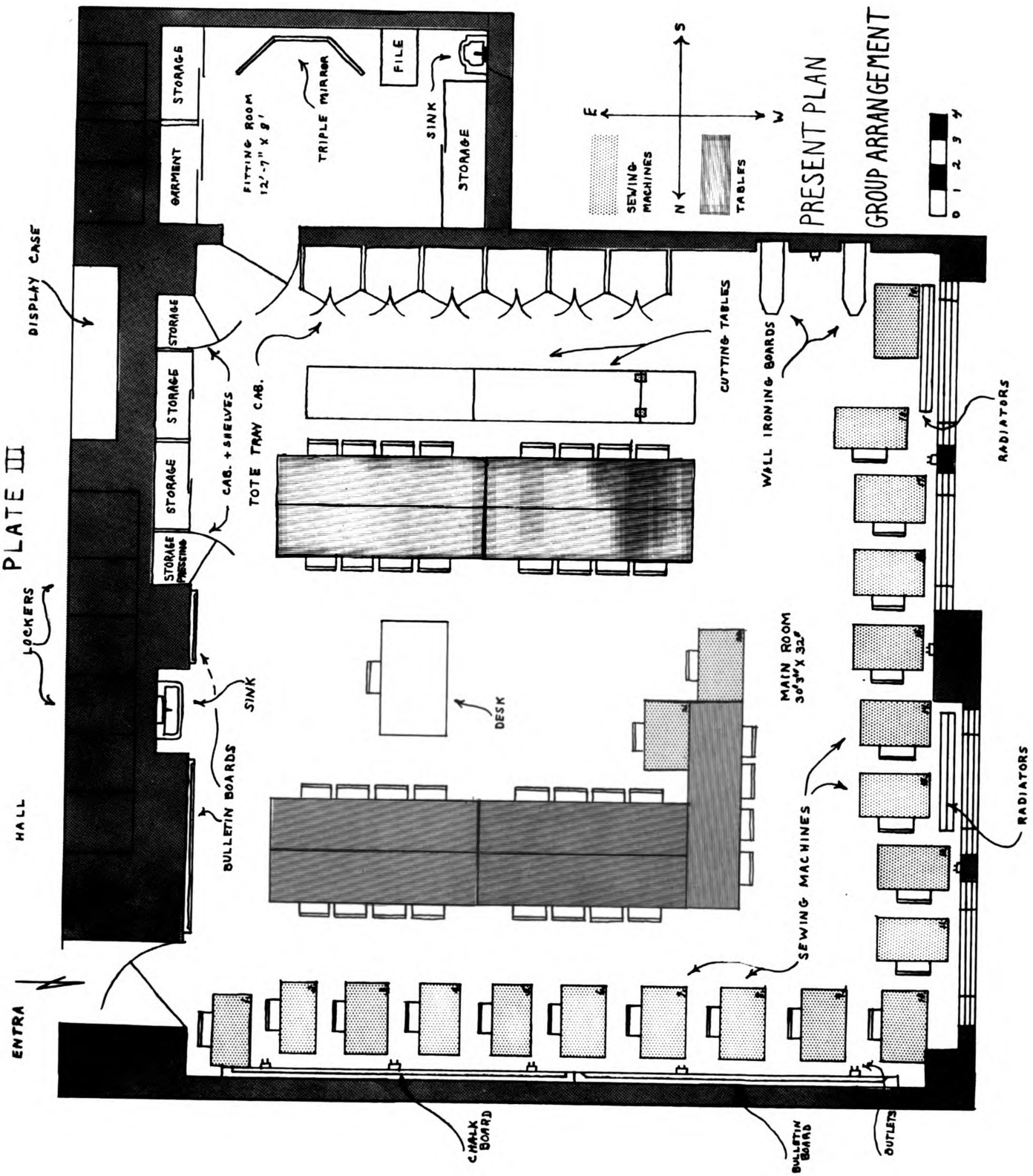


PLATE III
PRESENT PLAN
GROUP ARRANGEMENT
ENTRA
HALL
LOCKERS
DISPLAY CASE
BULLETIN BOARDS
SINK
STORAGE PRESSING
STORAGE
STORAGE
STORAGE
CAB. + SHELVES
STORAGE
GARMENT
STORAGE
FITTING ROOM 12'-7" X 8'
TRIPLE MIRROR
FILE
SINK
STORAGE
TOTE TRAY CAB.
CUTTING TABLES
WALL IRONING BOARDS
RADIATORS
DESK
MAIN ROOM 30'3" X 32'
SEWING MACHINES
RADIATORS
SEWING MACHINES
TABLES
CHALK BOARD
BULLETIN BOARD
OUTLETS
0 1 2 3 4

CHAPTER VII

FLOOR PLANS

The author's room is a clothing laboratory where elective courses pertaining to clothing and textiles are taught to students in grades nine through twelve. The number of students enrolled in these courses during each semester is one hundred and twenty to one hundred and twenty-five. The number of classes per day is six. Evening adult clothing construction courses also are conducted in this room two nights a week.

Demonstration techniques are an important phase of the teaching process since the instructor sews a garment with almost all of the classes. The students construct garments with similar problems. The methods of construction followed stress frequent pressing as the steps are completed.

Two favorable features of the present plan are an acoustic ceiling and fluorescent lights which were recently installed. Wall outlets are located on the north and west walls. There are no floor outlets.

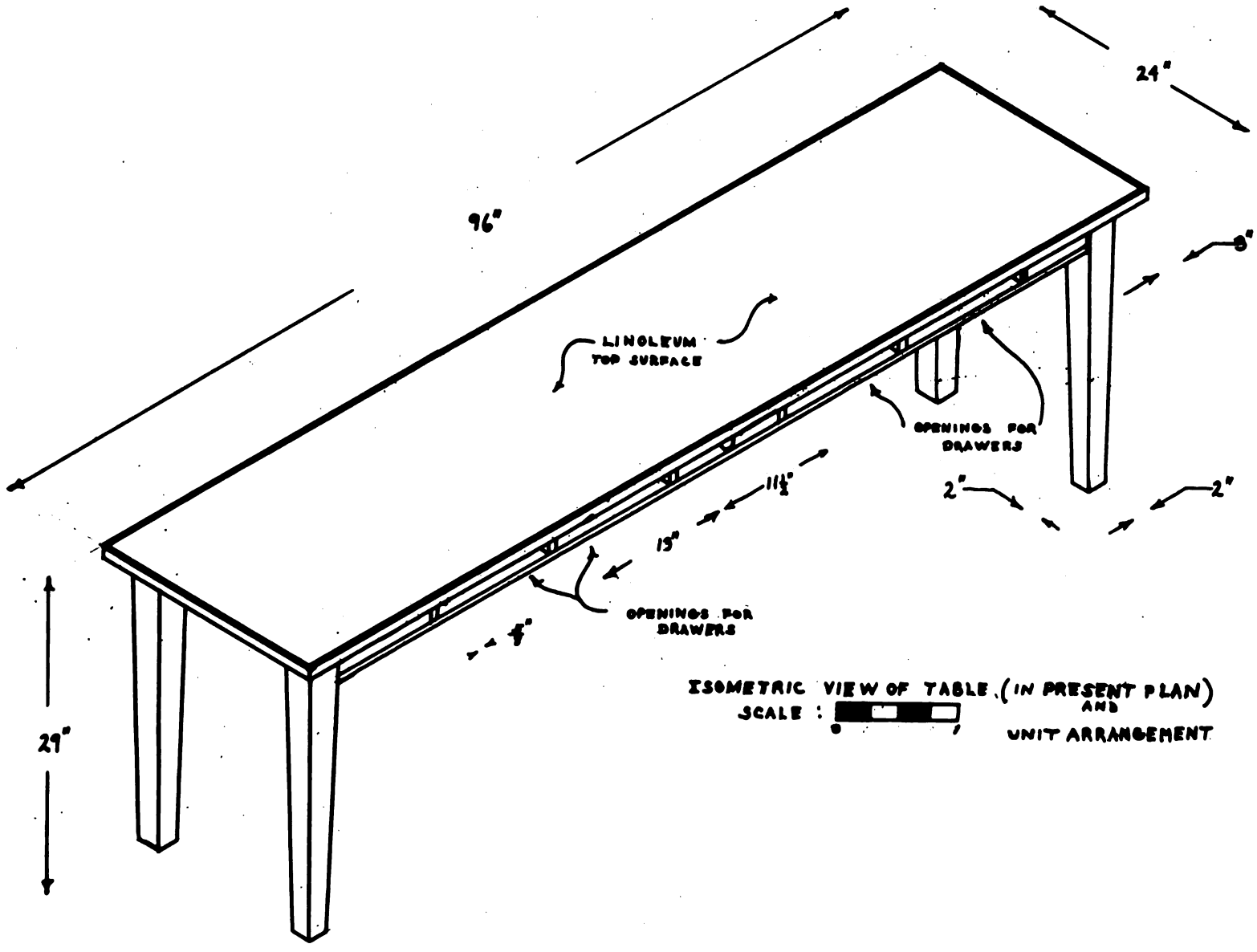
The main room is square-shaped with dimensions of 30'3" x 32'. The separate fitting room adds 12'7" x 8' to the total area (see Plate III, page 43).

The triple mirror in the fitting room is stationary. The storage cupboard on the short west wall in this room is high with heavy sliding wooden doors.

The storage cabinets along the east wall have either sliding glass doors or wooden hinged doors. One of the two lavatories is recessed between the bulletin boards on this wall.

Tote tray cabinets are located on the south wall with two wall pressing boards.

PLATE IV



ISOMETRIC VIEW OF TABLE (IN PRESENT PLAN) AND UNIT ARRANGEMENT

SCALE : 0 1'

Present Plan

Group Arrangement

The sewing machines are located along two walls near the outlets. The tables are placed back to back toward the center of the room. Four tote drawer openings are on one side of each table (see Plate IV, page 45). There is one pressing area near the southwest corner of the room. Pressing equipment is stored in an east wall cupboard. Only two students may press at one time; consequently, there is always a long waiting line. All the tables are utilized for cutting in addition to the cutting tables near the tote tray cabinets.

A teacher's demonstration unit is formed by bringing the sewing machine which is directly in line with the desk closer to that area. An extension cord is connected to the nearest outlet on the west wall. A skirt board is placed on the desk for pressing. The extension cord must be disconnected after each demonstration so that the students may use the outlet for their machines. Students seated behind the demonstration unit must move to an area where the visibility will be improved.

The sewing machine near the instructor's machine is used infrequently because it necessitates the use of an extension cord. This creates a dangerous situation with the possibility of a student tripping on her way to the one pressing area.

Space between the machines in the present group plan is very limited and just accommodates the width of a chair. In some areas the leaf of the machine must be raised to allow the neighboring student to move from her machine. This may not be readily apparent in the floor plan since the machines are illustrated with the leaves closed.

Proposed Plans

It was noted earlier that the trend today is to eliminate the separate fitting room (see page 10). The removal of the wall section that forms the fitting room is proposed for both new plans. This will create more space and enable all the students to view the fitting demonstrations. (Floor space is available in Plan II to permit chairs to be placed in a semi-circle.) A movable, folding screen will be used for privacy while changing garments.

The parallel arrangement of equipment suggested by Jones has been adapted for the demonstration desk unit in each proposed plan[1] (see Plate I, page 9). The lavatory and small bulletin board on the east wall in the present room are correctly located for her plan. The larger bulletin board should be replaced with a chalkboard. The cupboard behind the demonstration unit will store teacher's supplies. Jones suggests that this unit be custom built or that present equipment be arranged in this order. A swivel chair is another recommendation.[2] The student's chairs may bemoved in both plans to permit closer observation of the demonstrations.

More than one-half (56.2%) of the high school teachers who responded to the questionnaire indicated that a grooming center was desirable. A smaller number (12.5%) thought it was essential. Link suggests locating the grooming center adjacent to the fitting area since the combination is useful for style shows.[3] The lavatory in the fitting area could be replaced with the type that has storage below and some counter space.

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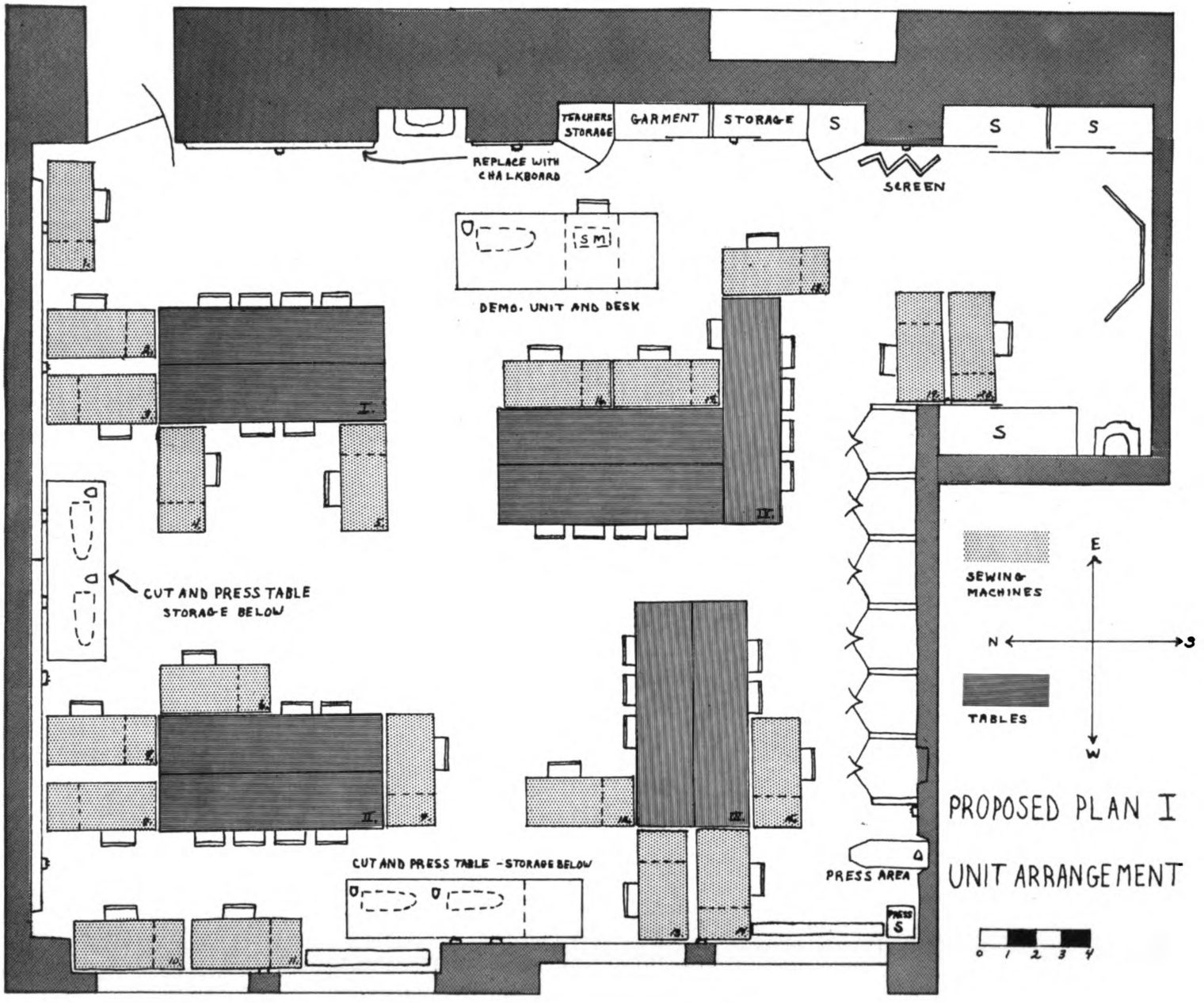
[1]Jones, 36.

[2]Ibid., 53.

[3]Charlotte Link, "Designing Home Economics Space for Secondary Schools," Forecast for Home Economists, LXXV (September, 1959), 15.

PLATE V



PROPOSED PLAN I

UNIT ARRANGEMENT

A mirror with a light and side sections that open to form a triple mirror could be placed above.

The number of sewing machines remains the same as in the present plan. There are twenty for students use and one for the teacher. In both proposed plans standard floor pressing boards may be used at the east wall outlets for final garment pressing.

Plan I

One attempt to improve the situation is a rearrangement of the present equipment into a unit arrangement (see Plate V, page 48). It was stated earlier that Johnson believes a separate machine located near a movable table with adjacent pressing equipment can be used for any age student and in any type of room (see page 8).

This plan does not consider the installation of floor outlets since wall outlets were satisfactory for seventy-five per cent of the respondents to the questionnaire who had unit arrangements. Additional wall outlets are necessary, however, on the short west wall and at each cut and press table. Here they should be installed at a higher level with signal lights added. The major expense in this plan, in addition to the removal of the wall section, is the electrical work.

An extension cord of heavy rubber will be required at each unit. It will lie under the table between the table legs. The cords will have to be crossed only at the demonstration unit and unit IV. The cords will need to be covered and made stationary at these two locations.

The two cutting tables have been assigned the additional function of pressing space. Lee stated that ". . . cutting tables are almost never justified from the standpoint of expense and use."[1] Cutting height may have to be sacrificed for pressing height since the latter is done more frequently. The demonstration unit pressing area may be utilized by the students. (The machine is not planned for student use, however.)

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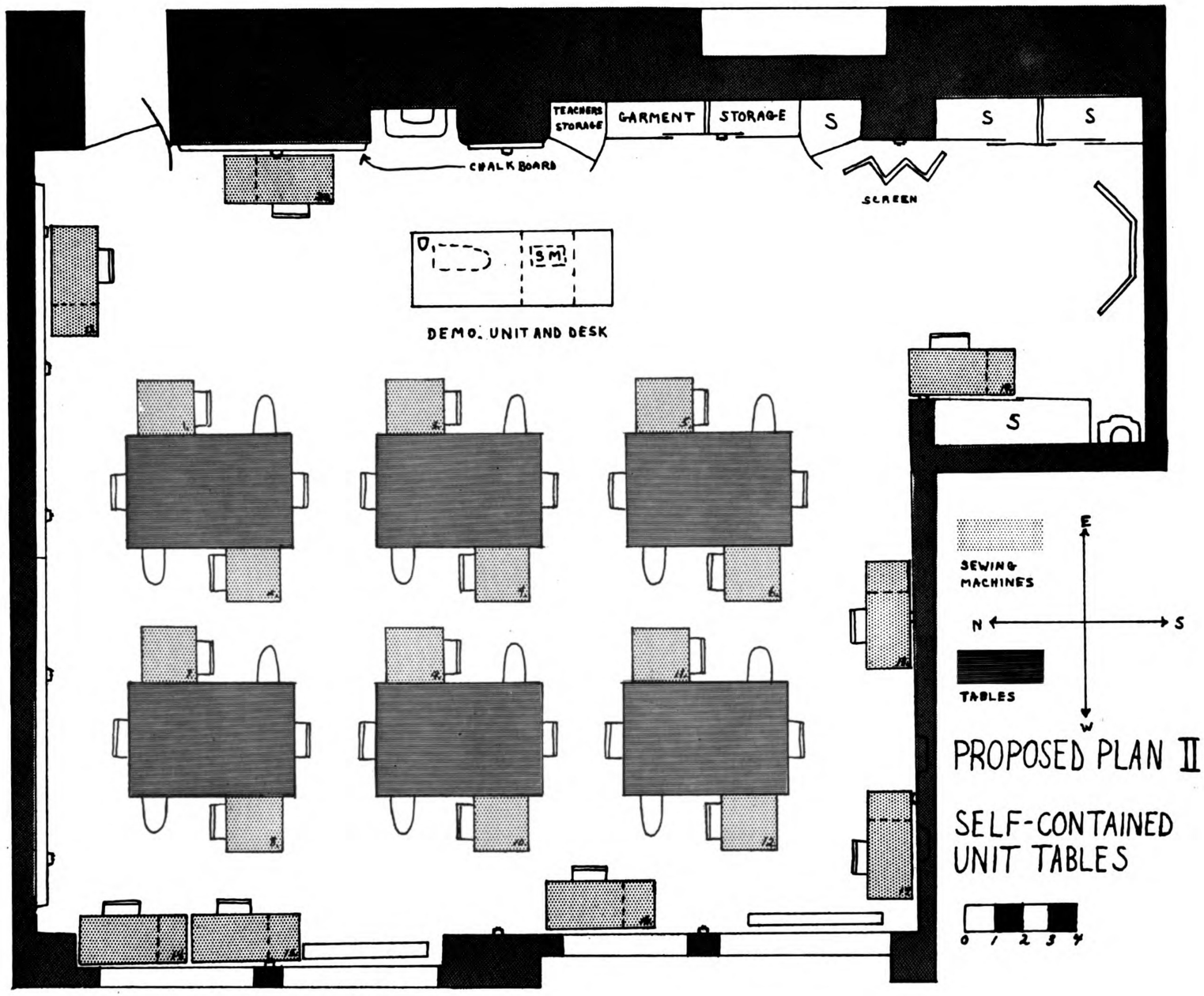
[1]Lee, 31.

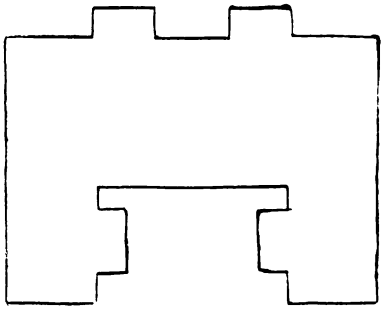
PLATE VI


TEACHERS STORAGE
GARMENT
STORAGE
S
S
S
CHALK BOARD
SCREEN
DEMO. UNIT AND DESK
S
SEWING MACHINES
TABLES
E
N
S
W
PROPOSED PLAN II
SELF-CONTAINED UNIT TABLES
0 1 2 3 4

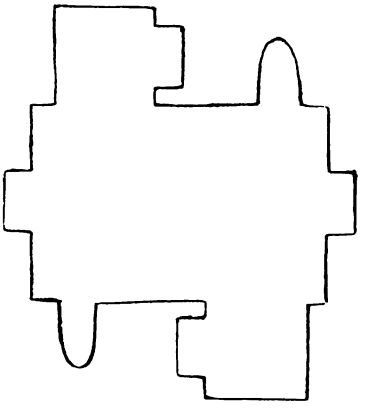
Six students may press simultaneously in different areas of the room with this arrangement. Additional pressing boards and irons, plus more small equipment items, will add to the expense of this plan. Receptacles for storing pressing equipment below the cut and press tables and in the southwest corner can be constructed by the school's industrial classes. Flexibility is maintained with this plan because the equipment is not installed and can be moved or rearranged at any time.

Plan II

Since 68.7 per cent of the high school teachers who responded to the questionnaire preferred the self-contained unit tables, the author experimented with this arrangement for her laboratory (see Plate VI, page 50). The Hamilton and Glover models were considered. The drawings represent the shape of the two units when the equipment is being used. They are drawn to the scale of one-fourth inch equals one foot.



Hamilton-Stout Sewing Table



Glover Homemaking Unit
Style A

The Glover model was chosen because: (1) floor space did not permit as orderly an arrangement of the Hamilton unit as the Glover unit, (2) the tote tray cabinet could be removed since tote drawer storage is built-in in the Glover unit, and (3) more pressing space would

be available since the Glover model contains two built-in press boards in each unit. The cutting space is more limited with the Glover unit than with the Hamilton unit because the latter has a leaf which extends the area to 90" x 64". Since more time is spent pressing than cutting, this feature was by-passed. Although time and steps are saved with the Glover unit by not traveling to a tote tray cabinet, greater problems may be created because the tote drawers have to be shared in order to accommodate six classes. (Drawer dividers are supplied by the manufacturer.)

Wall outlets were unanimously unsatisfactory for self-contained unit tables according to the respondents to the questionnaire. Therefore, this plan will require major remodeling to install floor outlets in addition to the removal of a wall section.

The purchase of new equipment would increase the expenses considerably even though the sewing machine heads from the present equipment could be utilized. (See Table XIII, page 53, for the cost to equip one unit sewing center using a self-contained unit table. Each school will determine the number of students per item of small equipment.)

The emphasis with the self-contained unit tables will be on efficiency and the management of time and energy. It is hoped that students will be encouraged to use the proper techniques because the equipment is readily available. This plan eliminates the need to travel to various parts of the room. However, instruction in the proper use of the tables will be necessary if the equipment is to be used effectively.

Table XIII. The Cost to Equip One Unit Sewing Center Using a Self-Contained Unit Table

Item	List Price
Glover Homemaking Unit--Style A	$500.00
Singer Sewing Machine--Head No. 404 (Two)	299.00
Steam and Dry Iron (Two)	30.00
Pressing Cushion	3.50*
Edge or Point Presser	2.00*
Pounding Block	2.00*
Press Cloth (treated)	.79
Cutting Shears	4.00
Small Scissors	2.50
Tracing Wheel	.69
Tracing Paper	.25
Zipper Foot	1.45
Machine Attachment (Buttonholer)	12.95
Transparent Ruler	.25
Measuring Gauge	.29
Yardstick	.39
T-Square	1.90
Total	$861.96

*Patterns for these items are found in Appendix III.

Evaluation of the Floor Plans

Limitations of the Ratings

A panel of five judges rated each floor plan. Two of the panel members were familiar with the clothing laboratory; the other three had

not seen the room. The author regrets that the judges did not have the opportunity to read the entire study for background information to aid them in their evaluation of the floor plans.

Comparison of the Ratings

Each floor plan was rated on seven features. The scale was as follows: (4) Excellent, (3) Good, (2) Fair, and (1) Poor.

Table XIV. A Comparison of the Ratings by a Panel of Five Judges of the Present and the Two Proposed Floor Plans for a Specific Clothing Laboratory

Feature	Present Plan Group Arrangement	Plan I Unit Arrangement	Plan II Self-Contained Unit Tables
Travel distance to various areas	1.8	2.8	3.8
Accessibility to:			
Cutting area	1.4	3.0	3.6
Sewing area	2.2	3.2	3.8
Pressing area	1.0	2.8	4.0
Probable lack of confusion	1.6	2.6	3.8
Visibility of demonstration area	2.4	2.0[a]	2.8[b]
Comfort and convenience in use	1.8	2.6	3.8
Amount of equipment for 24 students	2.5	3.0	3.8
Efficiency of plan as a whole	1.6	2.6	3.8

[a] Could be 2.4 with chairs moved.
[b] Could be 3.2 with chairs moved.

Proposed Plan II with the self-contained unit table arrangement received the highest rating in all features. The most significant increase in rating over the present plan occurred in Plan II with accessibility to the pressing area and efficiency as a whole.

The present group arrangement was rated higher than the unit arrangement (Plan I) on visibility of the demonstration area. Plan I and Plan II ratings for this feature could be increased if the students were permitted to move their chairs closer to the demonstration unit.

The judges were asked to offer comments and suggestions for each of the plans. A summary of their comments follows:

Present Plan--Group Arrangement

Three of the judges said this plan appeared crowded and especially so near the doorway. One judge felt the plan was excellent for classes other than construction. Another indicated that the methods of construction taught would affect the satisfactory use of a room equipped with a large number of sewing machines but limited pressing equipment. The number of machines for twenty-four students was excellent but the quantity of pressing equipment was poor.

Plan I--Unit Arrangement

Several judges mentioned the need for more pressing areas closer to unit IV. There is more passage way near the entrance door with this plan. One rater thought the room looked larger while another felt the south side would not appear so heavy and crowded if unit IV resembled the other units. She thought the north side was excellent. One panel member suggested that the author investigate the possibility of a machine cabinet that would be a comfortable height for writing or hand work and replace some of the long tables. One judge was not sure that

much had been gained and that cutting space had been cut down. Another felt that a demonstration mirror would be a great asset to the visibility of this area.

Plan II--Self-Contained Unit Tables

This plan was the most orderly appearing according to one rater. Several had worked with this type of equipment and one stated, "It was wonderful to work and teach in the room." Another commented that, "Room is crowded near the units and traffic is a problem, I know from experience!" She also stated that discipline and noise could result since talking was stimulated in the units. The other rater who had worked with the units permitted the students to choose their partners and she felt they worked very well together. Lack of flexibility and the disadvantage of floor outlets were mentioned by others. One panel member questioned the adequacy of the pressing boards. The waste space near the fitting area would be reduced when floor pressing boards were set up according to one judge. She also cautioned that borrowing of equipment results without careful supervision. It is apparent that students need instruction in the proper use of the tables.

CHAPTER VIII

SUMMARY AND SUGGESTIONS FOR FURTHER STUDY

Summary

This study was made: (1) to become familiar with unit sewing center equipment available on the market, (2) to assemble this information into one source, and (3) to learn satisfactions and opinions related to equipment and the arrangement of equipment. New floor plans were then drawn incorporating the knowledge gained through visits to eleven high schools; correspondence with manufacturers, retailers, and school personnel; and a questionnaire distributed to college and secondary school clothing construction teachers working with unit sewing center equipment.

An interest in building and remodeling clothing rooms was evident since the majority of the teachers were working in new or recently remodeled departments. Those teaching in older buildings indicated plans for new housing within the next few years. However, some of the new clothing rooms and the ultra modern kitchens had little in common in regards to efficiency and planning.

The tendency today is to omit the separate fitting room because fitting demonstrations have value and should be viewed by all the students. Folding screens or sliding accordion type doors were popular means of gaining privacy. Grooming centers were more important at the senior and junior high school levels. Teacher demonstration units were considered desirable by approximately two-thirds of the teachers but not too many had one currently. They were more common at the

college level. Although either the straight or parallel arrangement of equipment was satisfactory for a teacher demonstration unit, the prime concern should be its convenience. Three-fourths of the college group and one-half at the senior and junior high school levels indicated that a demonstration mirror would be desirable. Storage for personal items carried by the students was provided in approximately one-half of the schools and particularly at the college level.

Co-operative efforts between manufacturers, architects, cabinet makers, and home economics teachers have resulted in unit sewing center equipment designed to meet the special needs of modern clothing laboratories. Five manufacturers and three sewing machine companies were found to make standard models of self-contained unit tables and unit tables. Many are similar in size when closed but differ in size and shape when the equipment is in use. The common shape when open is  . The majority of the sewing machines roll out from under the table. When in use the heads lift out as in the conventional type of cabinet. Of the five models studied, four were constructed of wood and the other one of steel. Some changes were indicated by the teachers to make the equipment more useful. The sewing machine company unit tables were all made of wood and have several unfavorable features which limit their function. One to two students were assigned to a unit at the colleges while four was the common number for the secondary schools. Although chairs with plastic molded bodies and metal legs appeared to be popular in the newer departments, the majority of the rooms were furnished with wooden chairs with backs. Unit sewing center equipment can be very expensive depending upon the type utilized.

Formica or other laminated plastics were the most common table surface. Natural finishes were preferred over colors. Preferences for the type of press board to be used in each unit were very dissimilar. In regards to small equipment for each unit, the college teachers were

most concerned with pressing items while the junior high school segment mentioned these pieces the least often. Pressing equipment was quite important to the high school group. All three levels mentioned self-contained unit tables as the type of equipment they would prefer to have in their clothing rooms. Floor outlets were the most satisfactory for self-contained unit tables and unit tables. Wall outlets were satisfactory for three-fourths of the teachers who had a unit arrangement.

Traffic, movement, and time wasted waiting for equipment were the most frequently mentioned disadvantages of the group arrangement. Opinions regarding unit sewing center arrangements indicated they were more orderly, easier to supervise, and resulted in more student and teacher satisfaction and carry over for efficiency in home sewing. The unit arrangement appeared to be the most suitable type for an all-purpose room due to its flexibility.

The two proposed floor plans for a specific clothing laboratory received higher ratings than the present group arrangement plan although the ratings had limitations. The unit arrangement plan would be the least expensive one since it involves the rearrangement of present equipment. The major expenses would be the removal of a wall section, some additional wall outlets, and the purchase of more pressing and small equipment. The self-contained unit table arrangement would be far more costly because it necessitates major remodeling of the room in addition to the purchase of new and more equipment.

When this study began, the author intended to make recommendations of equipment and its arrangement. She now feels that each teacher and school must make their own decision as to the type and arrangement that will best serve their needs. It is hoped, however, that this assemblage of information pertaining to unit sewing center equipment will be useful toward that end.

Suggestions for Further Study

After having completed this study, the writer feels that research on the following suggestions would be helpful:

1. Studies to determine equipment and arrangement preferences of adult women enrolled in evening clothing construction courses.

2. Studies to determine student preferences for equipment and its arrangement at the three levels--college, high school, and junior high school.

3. Studies to determine the most satisfactory size table for a unit arrangement of equipment.

4. Studies to determine the actual time and motions saved with a unit arrangement or a self-contained unit table plan as compared with a group arrangement.

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Diagram with report and letter from A. Dee Glover, Glover Manufacturing Company, Box 4093, Austin 51, Texas, May 18, 1961.

APPENDIX I

INSTRUMENTS

OBSERVATION AND INTERVIEW RECORD SHEET

School — Teacher
Address — Date

Length of class period?
Number of students? — REQUIRED — ELECTIVE

Grade level?
Projects being made?

Manufacturer of tables, cupboards, etc.?
Address of Manufacturer?

Amount of time taken by class on observation day to start working on projects? _____

Brief description of major types of equipment.

TABLES — SIZE _____ NO. ___

CHAIRS

MACHINES — NO. ___

PRESSING — NO. BOARDS _____
NO. IRONS _____

CUTTING

Is there a teacher demonstration area? YES NO
How are demonstrations conducted?

Is a place provided for books, purses, etc.? YES NO
If yes, where?

Room traffic or amount of movement in room. MUCH SOME VERY LITLE NONE

Students remain in own area. ALL THE TIME MOST OF THE TIME PART OF THE TIME

Standing in line waiting for use of equipment. MUCH SOME VERY LITTLE NONE

Talking or visiting among students. MUCH SOME VERY LITTLE NONE

Students working on assigned projects. ALL MOST SOME NONE

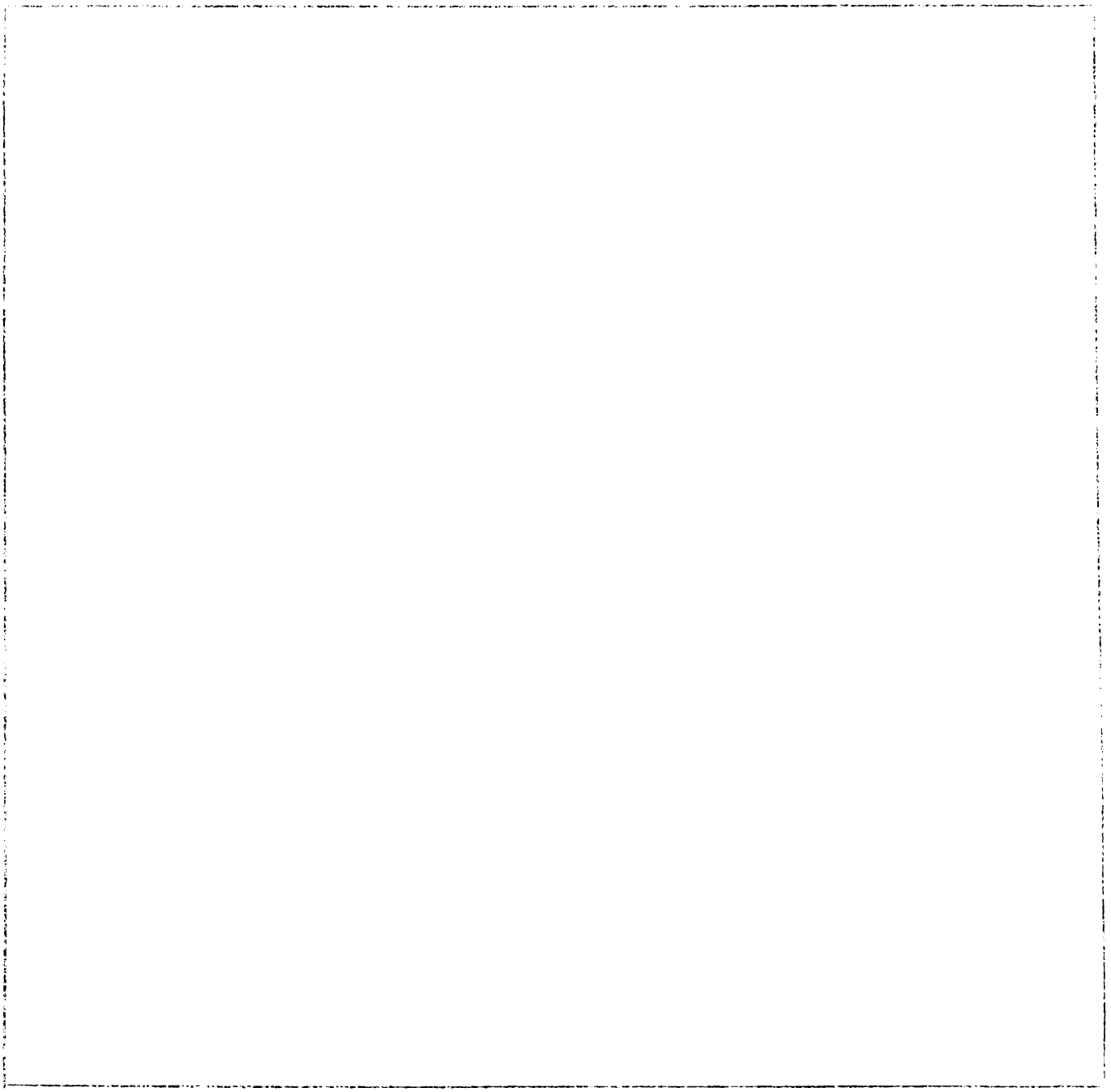
Students doing other than what is expected. ALL MOST SOME NONE

Cooperation between teacher and students. MUCH SOME VERY LITTLE NONE

Amount of time taken by students on observation day to put project and supplies away. ___

Was equipment checked? YES NO
If yes, in what manner?

General impression of learning experience and students attitude toward their project.



Approximate floor plan of room and the following areas: CUTTING
SEWING
PRESSING
FITTING ——
STORAGE OF EQUIPMENT
STORAGE OF GARMENTS ——
STORAGE OF TOOL TRAYS - -

Owen Hall 424
Michigan State University
East Lansing, Michigan
April 10, 1961.

Dear Fellow Home Economist:

As a graduate student in the Textiles, Clothing, and Related Arts Department of the College of Home Economics at Michigan State University, I am making a study of the unit arrangement of equipment used in clothing laboratories. I am interested in the types of unit tables and equipment now in use, and also in the opinions of other teachers who have had experience with various arrangements.

A compilation of information of this type is of great value to teachers of clothing who are also contemplating department changes. Your willingness to fill in the enclosed questionnaire and share your experiences will be greatly appreciated.

Please return the completed questionnaire in the enclosed self addressed and stamped envelope on or before April 21, 1961.

Thank you for taking time from your busy schedule to contribute valuable information for this study.

Sincerely yours,

Betty Lou Oberg

Betty Lou Oberg
Student

Margaret C. Hearn

Mrs. Margaret C. Hearn
Faculty Advisor

QUESTIONNAIRE

INSTRUCTIONS: To be filled in by teachers who teach in rooms equipped with some form of unit arrangement of clothing construction equipment. Valuable information of benefit to others who are contemplating room changes can be secured if you will give some of your time and answer the following questions as accurately as possible.

I. BACKGROUND INFORMATION

Directions: Check the blank which most nearly applies to you and your teaching situation, or fill in the blank with the appropriate numbers requested.

1. The level at which you teach.
___ College or University, ___ High School, ___ Jr. H.S., ___ Other _____ specify

2. The type of building in which you teach.
___ New department, ___ Remodeled department, ___ Other _____ specify

3. The room in which you teach is equipped for:
___ Clothing study only, ___ Multi-purpose, ___ Other _____ specify

4. Room size (floor space).
_____ Length _____ Width

5. Directions: Check or fill in the columns which best describes your units and give the additional information requested.

UNIT TYPE	check one	COMMERCIAL DESIGN (Give name and address of Manufacturer)	COMMERCIAL DESIGN WITH VARIATION (Please describe)	OWN DESIGN ***
Self-Contained Unit Table A unit containing an ironing board and pressing equipment, sewing machine, cutting and working space, and storage in one table.				
Unit Table Incorporates only some of the above features. If this type is checked, please indicate which features are included. _____ _____				
Unit Arrangement Traditional laboratory equipment, i.e., sewing machine, all purpose table, and pressing equipment organized in one area.				

*** Describe of sketch if you wish to share information. You may use the other side of the paper if you wish.

6. What is the approximate cost per unit? _____

7. Can the unit be moved and rearranged? ___ Yes ___ No

8. How many units are contained in the room? _____

9. How many students are accommodated in each unit? _____

10. How many classes use the equipment each day? _____

11. Would you make changes if you were making a selection or designing a second time? ___ Yes ___ No

12. If the answer is Yes to question 11., will you please explain. _____

_____

_____

13. Would the equipment be suitable for an all purpose room?
___ Yes ___ No

14. Have you previously taught using the Group Arrangement of equipment (Machines placed against the wall, tables in the center of the room, with pressing equipment at various places)?
___ Yes ___ No

15. Does the Group Arrangement have disadvantages?
___ Yes ___ No

16. If the answer is Yes to question 15., will you please explain. _____

_____

_____

II. ARRANGEMENT OF THE UNIT AND ITS EQUIPMENT

Directions: Place a check in the blank which most nearly applies to your teaching situation. The word Unit refers to any of the three types, Self-Contained Unit Table, Unit Table, or Unit Arrangement as defined in part I.

1. Are your units arranged in:
___ Rows, ___ Pairs, ___ Back to back, ___ Other _____ (specify)

2. Do the students sit:
___ Opposite each other ___ Beside each other
___ Diagonally across ___ Other _____ (specify)

3. The shape of the units (Check in proper column).

SHAPE	IN USE	NOT IN USE
Rectangle		
L		
Octangonal		
U		
Other(specify)		

4. Give the number of square feet of floor space the unit covers:
_____ In use _____ Not in use

5. The surface covering of the table is:
___ Formica, ___ Wood, ___ Cork, ___ Other _____
specify

6. Is this satisfactory?
___ Yes ___ No

7. If the answer is No to question 6., please explain._____

_____

8. What do you prefer on the table surface?
___ Colors, ___ Natural finish, ___ Other _____
specify

9. Type of sewing machine used:
___ Built in, ___ Portable, ___ Separate cabinet

10. Type of chair used (Check in proper column):

TYPE		MATERIAL		
Bench or stool	Chair with back	Metal	Wood	Plastic

11. Source of electricity:
___ Wall outlets, ___ Floor outlets, ___ Other _____
specify

12. Is source of electricity satisfactory?
___ Yes ___ No

13. Is storage for tote trays provided other than on the work surface when the student is in class?
___ Yes, If Yes, specify _____, ___ No

14. What provision is made for tote tray storage when the student is not in the room?
___ In unit, ___ In room cupboard, ___ In hall cupboard, ___ Other _____
specify

15. Is provision made for storage of purses, notebooks, etc. carried by students?
___ Yes, If Yes, specify _____, ___ No

16. What type and size of pressing board do you prefer for use in a unit?
___ Sleeve board, ___ Skirt board, ___ Standard floor board, ___ Other _____
specify

17. How many girls use one iron?
___ 1, ___ 2, ___ 3, ___ 4, ___ Other _____
specify

18. Is cutting done at unit entirely?
___ Yes ___ No

19. If cutting is done at other than unit, what space is provided?
___ Cutting tables, ___ Counter space, ___ Other _____
specify

20. Check those items of small equipment which you feel are essential in each unit.

___ Tracing wheel
___ Tracing paper
___ Tracing board
___ Cutting shears
___ Small scissors
___ Pressing cushion or ham
___ Pounding block
___ Edge or point presser
___ Pressing cloths
___ T-square
___ Yardstick
___ Transparent ruler
___ Measuring gauge
___ Zipper foot
___ Other machine attachments
___ Others _____
___ _____

21. Do you have a separate teacher demonstration unit or area?
___ Yes ___ No

22. Do you believe that a separate teacher demonstration unit or area is:
___ Essential, ___ Desirable, ___ Unnecessary

23. Do you believe that a demonstration mirror is:
___ Essential, ___ Desirable, ___ Unnecessary

24. If you use demonstration techniques but do not have a separate unit or area, how do you arrange the equipment for a demonstration? _____

_____

25. Do you believe that a separate grooming center is:
___ Essential, ___ Desirable, ___ Unnecessary

III. EVALUATION OF EQUIPMENT ARRANGEMENT

Directions: Check the blank which best represents your opinion.

1. More talking and visiting is done among students using:
___ Unit arrangement ___ Group arrangement

2. A room is more orderly and easier to supervise with:
___ Unit arrangement ___ Group arrangement

3. More garments per student is produced with:
___ Unit arrangement ___ Group arrangement

4. More student and teacher satisfaction results from using:
___ Unit arrangement ___ Group arrangement

5. Carry over for efficiency in home sewing would result from students using:
___ Unit arrangement ___ Group arrangement

6. Would the organized arrangement of traditional clothing laboratory equipment be comparable in use to the Self-Contained Unit Table or the Unit Table arrangements?
___ Yes ___ No

7. My preference of arrangement is:
___ Self-Contained Unit Tables ___ Group arrangement
___ Unit Tables
___ Unit Arrangement

8. Please explain your choice.

EXPLANATION SHEET
(Planned for 24 Students)

Group Arrangement:

1. Demonstration area formed by bringing machine 20 closer to desk. An extension cord is connected to outlet on West wall. Pressing is done on the desk.

Explanations Common to Both Proposed Plans:

1. Wall section that formed fitting room removed.

2. Built-in storage cabinet in former fitting room near machines is very high with heavy wooden sliding doors. Items used infrequently will be stored on right side so that machines will not have to be moved very often.

3. Triple mirror is stationary.

4. Standard floor ironing boards may be used at new outlets on East wall for final press of garments.

5. Equipment is illustrated in use.

6. New outlet on short West wall.

Unit Arrangement:

1. The present equipment has been rearranged into organized units.

2. Plan does not consider possibility of floor outlets. An extension cord of heavy rubber will be required. It will lie under the table between table legs. Cords will have to be crossed only at demonstration unit and unit IV. Here the cord will have to be covered and made stationary.

3. An outlet added at each cut and press table. Outlets raised with signal lights added.

4. Demonstration unit pressing area may be utilized by students, but not machine.

Self-Contained Unit Tables:

1. The Glover Homemaking Unit has been used. It contains all necessary pressing equipment including built-in press boards, two sewing machines, cutting and working space, and storage of all items including student's supplies, and seats four.

2. Additional outlet on South wall.

3. Floor outlets would be required for this arrangement.

EVALUATION OF FLOOR PLANS
(Planned for 24 Students)

Type of arrangement _____
(Fill in)

DIRECTIONS: Do all three floor plans.
Use one sheet for each floor plan.
Read the explanation sheet.
Rate each question according to the scale: 4 EXCELLENT
3 GOOD
2 FAIR
1 POOR
Circle the number you choose.

1. Travel distance to various areas. 4 3 2 1

2. Accessibility to: Cutting area, 4 3 2 1 Sewing area, 4 3 2 1 Pressing area 4 3 2 1

3. Probable lack of confusion. 4 3 2 1

4. Visibility of demonstration area. 4 3 2 1

5. Comfort and convenience in use. 4 3 2 1

6. Amount of equipment for 24 students. 4 3 2 1

7. Efficiency of plan as a whole 4 3 2 1

8. Suggestions and comments.

APPENDIX II

LIST OF SCHOOLS VISITED

LIST OF MANUFACTURERS

SCHOOLS WHERE CLOTHING CLASSES WERE OBSERVED

Illinois

Bloom Township High School
Chicago Heights

Thornton Township High School
Harvey

Indiana

Griffith High School
Griffith

Hammond High School
Hammond

Roosevelt High School
East Chicago

Horace Mann High School
Gary

Tolleston High School
Gary

William Wirt
Gary

Michigan

Everett High School
Lansing

Holt High School
Holt

Mason High School
Mason

*Tawas Area High School
Tawas

*Slides Viewed--Available on loan from: Office of Vocational Education, Department of Public Instruction, P. O. Box 928, Lansing 4, Michigan.

LIST OF COMPANIES KNOWN TO BE MANUFACTURING UNIT SEWING CENTER EQUIPMENT

June 1961

E. L. Erickson Products (Ames Powercount Company)
Brookings, South Dakota

Geneva Modern Kitchens Company
Geneva, Illinois

Glover Manufacturing Company, A. Dee Glover
Box 4093
North Austin Station
Austin 51, Texas

Hamilton Manufacturing Company
Two Rivers, Wisconsin

J. J. Lane Company
2141-47 West Iowa Street
Chicago 22, Illinois

Mutschler Brothers Company
Nappanee, Indiana

St. Charles Manufacturing Company
St. Charles, Illinois

Singer Sewing Machine Company
Central Agency
P. O. Box 648
General Post Office
Kansas City, Missouri

Necchi Sewing Machine Sales Corporation
164 West 25th Street
New York 1, New York

White Sewing Machine Corporation
Cleveland 11, Ohio

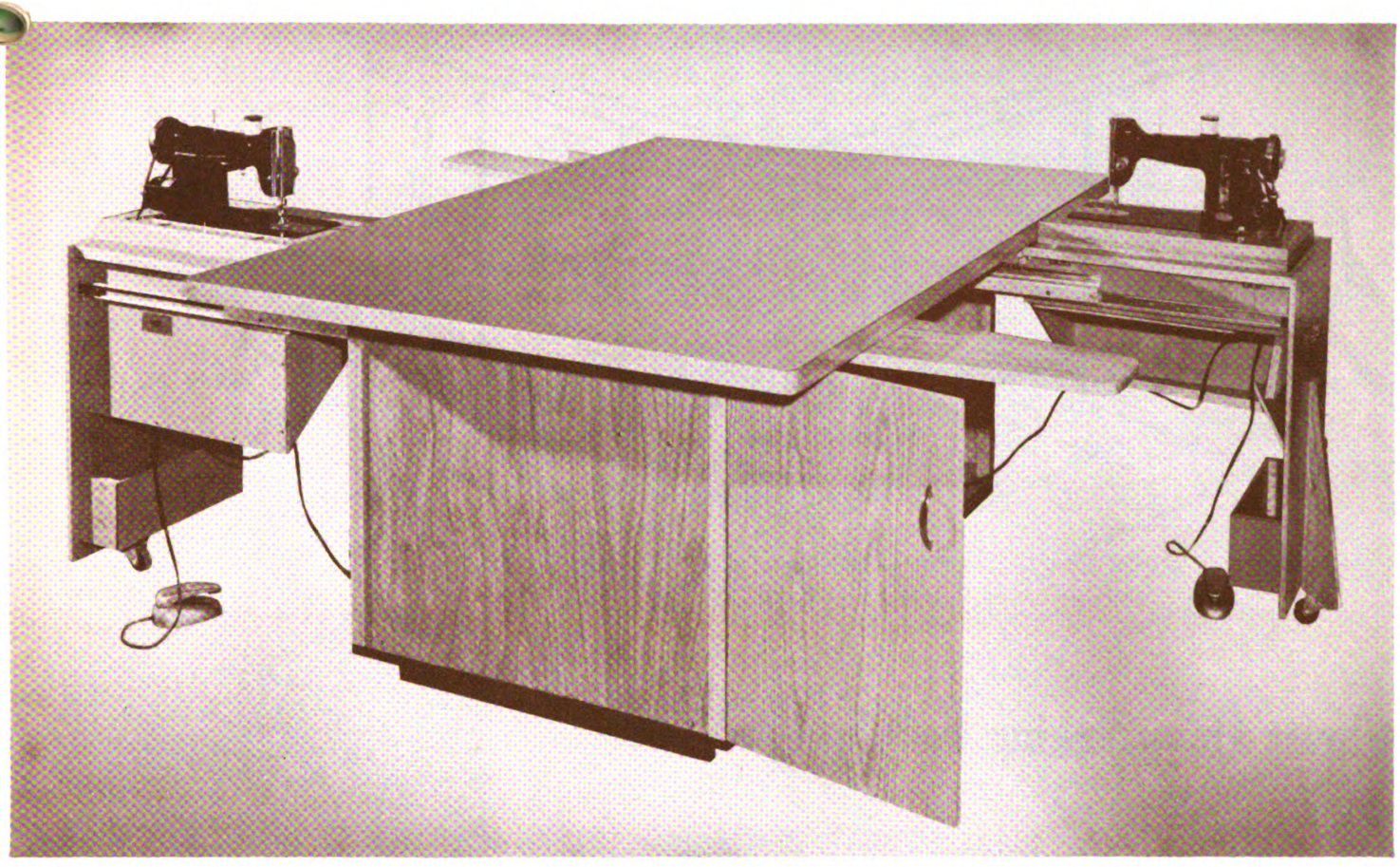
APPENDIX III

COMMERCIAL LITERATURE

PHOTOGRAPHS COURTESY OF
GLOVER MANUFACTURING COMPANY

GLOVER HOMEMAKING UNIT

ELIMINATES COST AND CONFUSION OF "TOTE TRAY" METHOD



Equips your students for faster learning

Glover HOMEMAKING UNIT

A single Glover Homemaking Unit supplies 10 to 20 students per day with equipment for successful learning.

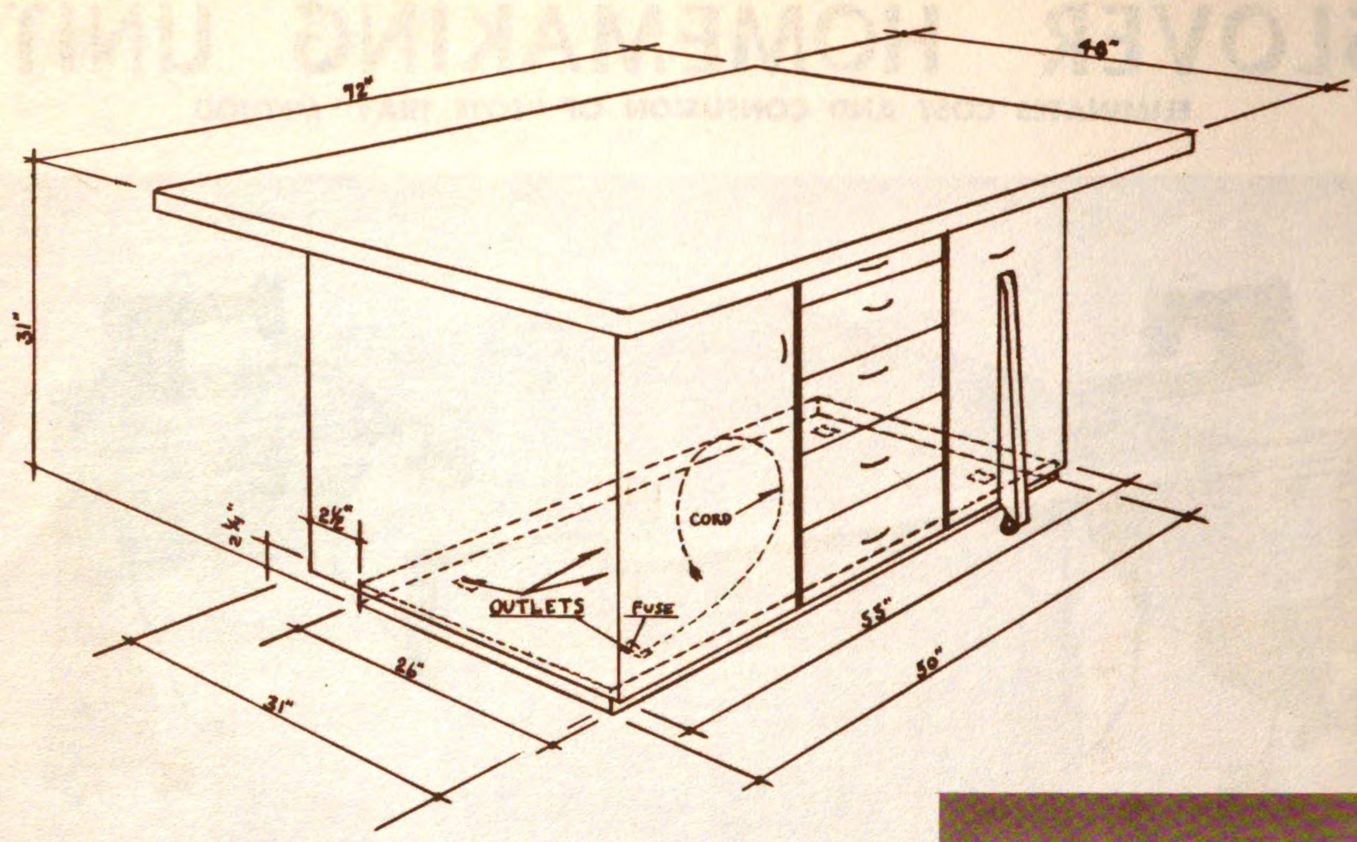
Teaching efficiency increases as much as 100%!

Total costs for homemaking laboratory installation using modern Glover Homemaking Units is below cost of "old style" installations.

Complete student storage built into each Glover Homemaking Unit eliminates cross room traffic confusion typical of "tote tray" methods.

The 4' x 6' Micarta top doubles as a dining table and a table for group work in an "all-purpose homemaking laboratory."

1 CUT and PIN
2 SEW
3 PRESS SEAMS
4 STORE



Glover Homemaking Unit Specifications

EACH UNIT CONSISTS OF:

ONE 4' x 6' HEAT RESISTANT MICARTA COVERED BLOND TABLE TOP laminated to a ¾" stabilized core under pressure with waterproof glue.

TWO SEWING MACHINE CABINETS support the sewing machines level with table top when open for use. A post with rubber roller is adjustable to compensate for floor imperfections. Cabinets are mounted on double-extension, heavy-duty ball bearing glides and rubber roller so as to roll under and store the sewing machines leaving a free table overhang of 8½".

TWO IRONING BOARDS mounted in closets; each closet has one shelf and one removable asbestos-backed metal iron support and cord storage rack.

TWENTY STUDENT STORAGE COMPARTMENTS . . . ten drawers (five on each side) with a removable divider. The drawer size is approximately 1190 cubic inches or 17" x 14" x 5".

EACH sewing machine cabinet and one of the ironing board closets has a double plug. The other ironing board closet has a single plug and fuse for the complete circuit; ironing boards are installed to fold into their closets which have doors equipped with magnetic catches. The entire cabinet structure is made of ash and other first quality materials and each piece is sealed on all surfaces and edges. All outside surfaces are smooth-sanded, filled, sanded, sealed, sanded, sealed second time, sanded, two coats tinted lacquer and one coat high solids water clear lacquer applied as final coat. All assembly is done with waterproof glue and screws; all screws being set into holes which are predrilled with drills ground to a taper which fits the solid body of the screws. The unit is three dimensionally braced and assembled so that it can be disassembled for convenience in shipping or moving. Each functional part can be easily removed for repairing or replacement by simply removing screws. All units are mounted on island base to provide 2½" toe space on all four sides. Locks and/or casters are available on special order only. Sewing machines are quoted separately.

LET US HELP YOU PLAN

YOUR SCHOOL IS INVITED to utilize the complete planning service provided by the Glover Manufacturing Co. and its distributors who will work with you and your architect in planning the most efficient use of Glover Homemaking Units.

LET US ASSIST YOU in the early planning stages whether you plan a full installation for a new school, a partial installation to make more efficient use of your present space, or a temporary installation to be moved into a new building.

PLANS OF SUCCESSFUL INSTALLATIONS and a list of schools using the Glover Homemaking Units are all available from your local distributor.

A GLOVER PRODUCT
Designed & Mfgd by A. Dee Glover Austin, Tex.

GLOVER HOMEMAKING UNIT
SPECIFICATIONS

Patent No. 176,848

1. The General Contractor shall furnish and install (no. units)_____ _____ _Glover Homemaking Units manufactured by the Glover Manufacturing Company, P. O. Box 4093, Austin 51, Texas.

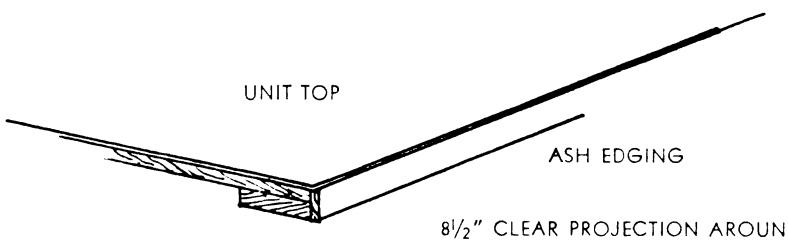
2. **MATERIALS:** All lumber used for the construction of the Glover Homemaking Unit shall be of select hardwood, clear and sound, free from checks, and warping. Hardwood shall be of ash and elm. The exposed exterior shall be select hardwood, selected for the beauty of grain design. Inner partitions shall be of Novoply selected for strength and freedom from warping.

3. **ASSEMBLY:** All assembly shall be done with waterproof glue and Phillips screws; all screws shall be set into holes which shall be predrilled with drills ground to a taper which fits the solid body of the screws. All units are mounted on island base to provide 2½" toe space on all four sides.

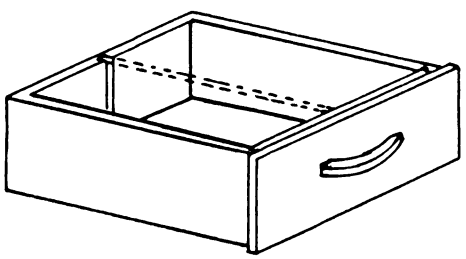
   The units are three dimensionally braced and assembled so that they can be disassembled for convenience in shipping or moving. (Units are approved for K.D. shipping rates—85% First Class—approximate weight 400#).

4. **HARDWARE:** **a.** All drawer and door pulls shall be chrome plated of smooth modern design with through bolts.
   b. Ironing board closet doors shall be equipped with a magnetic catch.
   c. All hinges shall be brass plated of smooth modern design.

5. **TOP:** Top shall be 4' 0" x 6' 0" heat resistant Micarta (or equal) table top laminated to a ¾" stabilized core under pressure with waterproof glue. Edges of top shall be reinforced and a ½" x 1½" ash strip around top to prevent damage to edge of unit. All edges shall be beveled and free of cracks.



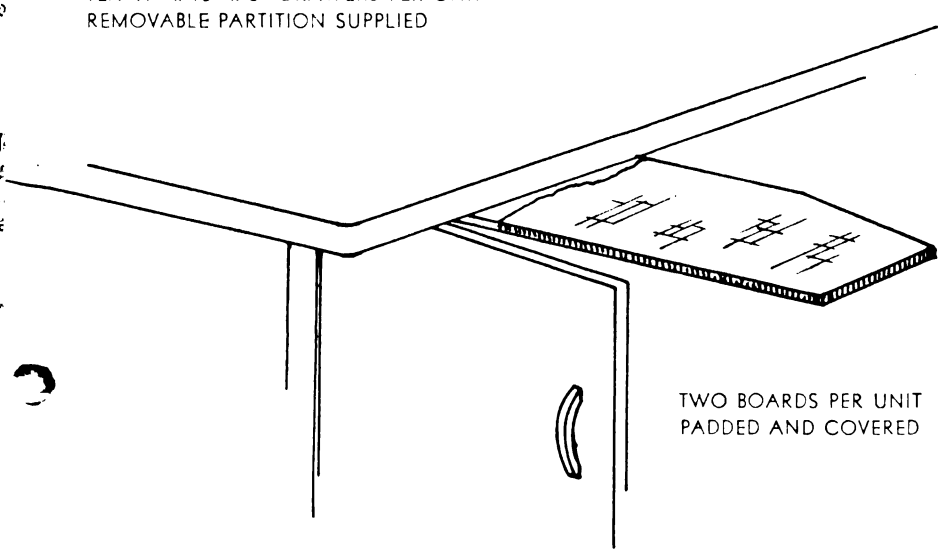
VIEW OF TOP EDGING



VIEW OF DRAWER

TEN 17" x 15" x 5" DRAWERS PER UNIT
REMOVABLE PARTITION SUPPLIED

6. **STORAGE COMPARTMENTS:** Each unit shall have ten drawers (five on each side) with a removable divider. Each drawer shall be 17" x 15" x 5". (Maximum storage for twenty students). All drawers shall be of select hardwood and Novoply. Drawer sides shall be ⅜" Novoply. Drawer front shall be ⅝" ash. All corners shall be locked joints. Drawers shall be glued to give a strong, non-warping drawer. Division between drawers shall be solid and dustproof type.

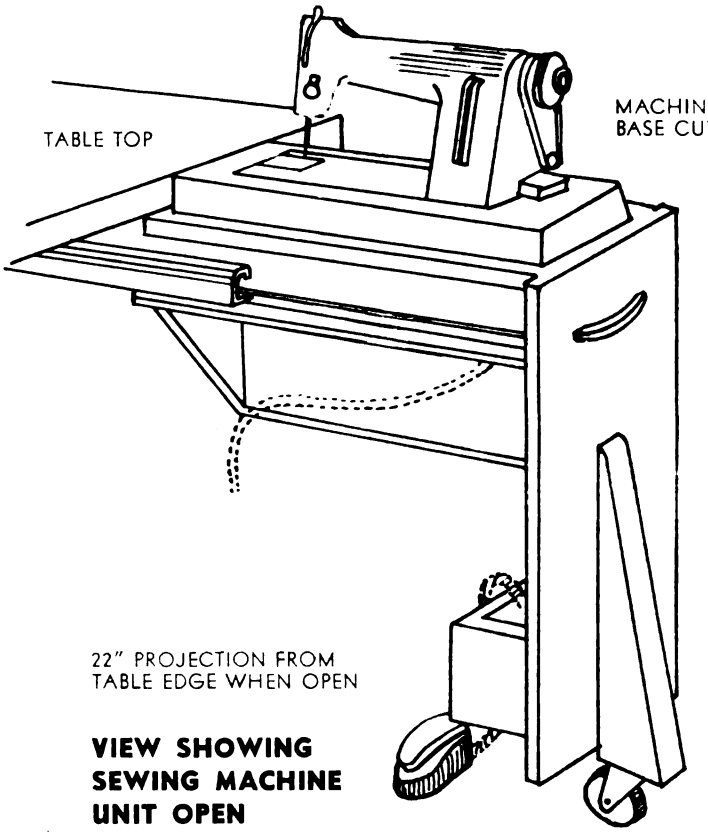


TWO BOARDS PER UNIT
PADDED AND COVERED

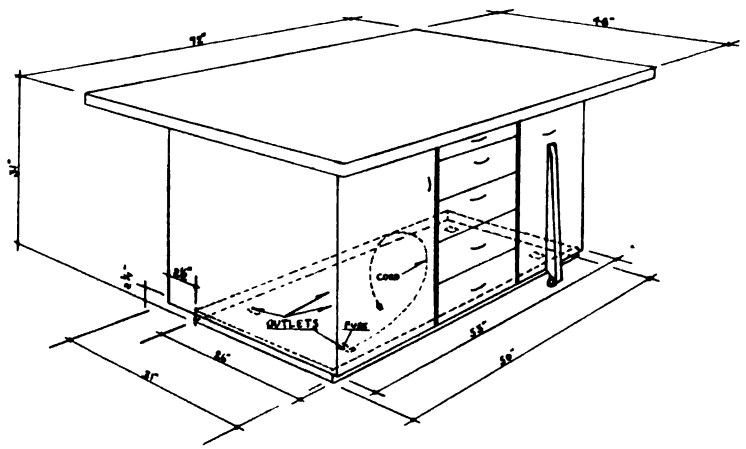
VIEW OF IRONING BOARD

7. **IRONING BOARDS:** Each unit shall have two ironing boards mounted in closets; each closet has one shelf and one removable asbestos-backed metal iron support and cord storage rack. Each ironing board shall be padded and covered by the manufacturer. Each ironing board shall be constructed of ¾" Novoply, equipped with a simple handle locking device.

8. SEWING MACHINE CABINETS: Each unit shall have two sewing machine cabinets. Sewing machines shall be level with table top when open for use. An adjustable post with rubber roller to compensate for floor imperfections shall be fastened to front of each machine cabinet. Cabinets shall be mounted on double-extension, heavy duty ball bearing glides and rubber roller so as to roll under and store the sewing machines leaving a free table overhang of 8½" around table. Projection from edge of table when machine is in use shall be 22". (Sewing machines to be purchased separately.)



VIEW SHOWING SEWING MACHINE UNIT OPEN

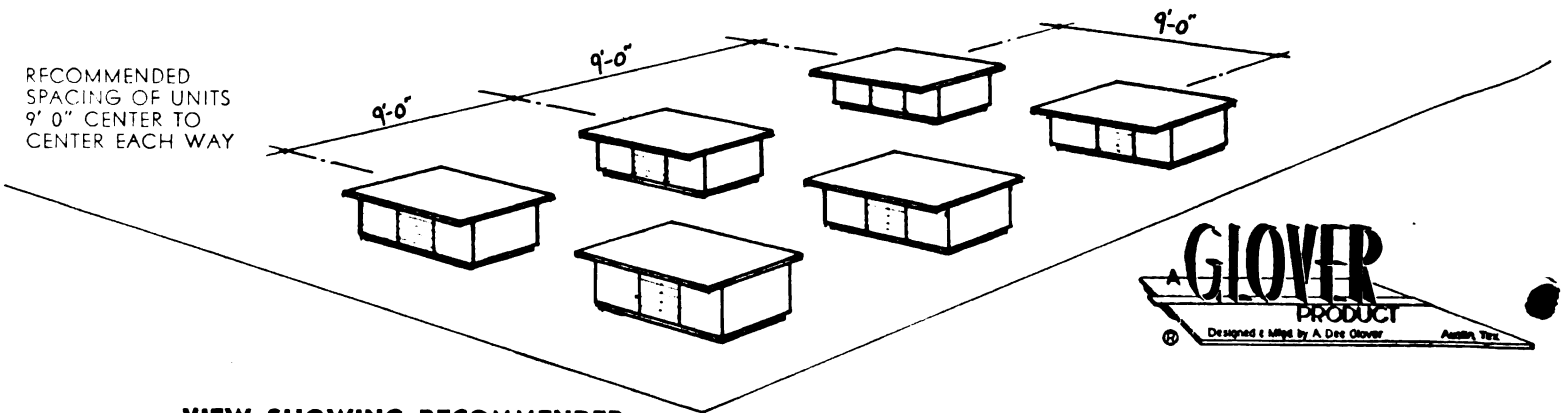


VIEW OF COMPLETE UNIT

9. FINISH: All outside surfaces shall be sanded smooth, filled, sanded, sealed, sanded, sealed second time, sanded, two coats of tinted lacquer (of manufacturer's own formula) and one coat of high solids water-clear lacquer applied as final coat. The finish is natural blond and fade resistant.

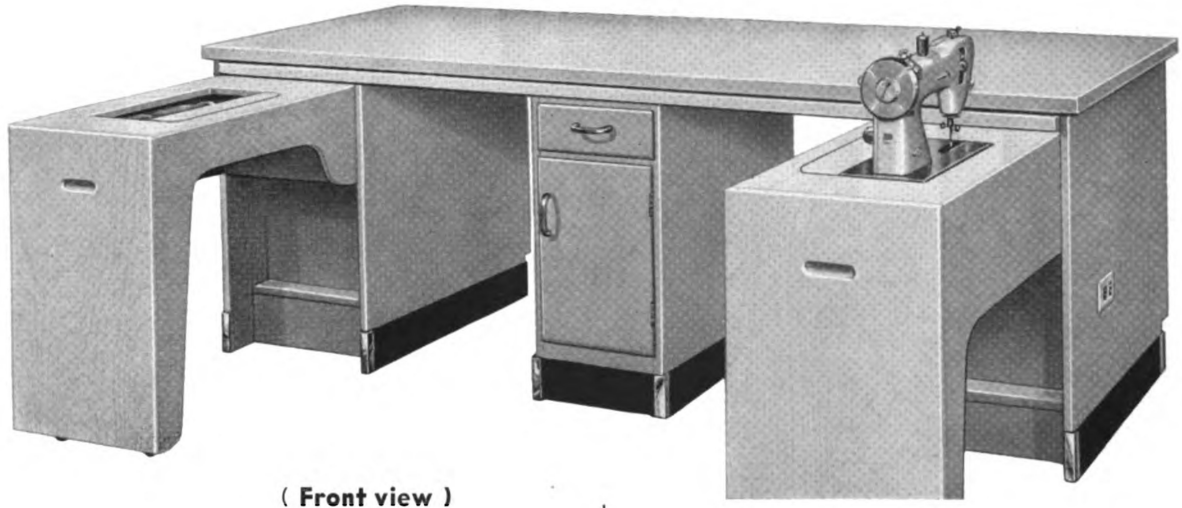
10. ELECTRICAL: Each sewing machine cabinet and one of the ironing board closets shall have a duplex outlet. The other ironing board closet shall have a single outlet and fuse for the complete circuit.

LOCKS AND/OR CASTERS ARE AVAILABLE ON SPECIAL ORDER ONLY.



VIEW SHOWING RECOMMENDED SPACING OF UNITS

GLOVER MANUFACTURING COMPANY
BOX 4093 • AUSTIN 51, TEXAS
PH. HOmestead 5-1470



(Front view)

42H701 STOUT SEWING TABLE

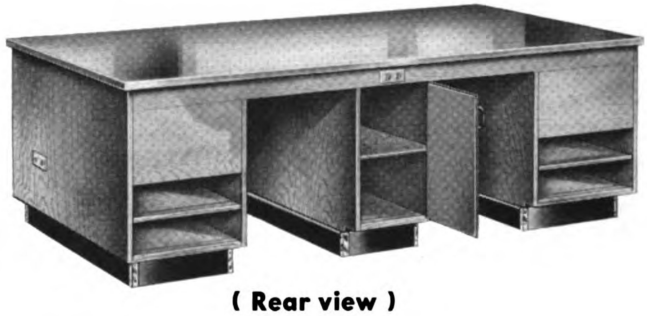
All of the equipment required in the sewing classroom is condensed into this one unit. By simple adjustments it can be converted for sewing, pressing, cutting, pattern design and related activities in the CLOTHING class. At the same time it provides instruction space for individual or group participation. Made of maple and available in colors shown on color chart insert. Tops regularly furnished are 7-ply maple veneer, plastic surface tops are also available.

Specifications

	Length	Height	Width
Overall	90"	31¼"	36"
Center front cupboard	12"	16⅞"	16¼"
Center rear cupboard	12"	20¼"	16¼"
1 front drawer	11¼"	3⅜"	10"
4 tote-tray compartments	16⅜"	4½"	19"

STOUT TABLE VERSATILITY

Machine heads recessed and cutting top extended. Overall working area 90" long x 64" wide. Ample space for high school and college activity.



(Rear view)

STOUT TABLE

The rear of the Stout Table has knee spaces for close-up work, and storage compartments for tote trays. Cupboard has transite shelf for storing hand iron. Balance of cupboard space will accommodate pressing buck and other items.

The stout table provides an all-around utility center. Combined activity of sewing, pressing and studying can be carried on simultaneously.

When it's time for books, the stout table becomes a comfortable, compact study center.

40H301 INSTRUCTOR'S DESK

A pleasant work spot—colorful, comfortable, smart. Clear, hard maple body, plastic or linoleum top, tubular steel legs. Lock is supplied on kneespace drawer. Finished in your choice of six colors.

Specifications

Dimensions	Length	Width	Height	Depth
Overall	54"	26"	30"	
Drawer (kneespace with lock)		15 1/8"	2"	16 1/2"
Drawer (pedestal)		15 1/8"	5 3/8"	16 1/2"
Drawer (file)		15 1/8"	13"	16 1/2"

ALL-PURPOSE TABLES

These tables are suitable for either sewing or foods rooms. Attractive in appearance and of the sturdy construction necessary for school use. Made with or without drop leaves, and available with tote tray compartments, or with guides to engage flanged edge of tote trays (leaving more knee space when trays are not in tables). Also, available without compartments or guides for use as study, food service or general utility tables. Legs equipped with plastic glides.

End panels on tables without drop leaves are set in to provide knee space so students may be seated at all four sides.

Tops regularly furnished are Hamiltex (high pressure laminated plastic) with wide selection of decorator patterns and colors. Linoleum or vinyl tops are available on request.

Specifications

Cat. No.	Length	Width	Height	Drop Leaves	Compartments or Guides (see note below)
42H721	60"	24"	30"	None	None
***42H723**	60"	24"	30"	None	Compartments for 2 Trays
42H724	60"	24"	30"	None	Guides for 2 Trays
42H725	48"	36"	30"	None	None
42H727	48"	36"	30"	None	Compartments for 2 Trays
42H728	48"	36"	30"	None	Guides for 2 Trays
42H729	48"	36"	30"	15" x 36"	None
42H731	48"	36"	30"	15" x 36"	Compartments for 2 Trays
42H732	48"	36"	30"	15" x 36"	Guides for 2 Trays
42H733	60"	36"	30"	None	None
42H735	60"	36"	30"	None	Compartments for 2 Trays
42H736	60"	36"	30"	None	Guides for 2 Trays
42H737	60"	36"	30"	15" x 36"	None
42H739	60"	36"	30"	15" x 36"	Compartments for 4 Trays
42H740	60"	36"	30"	15" x 36"	Guides for 4 Trays
42H741	60"	42"	30"	None	None
42H743	60"	42"	30"	None	Compartments for 4 Trays
42H745	60"	42"	30"	None	Guides for 4 Trays
42H747	60"	42"	30"	15" x 42"	None
42H749	60"	42"	30"	15" x 42"	Compartments for 4 Trays
42H751	60"	42"	30"	15" x 42"	Guides for 4 Trays

*Note: Hamilton tote trays are made in two sizes, 10 1/4" x 18 7/8" x 4" and 14 1/8" x 18 7/8" x 4". Table 42H723 will accommodate the smaller tray only. Other tables will accommodate either size. In 24" and 36" wide tables the trays are inserted lengthwise.

With Guides

With Compartments

Multi-functional equipment for the sewing center

42H705 4-STUDENT TABLE

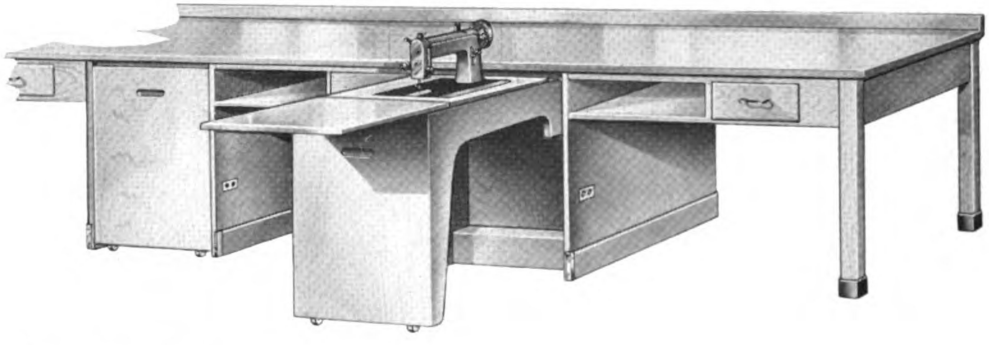
Same general design and construction as 42H701 shown on preceding page, but without extension cutting top. Accommodates four students per class, working on opposite sides of the table.

Has two pull-out sewing machine standards. A hinged cover folds over the sewing head when it is recessed. This cover, open, provides additional working surface when machine is in use. Each working side has a storage drawer and accommodations for two tote trays.

Specifications

	Length	Height	Width
Overall	72"	30"	42"
Overall leaves extended	72"	30"	126"
2 drawers	10½"	4½"	7"
4 Tote Tray Compartments	14⅜"	5¼"	19"

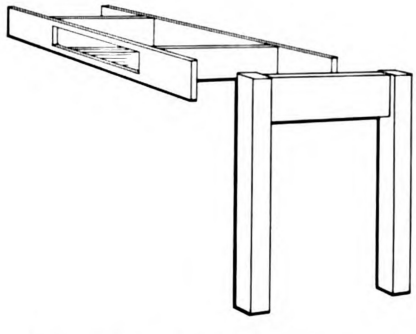
Constructed of northern hard maple. Available in all finishes shown on color insert. Table top regularly furnished is 7-ply maple veneer. Plastic surface also available.



42H707 WALL SEWING UNIT

This individual sewing unit provides a pull-out sewing machine cabinet with folding extension leaf. A battery of these installed along window wall makes an ideal sewing area. Long counter may be used for cutting, or other work. Space between machines may have tote tray compartments and/or drawer. Cabinet size is 18¼" wide x 30" deep x 28¾" high (30" with top).

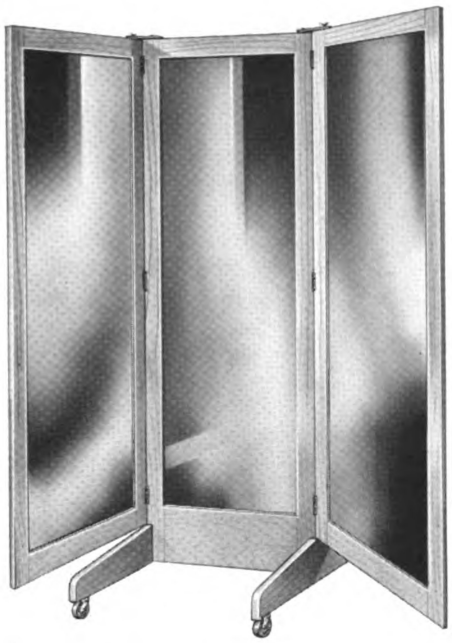
Machine unit extends 27" when pulled out, and leaf extends another 15", or 42" overall. Top may be plastic, linoleum or maple, (see page 21). Top should be not less than 30" deep. Specify type of apron rail to be used between units. Cut out is provided for any make of sewing machine. State make and model number of machine to be used.



42H709 — Apron rail with tote tray compartment for use with 42H707 wall sewing unit. 30" wide, 30" deep and 5¾" high.

42H711 — Apron rail with tote tray compartment and drawer (as shown in illustration with 42H707). 34" wide, 30" deep, 5¾" high.

42H713 — Leg for use at end of wall sewing unit to support 42H709 or 42H711. 30" deep, 28¾" high.



58H303 TRIPLE MIRROR

Three mirrors in maple frames mounted on solid maple base for mobility. Center section is fixed 22" wide x 72" high. Wing sections pivot and are 22" wide x 65½" high. Furnished with casters as standard equipment.

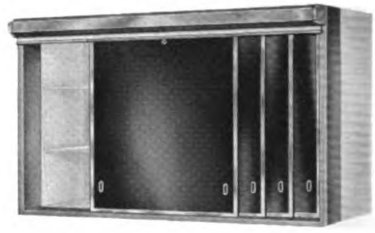
58H305

WALL MIRROR

Similar to 58H303, but without base. Designed for fastening to wall. Overall size 65" x 65". Three mirror panels each 16" x 60".

58H301 FITTING STAND

Has 1¼" linoleum covered top with aluminum molding. Tubular steel legs are equipped with non-skid spherettes. Size 18" x 18" x 12" high.



HORIZONTAL SLIDING CHALKBOARD

58H64 — This unit has four sliding chalkboard panels. Back is open and unit may be mounted on wall, or placed in front of two 10H226 open shelf wall units. Top frame is four inches wide to provide space for mounting projector screen if desired. 71" wide x 6" deep x 48" high.

58H65 — Same as above except 94" wide. May be placed in front of two 10H228 open shelf wall units.

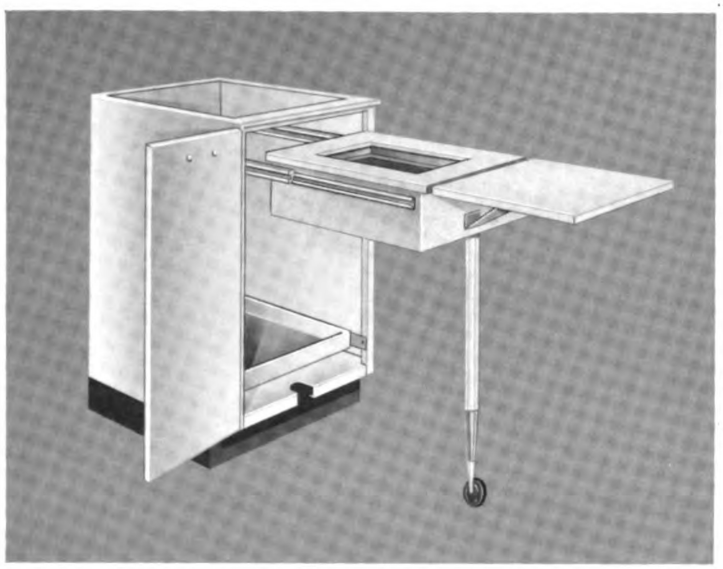
View of chalkboard mounted in front of open shelf units. Note space for projection screen. Screen not included.

58H66 PORTABLE CHALK AND TACK BOARD

Consists of chalkboard on one side and corkboard for posters on the other side. A handy accessory for a wide variety of classroom activity. Moves easily on rubber-tired ball bearing casters. 72" long x 72" high from floor. Board size, 70" long x 38" high.

58H140 CHAIR

Steel and maple construction. Exceptionally sturdy and attractive. Adaptable to dozens of uses in the Homemaking department. Seat is 12" x 13½", 17" high. Overall height 32".



SEWING MACHINE CABINET

Furnished as shown. LH door only (operators position on right side). Slide out top and hinged leaf are plastic laminate, self edged with cut-out and mounting hardware for Singer models 201, 301, 401, 403, 404, Necchi Nova and Super Nova. Sliding shelf with transite bottom for iron storage below. Tubular leg has swivel caster.

X-21SMC — Closed dimensions: 21"W, 24½"D, 34½"H.

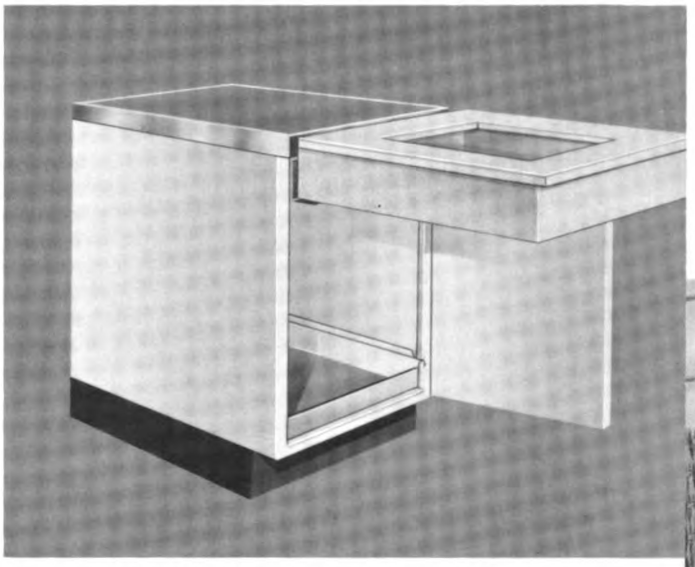
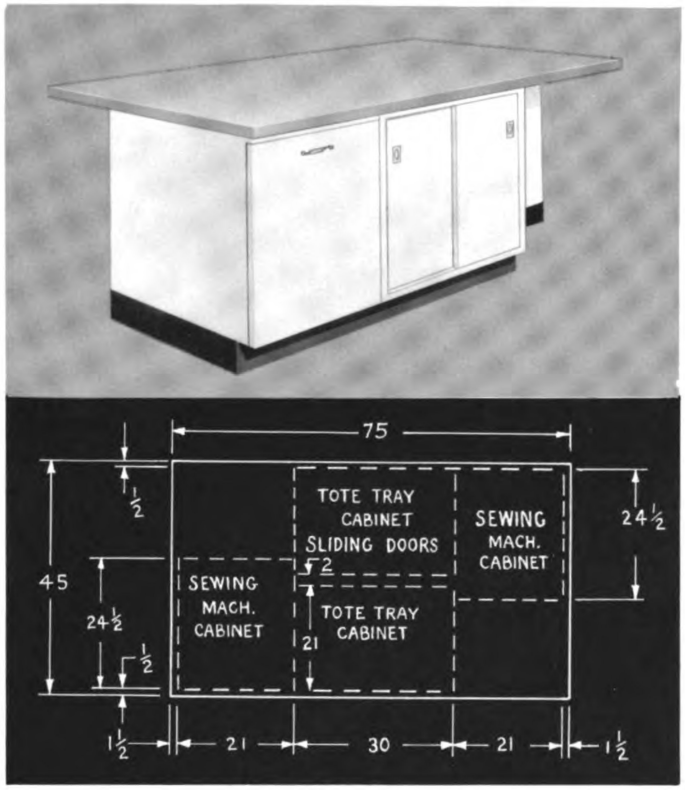


TABLE HEIGHT SEWING MACHINE CABINET

Furnished as shown. RH door only (operators position on left side). Sewing machine top mounted on sliding, lift-up mechanism. Top has plastic laminate finish, is self edged and has cut-out and hardware to fit Singer models 201, 301, 401, 403, 404, Necchi Nova and Super Nova. Sliding shelf with transite bottom for iron storage below. Top not included.

X-21SMC-TH — Closed dimensions: 21"W, 30½"D, 28½"H.



SEWING MACHINE UNIT

This unit consists of two X-21SMC sewing machine cabinets, two X-30 tote tray cabinets 21" deep with sliding doors, a 75"x 45"x 1½" plastic laminate top with self edging, and either 20 - 4¼" tote trays and shelves or 24 - 3½" tote trays and shelves.

X-75SMT — Dimensions: 75"W, 45"D, 36"H.

SEWING MACHINE UNIT
(not illustrated)

Unit consists of two X-21SMC sewing machine cabinets, a 75"x 45"x 1½" plastic laminate top with self edging, and four No. 18TTS tote tray slides. Tote trays are not included.

X-75SMU — Dimensions: 75"W, 45"D, 36"H.

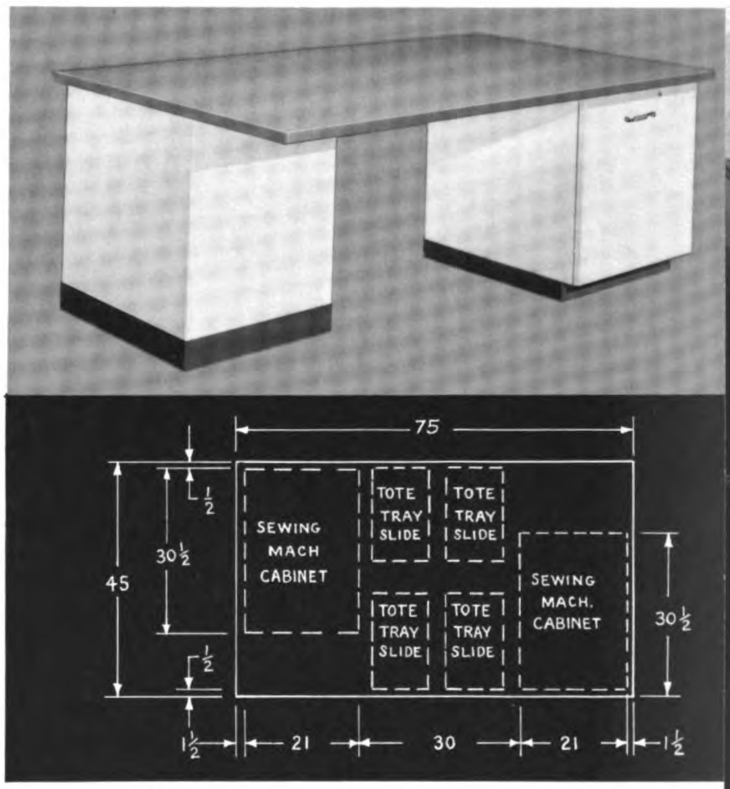


TABLE HEIGHT SEWING MACHINE UNIT

This unit consists of two X-21SMC-TH sewing machine cabinets, a 75" x 45" x 1½" plastic laminate top with self edging and four No. 18TTS tote tray slides. Tote trays are not included.

X-75SMU-TH — Dimensions: 75"W, 45"D, 30"H.

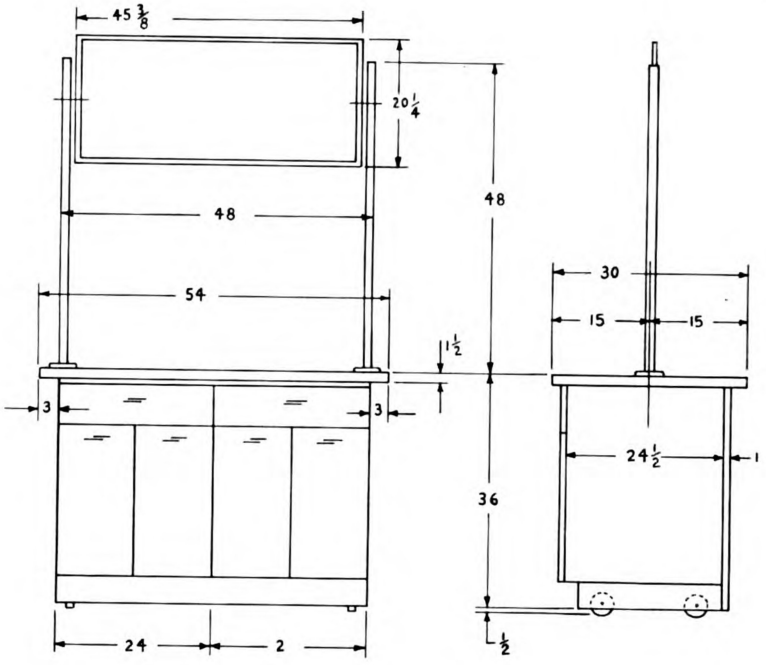
TABLE HEIGHT SEWING MACHINE UNIT
(not illustrated)

Unit consists of two X-21SMC-TH sewing machine cabinets, two X-30 tote tray cabinets 21" deep with sliding doors, a 75" x 45" x 1½" plastic laminate top with self edging, and either 16 4¼" tote trays and shelves or 20 3¼" tote trays and shelves.

X-75SMT-TH — Dimensions: 75"W, 45"D, 30"H.

Outlet, indicator light and switch furnished — to be wired by electrical contractor.

DEMONSTRATION UNIT • SEWING TABLES



DEMONSTRATION UNIT

Ideal for demonstrating to large classes. Unit consists of two X24C base cabinets with casters, one finishing back panel, one adjustable and swiveling mirror assembly and a 54"x 30"x 1 1/2" plastic laminate top with self edging. Mirror area is 44 3/4"x 20".

X-54DU — Dimensions: 54"W, 30"D, 84 1/2"H.

SEWING TABLES

Sturdy tables are available in the following top sizes:

42"x 72"x 1 1/4"
42"x 60"x 1 1/4"
30"x 60"x 1 1/4"

Tops are furnished in plastic laminate and are self edged. Legs are tapered tubular steel with ferrule and self leveling swivel feet. Legs may be finished in chrome, blacktone or Bronzetone. In ordering specify top size, color and pattern and type of leg finish desired.

MUTSCHLER
MULTIPLEX

INSTITUTIONAL
STORAGE
COMPONENTS

DESIGNED FOR THE SPECIFIC STORAGE REQUIREMENTS OF:

Foods Laboratory	Clothing Laboratory
Laundry Area	Grooming Area
Child Care Area	Teachers Lounge
Office and Reception Area	Instrumental Music Dept.
Home Management Area	Arts and Crafts Room
General Storage Area	Private Dining Room

A. I. A. 35-E-12

MULTIPLEX storage units are designed for use in a great variety of locations in the educational building, some of which are illustrated in this folder. Instructor desks, student work tables, art horses and other specialized items of school furniture and equipment of the latest design are available, in addition to built-in units.

All MULTIPLEX units are precision-built of selected kiln-dried northern maple felled on Mutschler's own tracts. Standard wall units are 12″, 15″, 18″, 24″, 30½″, 33″ and 47″ high. Standard base units with counter top are 30″, 32″ and 36″ high. Tall units are 83″ high. Interior fittings are adjustable and removable, adaptable to changing classroom conditions. Component units for use in the foods laboratory accommodate built-in appliances of any make. Color and natural grain finishes are catalytically applied DuPont Dulux, practically impervious to scratches, stains and discoloration. Hardware is modern or traditional, and there is a wide choice of counter top materials which may be supplemented with maple and stainless steel inserts.

The planning and equipping of specialized departments in a modern educational system is a complex undertaking. Our experienced Mutschler design engineers, fully familiar with the many components in the MULTIPLEX line and the unique purpose for which each is designed, will be glad to assist you. Complete information about Mutschler planning service, provided without extra cost, is available upon request.

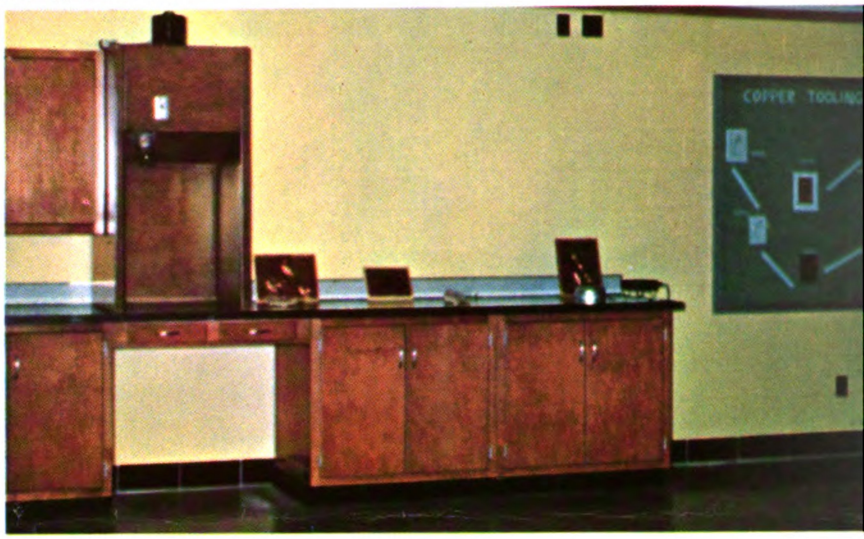
MUTSCHLER
MULTIPLEX

GROOMING AREA has glamorous vanities with gold traditional molding. Theatrical mirrors add a professional touch.

STORAGE WALL with tote/tray storage, drawers and shelves for student supplies.

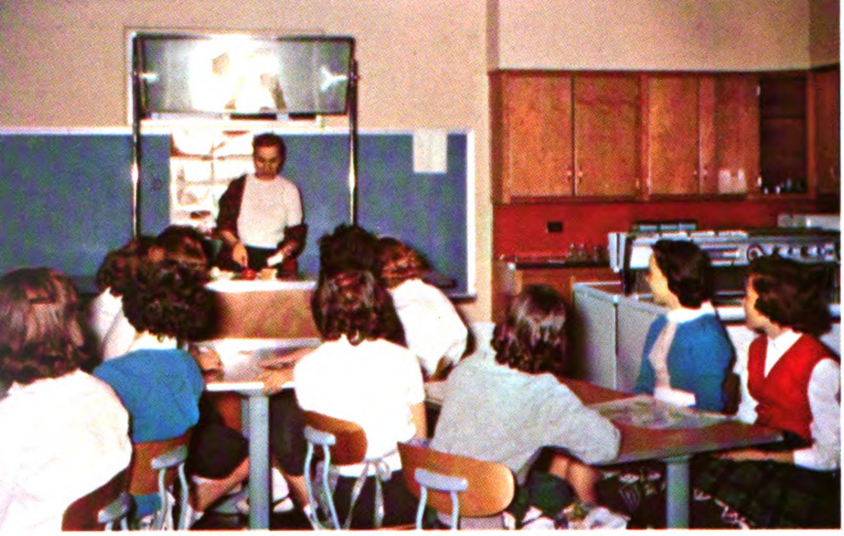
TRIPLE MIRROR and ventilated wardrobe storage units for sewing room.

SPRAY BOOTH (counter top) for craft work, and other floor storage units.

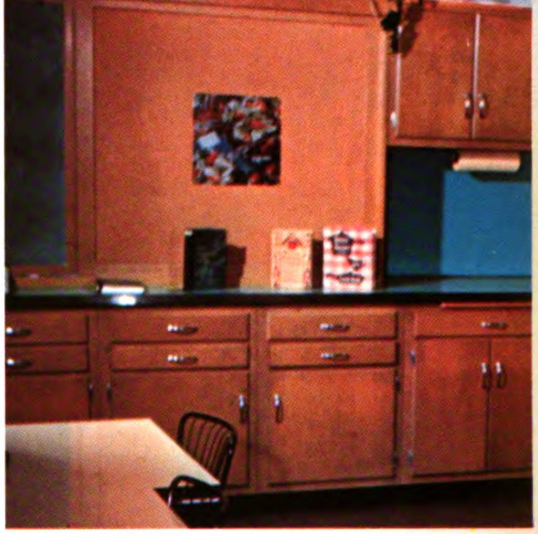


SPECIALIZED STORAGE units along wall keep art and craft supplies orderly. Instructor's desk has file drawer.

SEWING TABLE has fold-away sewing machine, cutting top. Tote/trays fit table and store in utility units.



MOBILE DEMONSTRATOR has adjustable mirror, drop leaves, drawers and shelves for at-hand storage.



CORK TACK BOARD for display and floor units for storage.

LAUNDRY AREA with washer/dryer. Note ventilated cleaning utensil case.

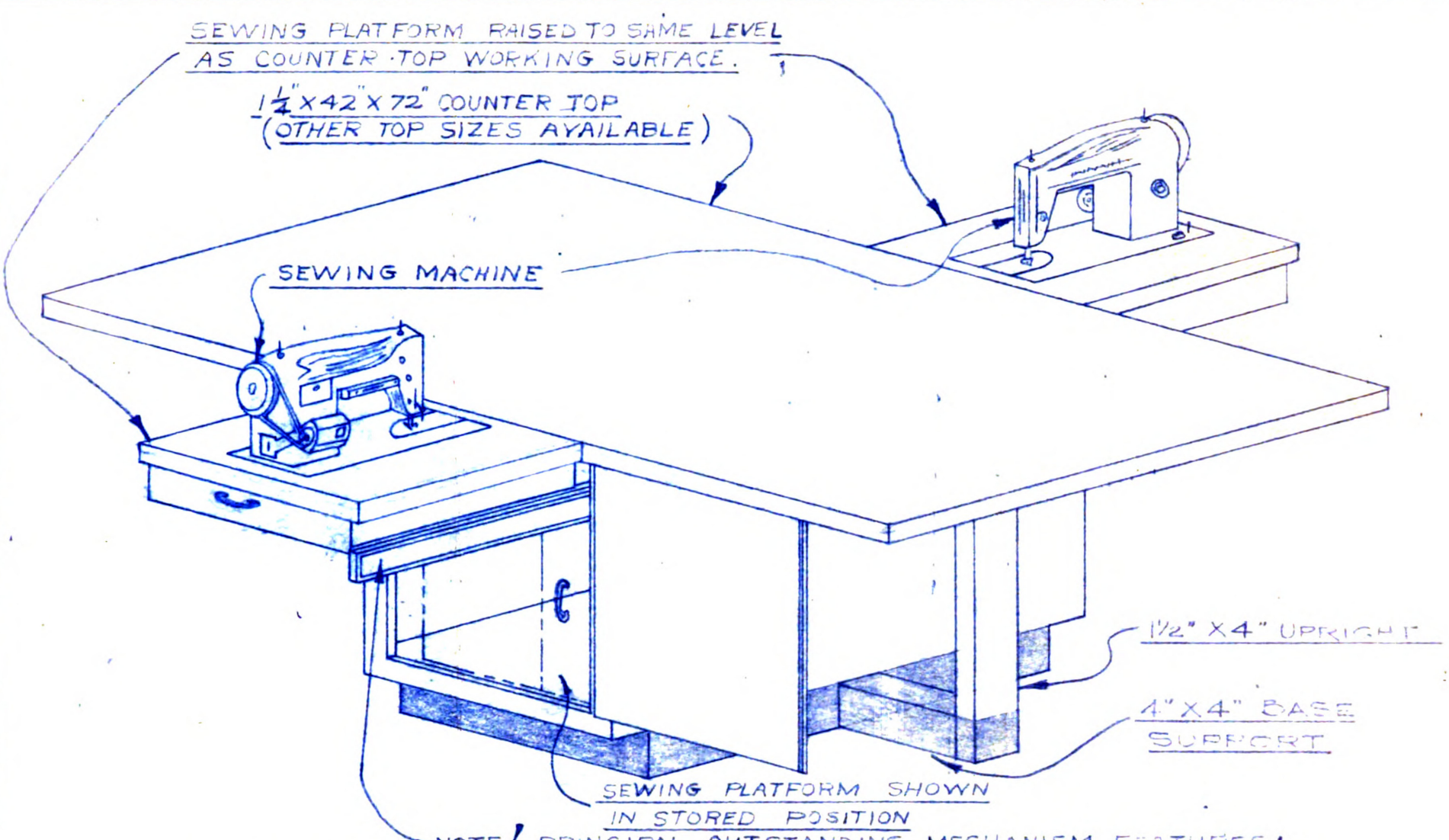
INDIVIDUAL ARRANGEMENTS simulate home kitchens while making best use of laboratory space.

FOOD PREPARATION peninsula with sinks, drop leaf, storage for two students.

MUTSCHLER
BROTHERS
NAPPANEE
INDIANA

H-4272-DP

MUTSCHLER BROTHERS



NOTE! PRINCIPAL OUTSTANDING MECHANISM FEATURES:

SEWING MACH. PLATFORM MOUNTED ON BALL-BEARING SLIDE TO PERMIT EASE OF OPERATION.

PLATFORM EASILY RAISED TO SEWING POSITION ASSISTED BY EQUILIBRATOR SPRING. PROVIDES RIGID VIBRATIONLESS SUPPORT.

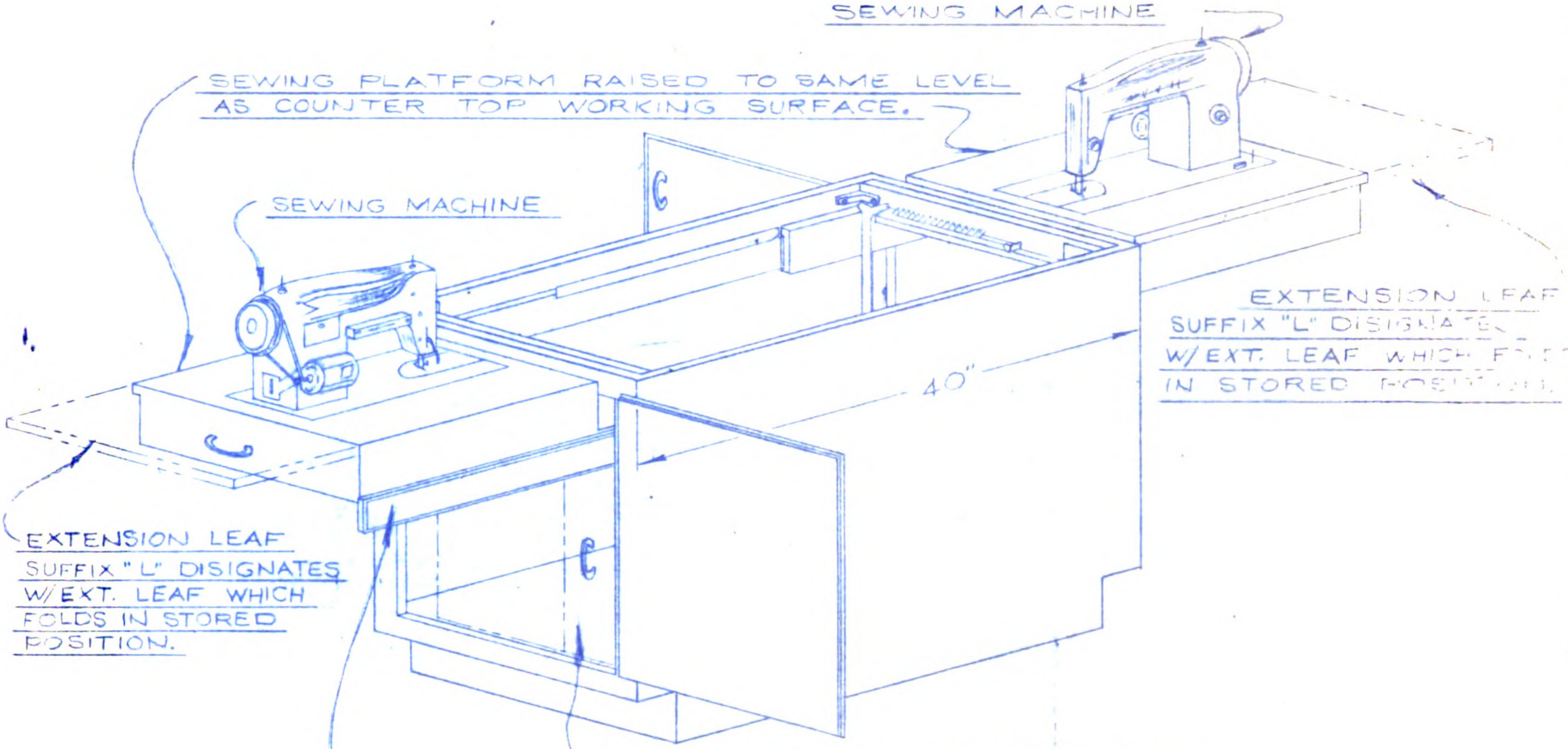
WHEN RAISED IT LOCKS IN POSITION AUTOMATICALLY & CAN NOT BE ACCIDENTALLY RELEASED.

MUTSCHLER BROTHERS

DWN. BY - MARTIN	DATE - 6 - 8 - 59	SCALE - 1" = 1' - 0"	DWG. NO. FIX. - 59-511-2

H-E21-35 H-E21-35-L

MUTSCHLER BROTHERS



SEWING PLATFORM SHOWN IN STORED POSITION

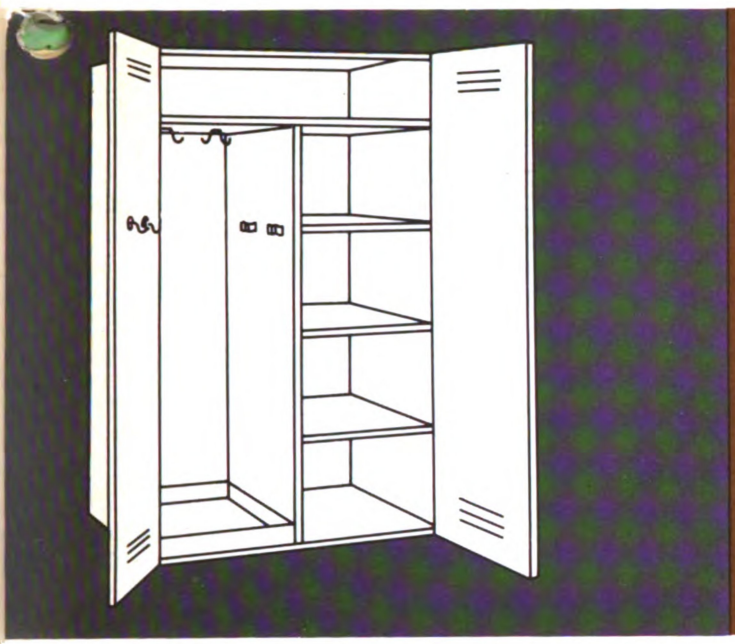
NOTE! PRINCIPAL OUTSTANDING MECHANISM FEATURES:
SEWING MACH. PLATFORM MOUNTED ON BALL-BEARING SLIDE TO PERMIT EASE OF OPERATION.
PLATFORM EASILY RAISED TO SEWING POSITION ASSISTED BY EQUILIBRATOR SPRING. PROVIDES RIGID VIBRATIONALLESS SUPPORT.
WHEN RAISED IT LOCKS IN POSITION AUTOMATICALLY & CAN NOT BE ACCIDENTALLY RELEASED.

MUTSCHLER BROTHERS

Complete specifications on page S-1 at back of book.

Add M to Cat. No. of any tall unit with full-height door if 17" wide x 60" high mirror is desired on exterior of door.

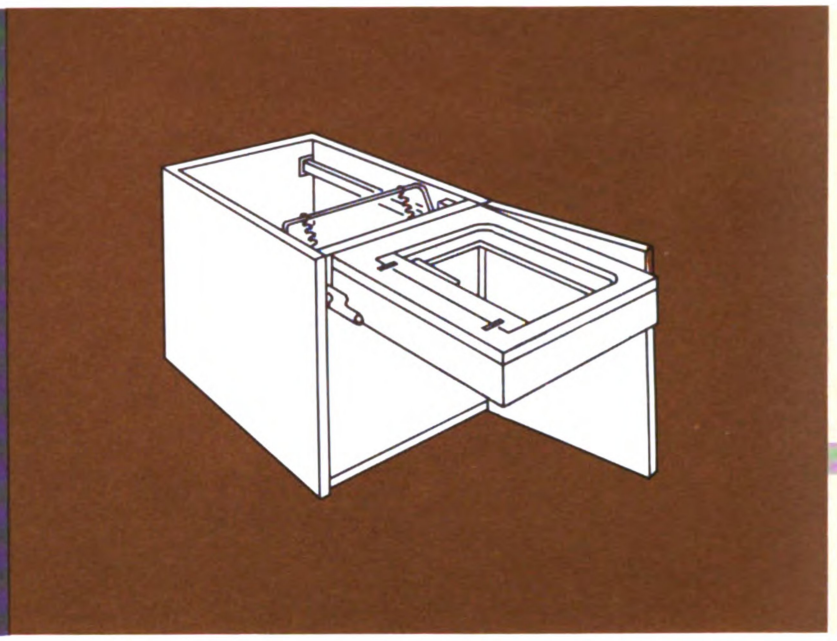
L/R in Cat. No. denotes left or right door swing — specify.



Cleaning Equipment Unit
24¾" Deep

WIDTH	CAT. NO.
48	S-4877 CEU
48	S-4880 CEU

Unit has welded shelf 65" from the bottom of the case. Three adjustable shelves on right side. Left side has a galvanized pan at bottom, with 2" high sides, two coat hooks on the left door, two broom holders on the divider panel and two double hooks under the welded shelf. Door louvered for ventilation.

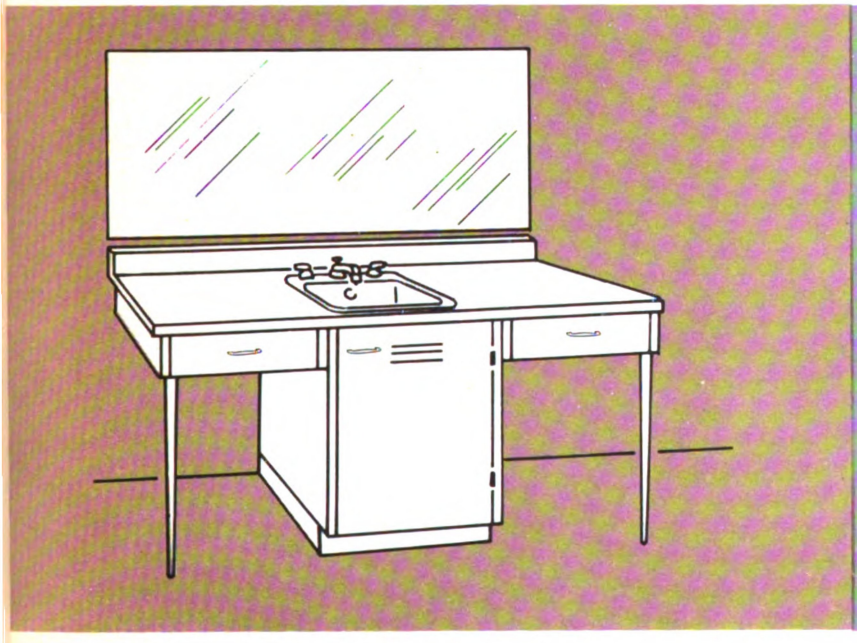


Sewing Machine Unit — 24⅜" High 30" Deep
Right Hand Door Swing Only

WIDTH	CAT. NO.
21	S-21 SMU

Formica covered sliding platform pulls out and elevates sewing head to approximately 30" work height when used with 4" sub base. Platform cut-outs available for any standard make sewing head.

Sewing heads not furnished by St. Charles.



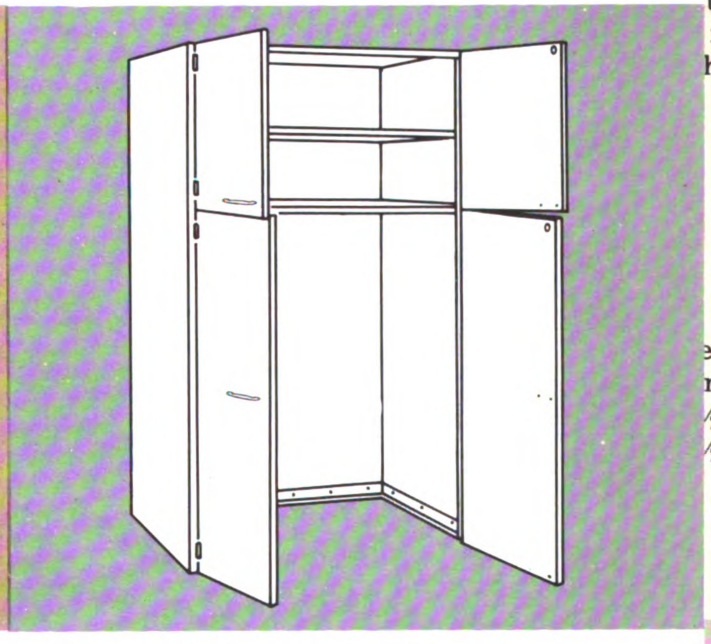
Grooming Unit — 29⅞" High 24¾" Deep

WIDTH	CAT. NO.
66	S-66 GU

If chrome legs are desired add C to Cat. No.

Ensemble consisting of one 24" wide sink unit, two 21" wide suspended drawers 4" high, one Formica top, bowl 18" x 20", one set of faucets with pop-up drain and spring flow aerator, one sub base.

Mirror to be supplied locally.



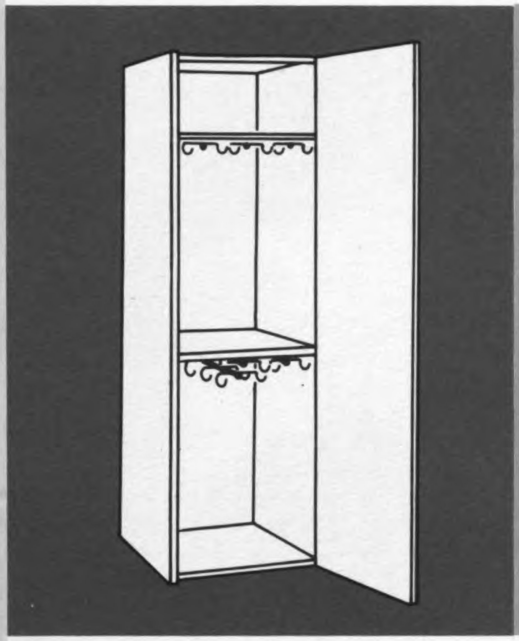
Roll-a-way Bed Unit — 24¾" Deep

WIDTH	CAT. NO.
48	S-4881 RBU
48	S-4884 RBU

Stationary shelf 51" from the bottom of the unit, and one adjustable shelf above. No sub base required. Is designed to store a 45" or smaller bed, mattress and spring and storage for pillows, bed linen, blankets, small equipment and first aid supplies.

SPECIAL STORAGE UNITS

(77" or 80" High)

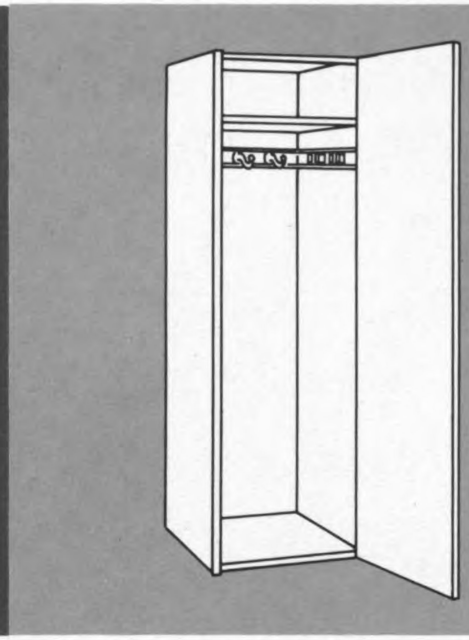


Apron Storage

24¾" Deep

WIDTH	CAT. NO.
24	S-2477 AU L/R
24	S-2480 AU L/R

Has two stationary shelves and six sliding racks with 84 hooks.

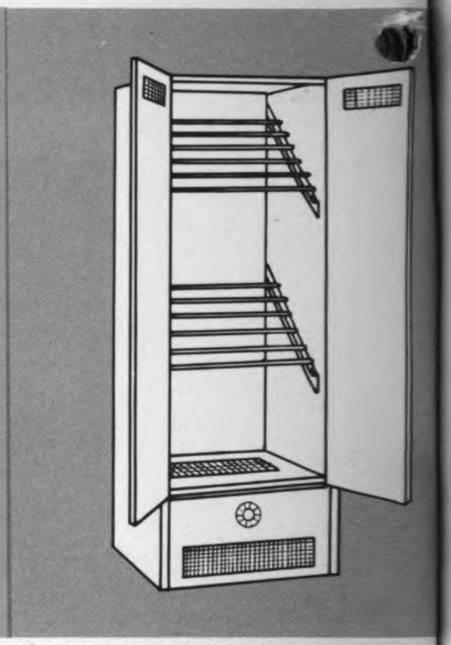


Implement Storage

24¾" Deep

WIDTH	CAT. NO.
24	S-2477 IMP L/R
24	S-2480 IMP L/R

Equipped with one fixed shelf located 65" from bottom of unit. Three utility hooks and four broom clamps are positioned under shelf.

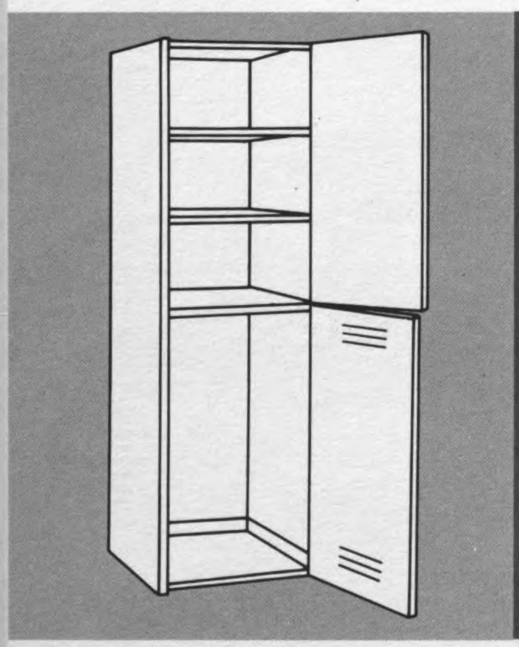


Drying Unit

24¾" Deep

WIDTH	CAT. NO.
27	S-2777 DU
27	S-2780 DU

Lower section contains blower and three 250-watt strip heaters controlled by automatic timer. Upper section has two towel racks with six towel rods each. Unit has grille openings for air circulat

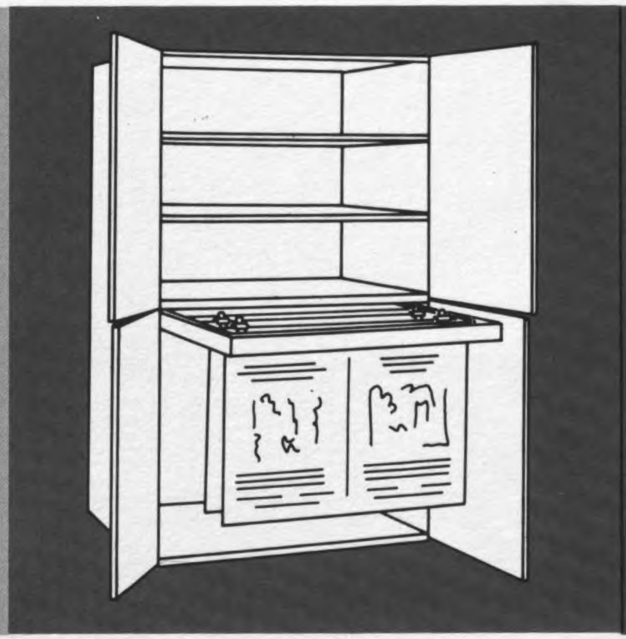


Refuse Storage Unit

24¾" Deep

WIDTH	CAT. NO.
24	S-2477 RSU L/R
24	S-2480 RSU L/R

One stationary shelf centered in unit and two adjustable shelves. Galvanized metal pan at bottom of unit. Lower door louvered.

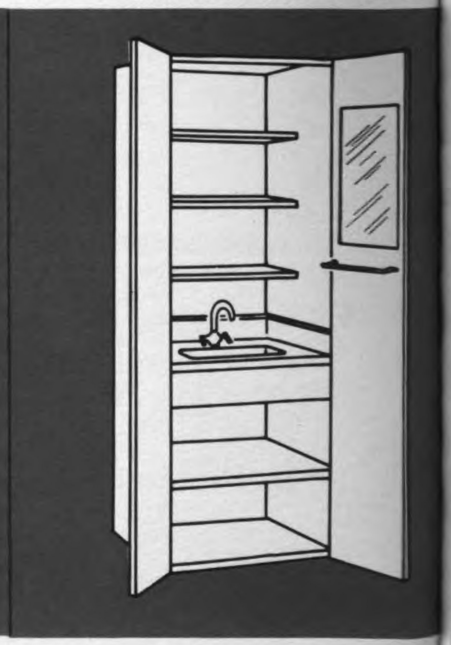


Illustrated Materials Unit

24¾" Deep

WIDTH	CAT. NO.
48	S-4877 IMU
48	S-4880 IMU

Equipped with a sliding chart rack with 12 chart holders and clips. Upper section has two adjustable shelves.



Lavatory Unit

24¾" Deep

WIDTH	CAT. NO.
27	S-2777 LU
27	S-2780 LU

Includes stainless steel sink top with back and two end splashers, 14 x 16 x 7½ bowl and gooseneck faucet, one 24" wide shelf 11¼" deep at bottom and three adjustable 27" wide shelves 6" deep in upper section. Door on right has a mirror and towel bar.

NECCHI-ELNA

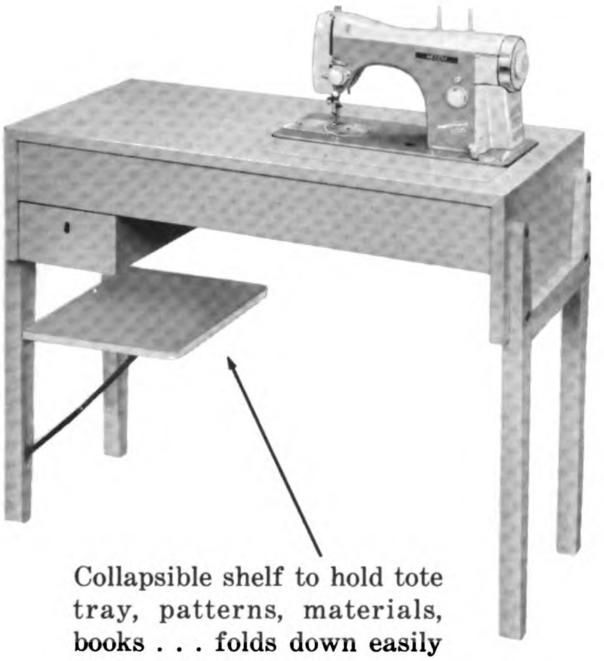
NEW, ALL PURPOSE COMBINATION SINGLE SEWING ROOM DESK, DOUBLE DESK AND CUTTING TABLE...#950

a must for every classroom

No more duplication . . . no more crowding. Now you can fit more machines into your classrooms because additional cutting tables and desks are no longer necessary. The new NECCHI-ELNA 3-way, all purpose combination desk fits all your needs.

1. SINGLE SEWING DESK

Use it as a SINGLE SEWING DESK. 16½" x 35¼" x 30½" high.



Collapsible shelf to hold tote tray, patterns, materials, books . . . folds down easily when not in use.

2. DOUBLE SEWING DESK

Use it as an extra spacious double sewing desk with the addition of the easi-drop connecting leaf. 60½" x 35¼" x 30½" high.

3. CUTTING TABLE

Use it as an oversized cutting and utility table. 60½" x 35¼" x 30½" high.

Clean, modern design in light birch finish—these extremely functional table-desks are constructed with extra heavy brackets, nuts and bolts to insure stability and long use. Solid and substantial legs are firmly fastened to the frame for maximum stability and support.

Order a single sewing desk now. When you buy a second one, you can get the easi-drop connecting leaf at a small additional charge for easy conversion into a double sewing desk and cutting table.

NECCHI-ELNA

NEW, ALL PURPOSE COMBINATION SINGLE SEWING ROOM DESK, DOUBLE DESK AND CUTTING TABLE...#950

a must for every classroom

SPECIAL FEATURES:

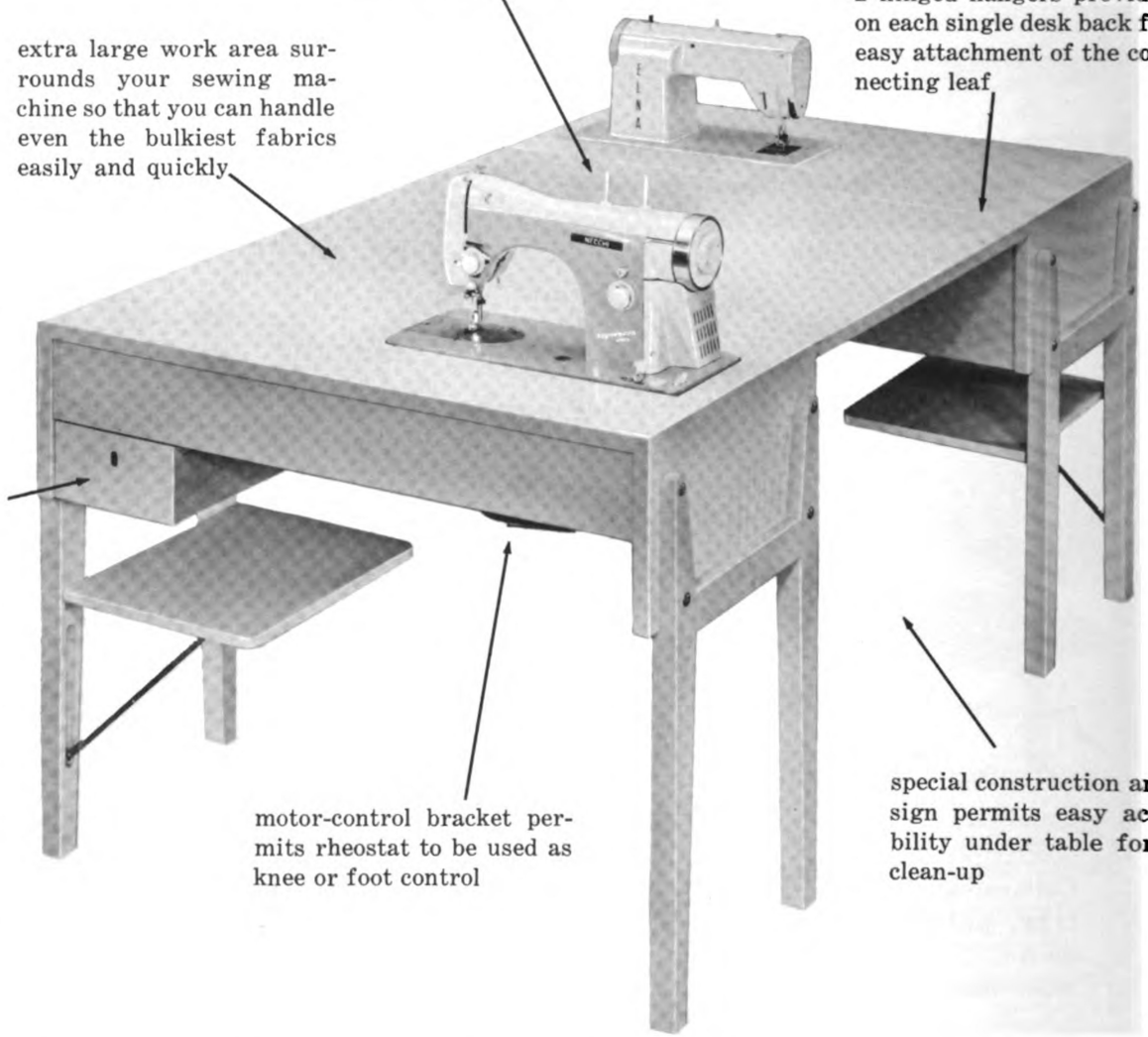
- **STURDY**
- **DURABLE**
- **VIBRATION-FREE**

students sit far apart and diagonally across from each other for extra work space and no interference

each desk is equipped with a machine lifting device for one - finger - lift - control – guaranteeing absolutely no strain when raising or lowering machine

2 hinged hangers provided on each single desk back for easy attachment of the connecting leaf

extra large work area surrounds your sewing machine so that you can handle even the bulkiest fabrics easily and quickly



wooden insert to cover opening (when machine is closed) and drawer, lock with key

spacious dual-purpose drawer for accessory box, papers and sewing needs

best possible positioning for students, plus ample room for legs

comes knocked-down for economy in shipping

motor-control bracket permits rheostat to be used as knee or foot control

special construction and design permits easy accessibility under table for fast clean-up

These special features combined with NECCHI-ELNA's clean, modern design are the best reasons for you to order a single sewing desk now. When you order a second unit, for a small additional charge, you can get the easi-drop connecting leaf for easy conversion into a double sewing desk and cutting table.

ANOTHER WAY TO TEACH SEWING ...FROM NECCHI-ELNA

NECCHI SEWING CIRCLE ELNA

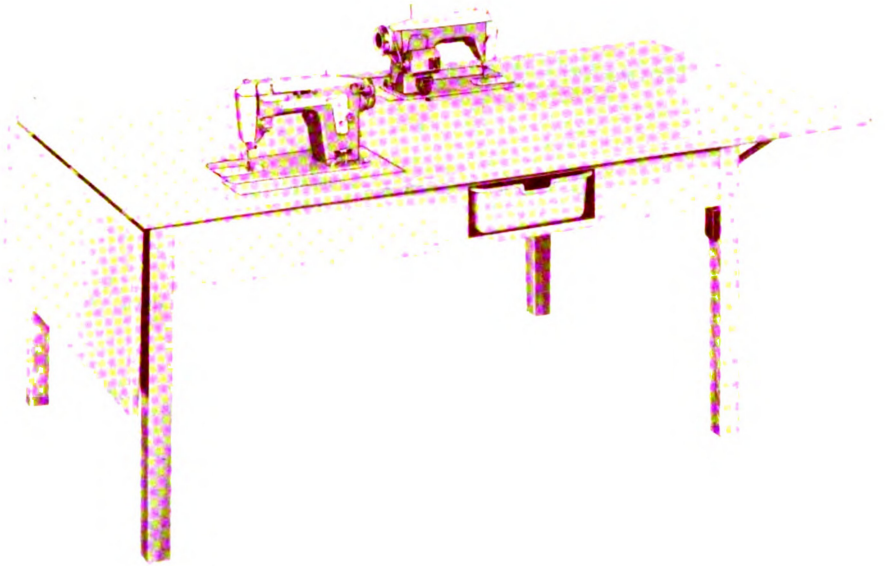
Style No. 411

SEW AND CUT TABLE

For any "600" Series

WHITE

SEWING MACHINE



Finish: Natural Birch with Birch-grained satin finish Pionite top.

●

Equipped with White High Torque speed control.

The ideal unit for homemaking rooms where it is an advantage to combine the operations of cutting, hand sewing and machine sewing in a compact area. Extra electrical outlets make it possible to do minor pressing at the table as well. With machines recessed, table may also be used for study or luncheon groups.

FOR WHITE SEWING MACHINES WITH INTERNATIONAL BEDPLATE CONTOUR

DIMENSIONS: 64" long, 42" wide and 30" high, with one or two drop leaves 16" x 42".

F.O.B. DESTINATION: (Sold only to schools, colleges, institutions).

SHIPPING WEIGHT: (Packed) 255 lbs.

WHITE SEWING MACHINE CORPORATION

HOME EQUIPMENT DIVISION • CLEVELAND 11, OHIO

IN CANADA: WHITE SEWING MACHINE PRODUCTS LTD.

55 WELLINGTON STREET, WEST • TORONTO 1, ONTARIO

(See other side for details)

OVERALL DIMENSIONS AND CONSTRUCTION

Size – 64" long x 42" wide x 30" high, plus 16" x 42" drop leaf. Second 16" x 42" leaf is optional. With heads lowered and two leaves extended, there are 28 square feet of smooth working or cutting surface.

Table top—seven-ply laminated construction 7/8" thick, faced with birch-grained satin-finish Pionite and banded with birch.

Legs—solid birch 2-1/4" square, lacquer-coated, attached to rails with tongue and groove joints and corner screw blocks.

Rail—solid birch 6-1/8" wide.

OPERATING DETAILS AND MECHANICAL FEATURES

Sewing units are placed 10" from leaf ends of table, giving operator 29-1/2" of sewing area left of needle when leaf is extended, or 13-1/2" without leaf. Area right of sewing unit measures 37-1/4", or 53-1/4" with leaf extended, for cutting or handwork. Distance from back of machine bed to opposite edge of table measures 28-1/4".

Two tote tray openings, one to the right of each sewing unit, measure 22-7/8" x 14" x 4-3/4".

When sewing units are lowered, current is automatically shut off to prevent accidental starting of motor.

Table is wired so that only one power cord (10 feet long) is needed to connect both sewing units plus the double outlets located on two diagonally opposite legs.

Built-in adjustable knee levers operate the White High Torque speed control, which delivers full power to the needle no matter how slowly the machine is operated, leaving the operator's hands free for guiding fabric. Positive control also prevents runaway stitching.

Electrical equipment is listed by Underwriters' Laboratories and CSA Approved.

Leaves are attached to table top with oxidized hinges and metal leaf supports. Heads are mounted on oxidized hinges and attached with set screws.

PRACTICAL, EFFICIENT...

The Three-way **SINGER** *Sewing Desk*

No. 430

sturdy sewing table

spacious cutting table

study table

Designed to accommodate more students in less space, **this** SINGER* Desk #430 is versatile and practical. **SINGER**, aware of the varied activities Homemaking **rooms** must accommodate, designed the three-way **Sewing** Desk to meet these needs. Here's how the three-**way** SINGER Sewing Desk will help YOU and the **school** as well. A SINGER Desk is actually three units **in** one... *1. Sturdy sewing table, 2. Study table, 3. Spacious cutting table.*

IT ENABLES YOU TO CONVERT YOUR CLASSROOM to accommodate many different activities in a matter of minutes.

IT PERMITS GREATER EXPANSION of teaching facilities throughout the school.

IT INTRODUCES GREATER FLEXIBILITY into your sewing room equipment.

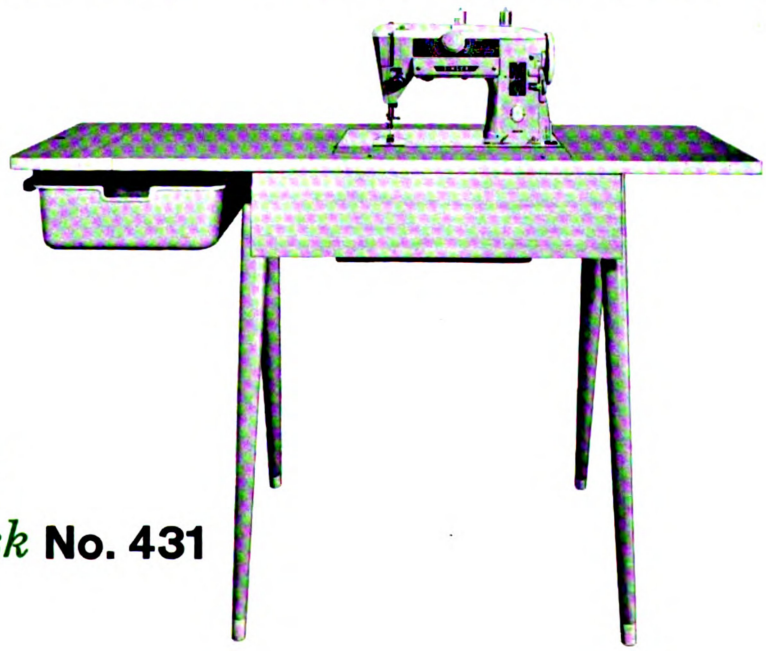
IT REDUCES OTHERWISE WASTED OR DEAD SPACE. The SINGER Desk excels in the employment of "divided" space. Right size, right shape, it is especially effective in making use of irregular areas.

The SINGER Sewing Desk affords maximum **sewing space** of 18⅛" at the left of the needle and 10¾" at the right of the machine. When the drop leaf is extended, the surface becomes **twice as wide** to conveniently support even the bulkiest project.

A tote tray 19½" x 13½" x 4½" will slide in right under the extension leaf. Tote trays are available separately—not part of unit. The bracket is also adjustable to hold tote trays of other widths.

When the machine is lowered, a removable panel slips into place. The Sewing Desk, with drop leaf raised, becomes a **cutting table** 43" x 37⅜". Converted from a sewing table to a **solid top desk** 43" x 18¾" the Sewing Desk accommodates both sewing and study classes.

You can actually fit more machines into your classrooms because extra cutting tables are no longer needed.



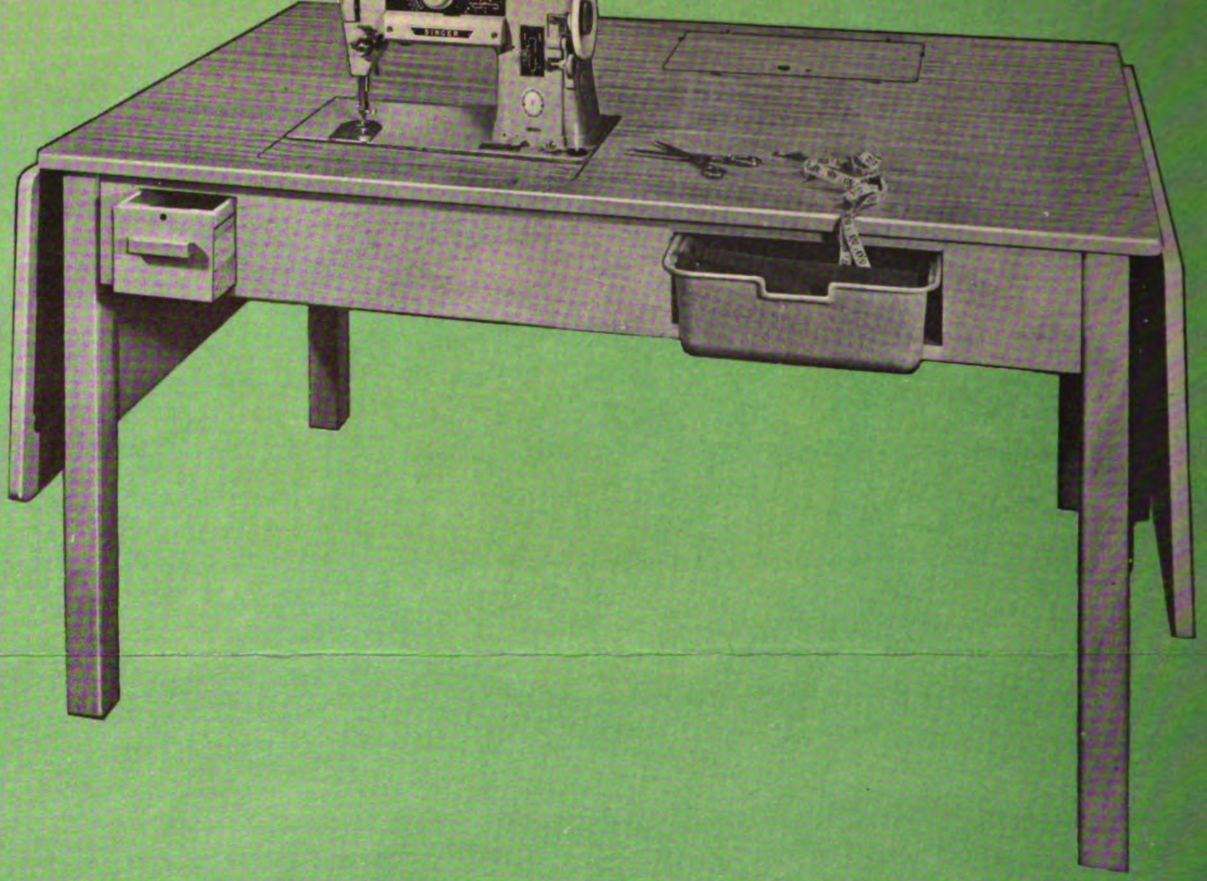
SINGER

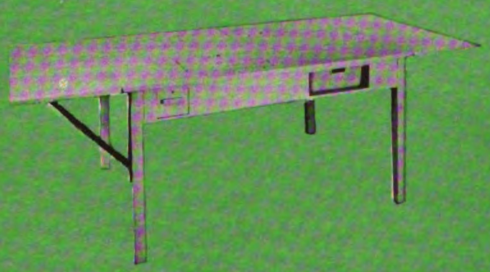
Sewing Desk **No. 431**

Similar to the versatile 430 Sewing Desk in appearance except for absence of the drop leaf extension and pull out drawer, the 431 affords maximum sewing space of 18⅛" to the left of needle, 10¾" to the right of machine.

SINGER* Tote Tray, measuring 19½" x 13½" x 4½", slides smoothly on adjustable metal tracks. Adjustable to accommodate tote trays of other widths.

With machine lowered and covered by removable panel the Sewing Desk becomes a compact study unit, 43" x 18¾". Comes in Blonde or Walnut finish with matching *Formica* top.



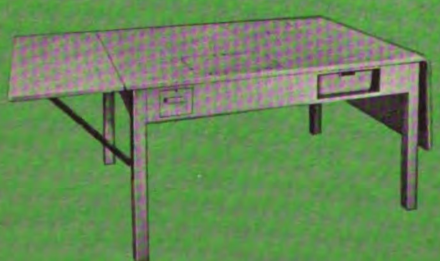


Order Numbers of Tables

#417—Basic Table	60″
#418—Basic Table w/1 end-leaf	78″
#419—Basic Table w/2 end-leaf	96″

Any of these tables will accommodate SINGER Heads of Class: 401-4
403-4
404-4

All have 2 Drawers and 2 Tote tray openings



SINGER *also offers the*

Combination Sewing and Cutting TABLE

Its specifications may be the answer to your needs

STYLING — Modern — Straight-line.

SIZE — 42″ wide, 60″ long and 30″ high. 18″ x 42″ folding end leaves convert working space to 78″ or 96″.

FINISH — Light with blonde *Formica* top or dark with walnut *Formica* top.

LEGS — Solid Birch 2½″ square — available in different lengths as specified for height requirements.

CONTROLS — Built-in knee lever type — retractable when not in use.

INSERTS — Lock over table openings when machines are not in use.

DRAWERS — Total of two, plus two 4½″ high x 13½″ wide x 19½″ deep tote tray openings.

TOTE TRAYS — Available separately — not part of unit.

ELECTRICAL EQUIPMENT — The table is equipped with a junction box to which a single line lead is attached. Each machine is attached to central junction box.

SAFETY FEATURES

SAFETY SWITCH — Cuts off power automatically when machines are lowered.

GROUNDED OUTFIT — Metal parts are connected to a ground.

INGER
LANT NEEDLE
ELUXE, Model 404

e finest straight stitch sewing ine ever built— resents the ultimate in ling and design.

DISTINCT FEATURES INCLUDE:

Slant-needle for greater visibility, precise stitching

"Drop-in" bobbin in front of needle

Fixed bobbin case...prevents dropping and chipping

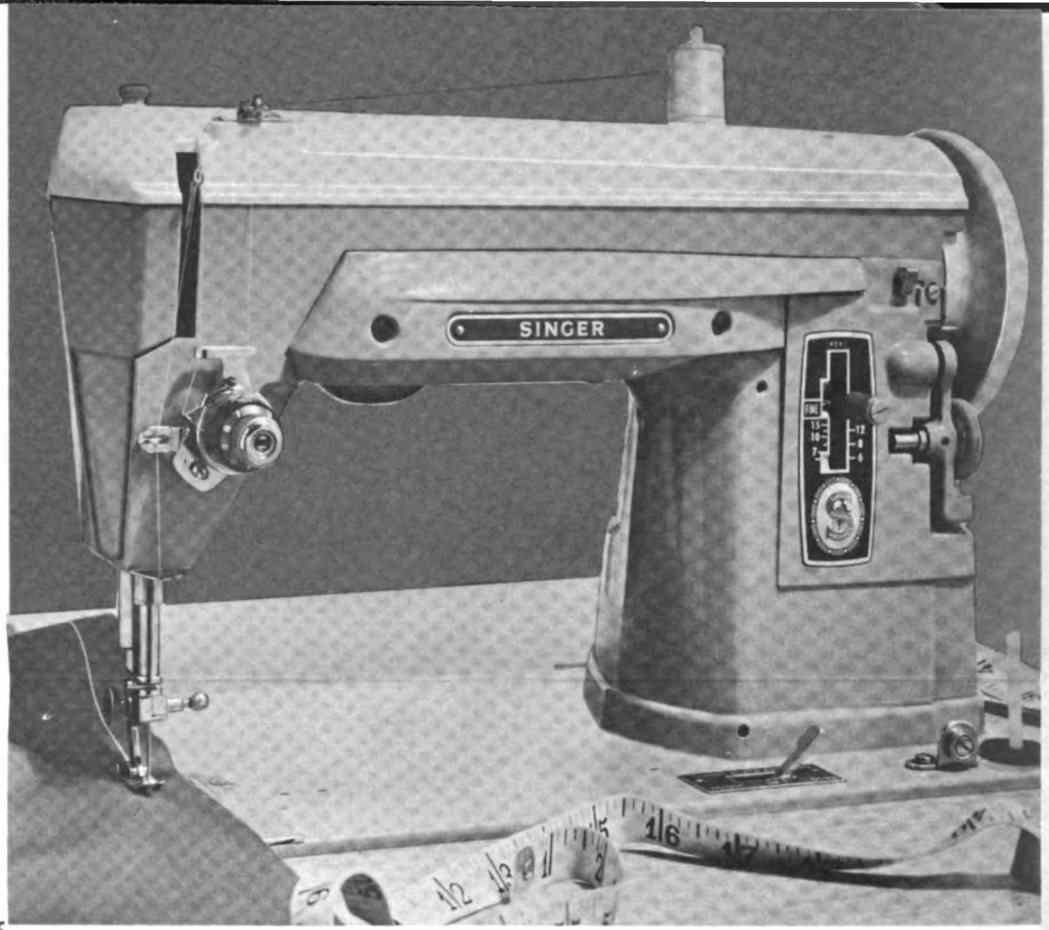
Elevator type throat plate that raises by lever...no tools needed for removal when cleaning...superior fabric handling

Threading chart inside face plate that snaps open for instant instruction

Exclusive gear motor drive for smooth sewing—no belts to wear or slip

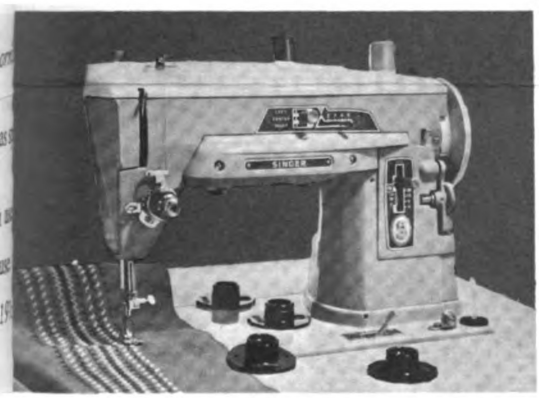
Zero to maximum tension in one turn for simple tension regulation

Built-in "safety" thread cutter, scored throat plate for guiding stitching, flexible steel seam guide and many other extras

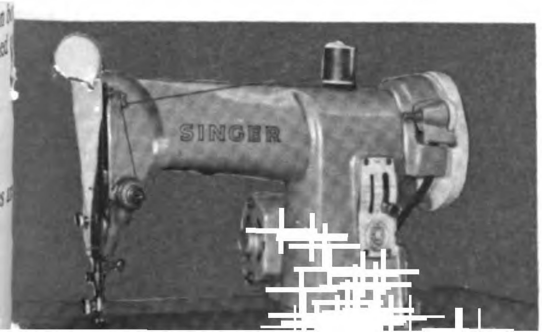


Famous *SLANT-O-MATIC, Model 401** . . . greatest all-purpose machine ever made . . . simplest to operate! To do buttonholes, decorative stitches, sew on buttons, blind-stitch hems without attachments, just "tune" the knob to select the stitch.

Teaching may progress from plain sewing to the broader concepts of machine sewing which include new construction methods in the areas of seam finishing, machine buttonholing, button sewing and blind stitch hemming—new easy methods of family maintenance sewing, mending and darning—creative sewing, applique, decorative and two-needle sewing.



***SLANT-O-MATIC* SPECIAL, Model 403**—This simplified member of the Slant Needle family has many of the superb features of the 401. It accomplishes all functional sewing operations and most of the decorative. Comes with a set of FASHION* Discs you just slip on to do construction and decorative stitches.



SINGER YOUNG-BUDGET, Model 185K3—Popular among young homemakers, this economy straight needle machine offers many features developed through years of SINGER research. Drop-in Bobbin is easily accessible..."Red-Dot" stitch indicator shows the number of stitches for forward and back stitching...Single-Turn Dial tension with graduated numbered dial simplifies adjustment of needle thread tension...and many more fine features make this machine a constant sewing companion of the young homemaker today. Available to schools in the 433 cabinet.

SINGER

Now offers the most advanced

SEWING EQUIPMENT

for Schools and Colleges

Budget Consoles to fit your Classroom Needs...

ELECTRIC CABINET, Model No. 401 – Designed to withstand the rigors of classroom use, Cabinet No. 401 is an attractive cabinet that is unusually serviceable and durable. Four spacious drawers provide space for attachments, sewing accessories and supplies. Available in Blonde or Walnut finish.

ELECTRIC CABINET, Model No. 433 – The 433 combines dura bility with good looks. Especially designed for classrooms, thi Machine Cabinet, like its sister, the Cabinet Model 401, ha four spacious drawers for sewing accessories and attach ments. Built exclusively to hold the Electric Machine Heat No. 185K3, Model No. 433 is available in Blonde or Walnu finish.

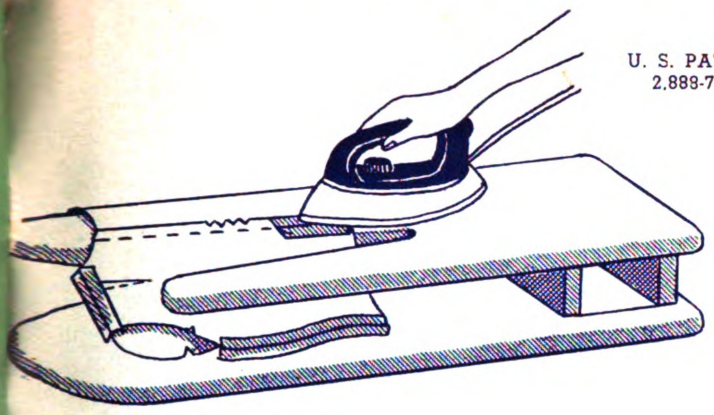
Accessories for SINGER Cabinets...

TOTE TRAY FOR SCHOOL TABLES – Tote trays for the three-way SINGER* Sewing Desk and the combination Sewing and Cutting Table are available. Made of durable fibre glass, each measures 19½″ x 13½″ x 4½″. During the course of a school day, a number of different girls use the same sewing area. With individual trays, each girl can keep her sewing and accessories neatly intact when she is using the table or sewing machine and stored safely and separately during other class sessions.

IDEAL CHAIR FOR YOUR CLASSROOM – SINGER* Student's Sewing Chair, No. 438088 is specially constructed to ensure correct posture, perfect sewing vision and ease of operation. Dimensions are 31¾″ high at back and 17″ at front; with seat frame 16″ wide and 17″ long. Finished in Blonde or Walnut. *Whether they're sewing or studying, correct posture and positive comfort mean less fatigue for your students.*

SINGER SEWING CENT

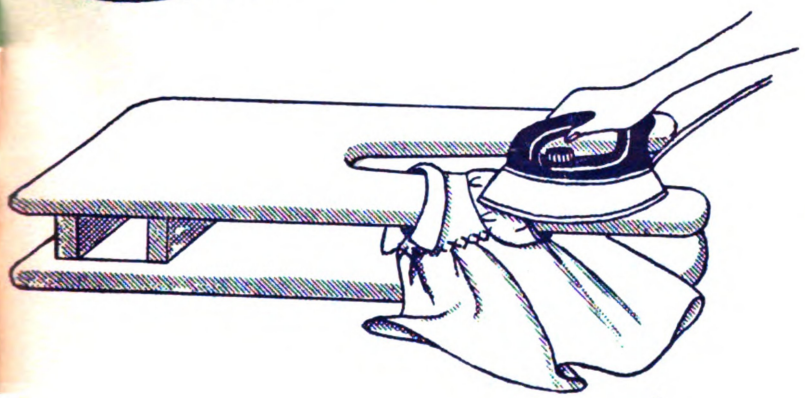
MULTI-PURPOSE Ironing Board



U. S. PATENT
2,888-760

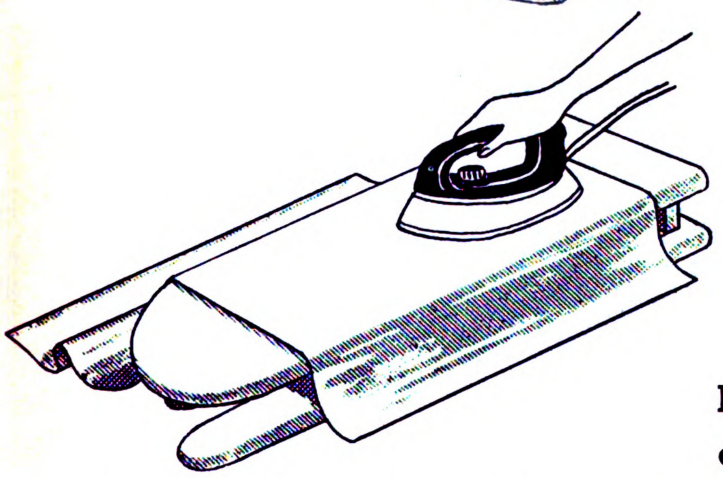
INVALUABLE TO THOSE WHO SEW

The small prongs can be used to press seams without touching the other material. The larger prong can be used for pressing the whole sleeve, the square end for shoulders.



IDEAL FOR INFANTS CLOTHES

Use the small prongs for small sleeves and little boys' pants, the reverse side for skirts.



FINE FOR REGULAR IRONING

Towels, napkins, shorts, blouses, bridge sets — even skirts and men's shirts — all these are short work on this handy apartment sized board.

— OVERALL LENGTH 24" —
8" WIDE 5" HIGH

Its usefullness and size make it a boon also to college students and travelers.

Please send me _____ extra slipcovers at $1.95 per set.

_____ extra pads at $1.00 per set.

_____ MULTI-PURPOSE IRONING BOARDS at $6.95 each, complete with pads and covers.
Enclose payment with order.

Name_____

Street_____

City_____ State_____

SHAFFER HOME PRODUCTS
POST OFFICE BOX 3555
CLEVELAND HEIGHTS 18, OHIO

INTRODUCING

THE NEW *Automatic*

ECO-MIRROR

PAT. PEND.

TO BRING NEW EFFECTIVENESS TO YOUR FOOD DEMONSTRATION

- READY FOR USE INSTANTLY
- LOWERS — RAISES — STOPS AUTOMATICALLY AT THE FLICK OF AN ELECTRIC SWITCH
- ADJUSTS FOR VARYING AUDIENCE AREAS
- REQUIRES NO MAINTENANCE
- ENDS BOTHERSOME HANDLING OF CUMBERSOME EQUIPMENT
- MODERN OPERATION ADDS PRESTIGE TO YOUR DEMONSTRATION OF NEWEST KITCHEN EQUIPMENT
- COMPACT APPEARANCE IS ATTRACTIVE AND INCONSPICUOUS

A PRODUCT OF design craft inc.

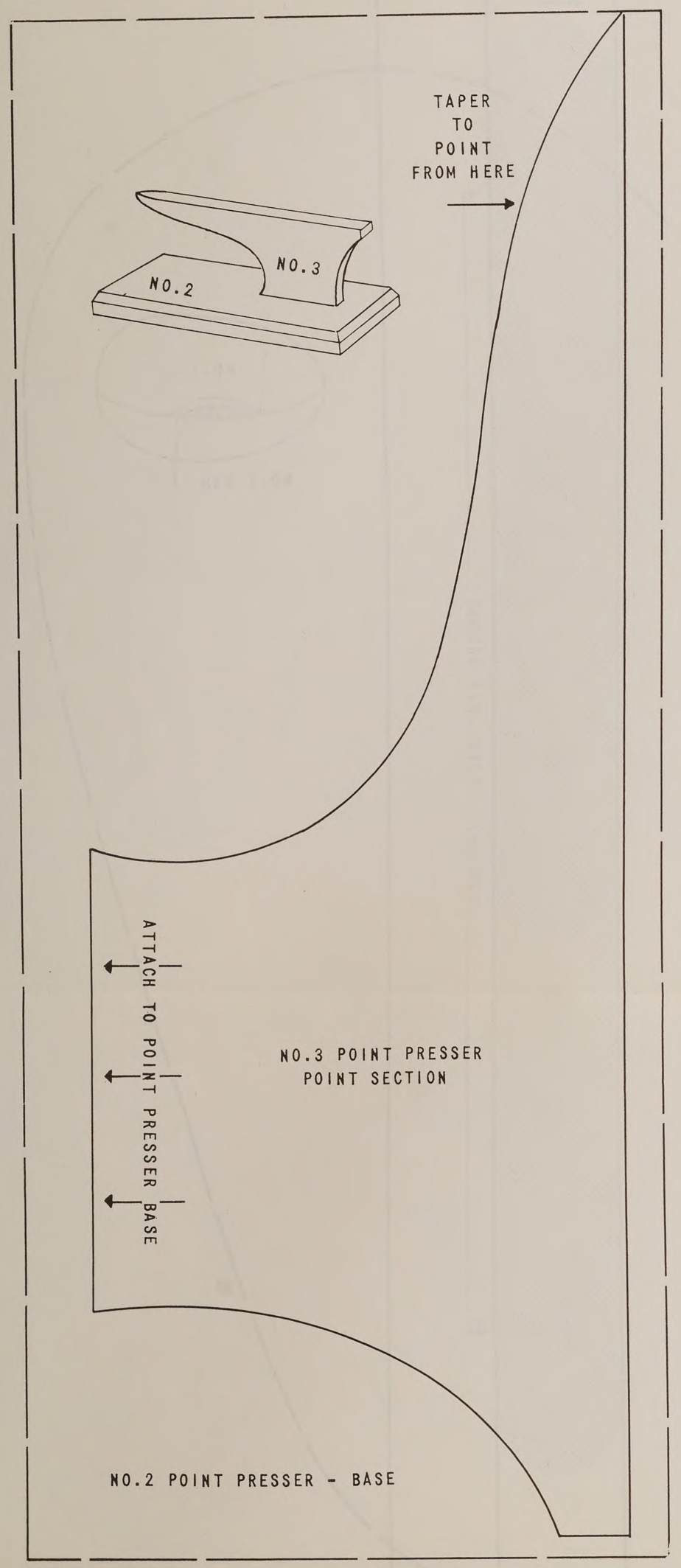
~~BOX 5756~~ COLUMBUS 12, OHIO

1153 WYANDOTTE RD.

PATTERNS FOR MAKING SMALL PRESSING [illegible]

[illegible] your own cut-out

PATTERNS FOR MAKING SMALL PRESSING EQUIPMENT



Draw around lines for making your own cut-out patterns from these master patterns. Transfer to wood or fabrics as required and make as follows:

HAM outlined in broken lines. See other side for drawing.

No.1 Cut two pieces of firmly woven cotton fabric in this shape which serve as the covering for the stuffing. Stitch together, leaving one end open so you can stuff firmly with dried sawdust or wool clippings. Finish by hand. Make an outside cover of woolen fabric or, a combination of one side wool and one side cotton.

POINT PRESSER made from two pieces of wood.

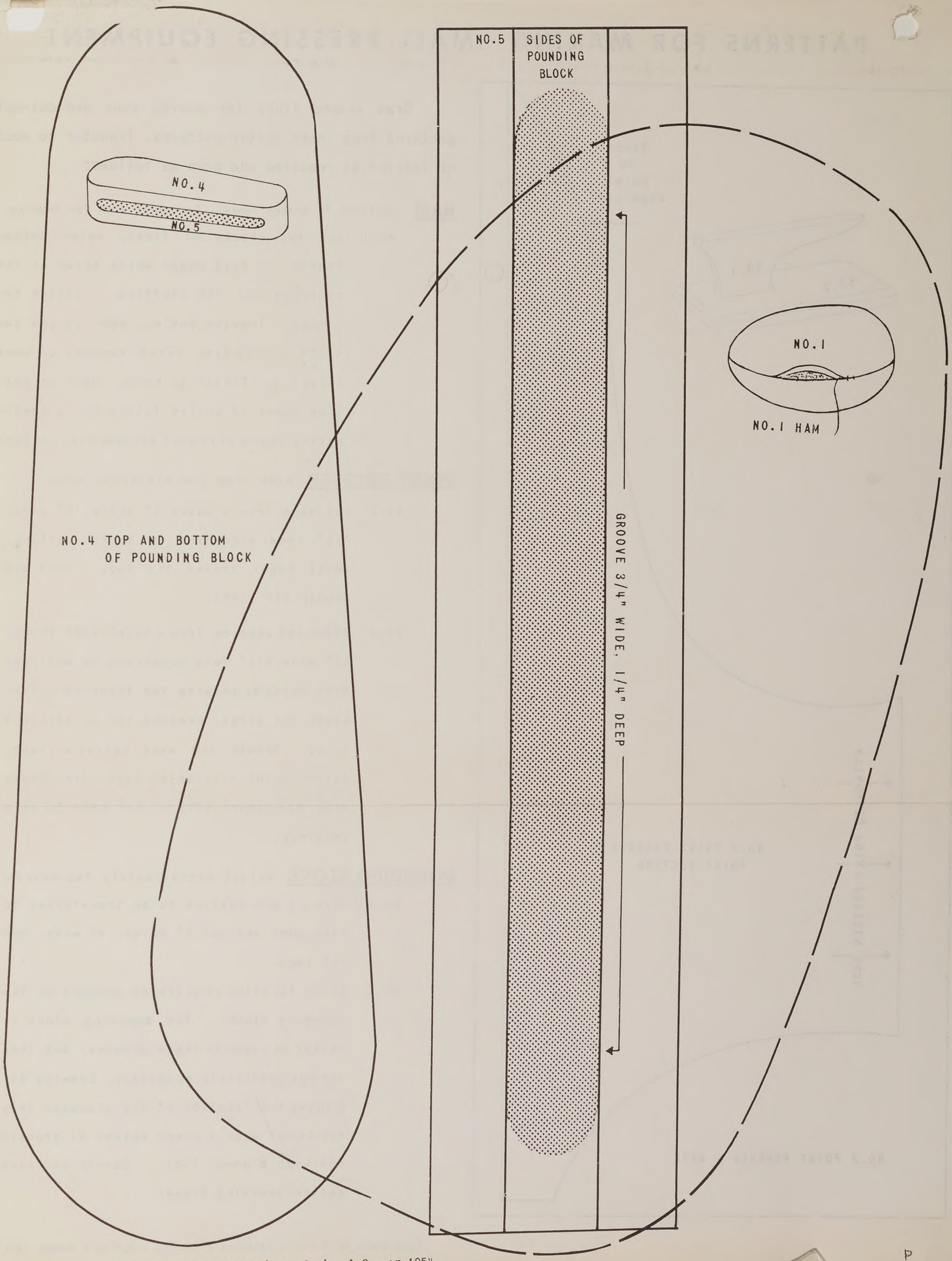
No.2 Cut base from a board 1" thick, 5" wide, 11½" long according to broken outline. Bevel edges around the top. Sand and smooth all sides.

No.3 Cut point section from a board 3/4" thick, 4½" wide, 11½" long according to outline. Make point by shaping and tapering underneath and sides, keeping top on straight line. Smooth and sand entire surface. Attach point section to base with screws from the under side of the base to hold securely.

POUNDING BLOCK weight approximately two pounds.

No.4 This is the outline to be transferred to hard wood and cut 2" thick, 4" wide, and 12" long.

No.5 Shows location of gripping grooves on the pounding block. The pounding block is easier to use with these grooves, but they are not absolutely necessary. Drawing No. 5 shows the location of the grooves. They may be cut with a round chisel or grooved out with a power tool. Smooth and sand entire pounding block.


NO.4
NO.5
NO.4 TOP AND BOTTOM
OF POUNDING BLOCK
NO.5
SIDES OF
POUNDING
BLOCK
GROOVE 3/4" WIDE, 1/4" DEEP
NO.1
NO.1 HAM