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Laundry Equipment and Methods

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LAUNDRY EQUIPMENT AND METHODS



THE UNIVERSITY OF NEBRASKA, LINCOLN
COLLEGE OF AGRICULTURE
W. W. BURR DIRECTOR

CONTENTS

Selection of Equipment.....	3
Mending basket.....	3
Sorting equipment	3
Stain-removal equipment.....	4
Tubs	4
Washing machine	4
Laundry stove.....	5
Accessory washing equipment.....	5
Ironing board	6
Hand iron	6
Ironing machine	7
Accessory ironing equipment.....	8
Arrangement of Equipment.....	9
Supplies	10
Stain removers	10
Water softeners	10
Soap	11
Methods	12
White clothes	12
Colored clothes.....	14
Articles of silk or synthetic fabrics.....	14
Woolens	15
Curtains, draperies, and slip covers.....	16

Laundry Equipment and Methods

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Department of Home Economics

Washing can be made one of the pleasant tasks of home-making if the laundry room is a cheerful and convenient place in which to work, if the equipment is well selected and arranged, if the work is carefully planned, and if the washing methods used give satisfying results. The purpose of this circular is to give information which will make it possible for homemakers to solve their laundry problems more successfully.¹

SELECTION OF EQUIPMENT

Mending basket.—Since small holes and rips grow larger when clothes are washed, a few stitches before washing mean fewer stitches afterwards. A mending box with thread, needles, and scissors kept in the laundry room will save many steps.

Sorting equipment.—A container for soiled clothes is a necessary part of the laundry equipment. In some homes a clothes chute which empties into a clothes bin takes care of the soiled clothes. In other homes, a large hamper or basket is used, and the clothes are sorted into smaller baskets or on papers spread on the floor. A table which is both a container and a sorting device, such as the one designed and built for our laboratory, has many advantages. See Figure 1.

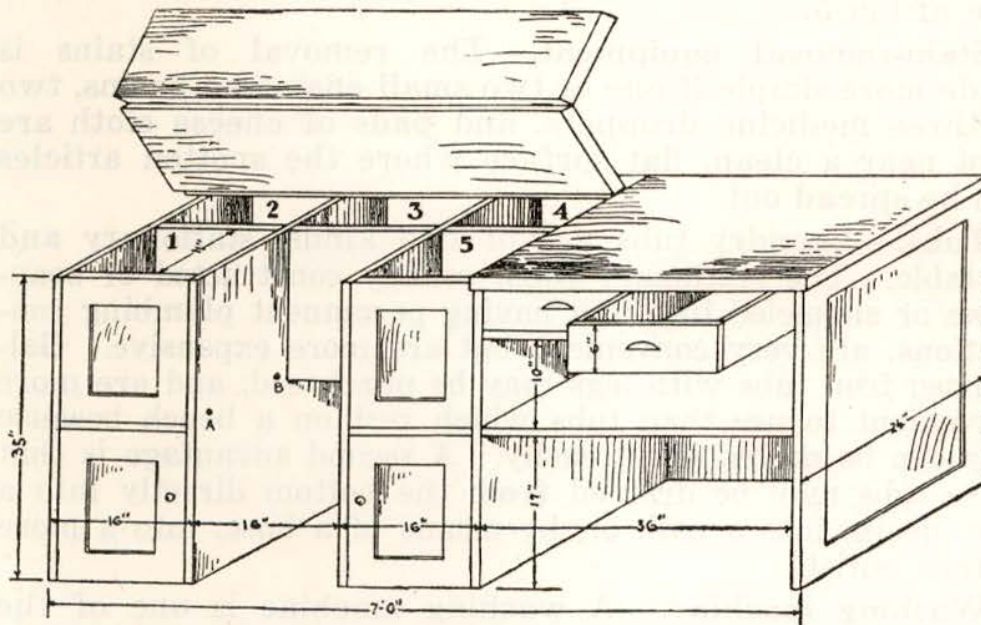


FIG. 1.—A sorting table.

¹ This study of home laundry problems was sponsored by McCall's Magazine and carried on under the supervision of the Home Economics Department of the University of Nebraska. The reports of all work which was done are on file in the Home Economics Department of the University of Nebraska.

The table is 7 feet long, 2 feet wide, and 3 feet high. The top to the right is smooth and stationary and can be used as a working area. The top to the left may be used as a flat surface; or when lifted back and hooked to the wall it allows access to the five sorting bins beneath it. The bins are large enough to hold an average machine load of clothes—from 6 to 8 pounds. The soiled clothes may be placed in their respective bins as they are brought into the laundry room during the week, or they may be sorted into them on wash day from the clothes chute. If the soiled clothes have been carried to the laundry room, the hamper or basket should be placed on a stool or low table so that it will be the same height as the top of the bins and thus enable the worker to drop rather than lift the clothes.

Under the bins are storage spaces for buckets, hose, and other small equipment; the drawers to the right hold towels, measuring cups, spoons, and the mending basket; the center shelf holds pans and supplies, and the baskets may be stored under it when they are not in use. A shelf built over the table for soap, water softeners, starch, and other supplies is convenient.

Marks A and B on the diagram indicate ventilating holes. Similar holes should be made between bins 1 and 2, 2 and 3, 3 and 4, 4 and 5, in the bottom of the bin 3 and the inner side of bin 5.

Stain-removal equipment.—The removal of stains is made more simple if one or two small enameled basins, two or three medicine droppers, and pads of cheese cloth are kept near a clean, flat surface where the spotted articles can be spread out.

Tubs.—Laundry tubs are of two kinds, stationary and portable. The stationary tubs, usually constructed of soapstone or enameled iron and having permanent plumbing connections, are very convenient but are more expensive. Galvanized iron tubs with legs may be purchased, and are more convenient to use than tubs which rest on a bench because they can be moved about easily. A second advantage is that these tubs may be drained from the bottom directly into a floor drain, into a pail, or, by means of a hose, into a more distant outlet.

Washing machine.—A washing machine is one of the most important labor-saving devices used in the home. Since it is expected to give good service for at least ten years, it should be selected with care. The following questions should be considered:

1. Is the dealer reliable?
2. Does the machine operate quietly?
3. Does the machine drain quickly and completely?
4. Is its working height comfortable, or can it be adjusted?
5. Can the machine be moved about easily?
6. Are the controls easily reached and manipulated?
7. Are the motor and all moving parts well covered for the protection of the operator.
8. Is the machine large enough to accommodate the family's needs and not too large for the storage space?
9. Is the machine easy to clean and lubricate?
10. Is the water extractor satisfactory?

The soft and semi-soft rolls which are now used on many wringers have a more gentle action on clothes and on buttons than the hard-roll wringers. A good wringer has a satisfactory tension control and an easily manipulated safety release, and will lock in four positions.

If a centrifugal dryer is used, the moisture is evenly removed, there is very little chance of breaking or removing buttons from the clothing, and woolens are left soft and fluffy. Unless the dryer is carefully loaded, however, there may be considerable vibration, and if the water is extremely hot there is danger of burning the fingers while transferring the clothes from the machine to the dryer.

Machines with a gasoline motor can be purchased if electricity is not available. There are a few hand-power washing machines on the market.

Laundry stove.—Unless the water is heated by a furnace or by a gas, electric, or kerosene water heater, a stove will be a necessity. Even though there may be a water heater, a stove will be an added convenience, as there may be times when part of the white clothes should be boiled, and starch must be made.

Accessory washing equipment.—The following pieces of equipment are either necessary or very helpful:

1. A hose for filling the tubs and the washing machine eliminates the necessity of carrying water.
2. A thermometer for testing the temperature of the water is helpful, especially when colored cottons, silks, and woolens are being washed.
3. A boiler is necessary if the water must be heated on the stove.

4. A large plunger and a hand wringer will help to save time and energy if the washing must be done by hand.

5. A wash board or stiff brush for giving extra rubbing to extremely soiled parts of garments is helpful.

6. A smooth stick or two large wooden spoons are convenient when handling hot clothes.

7. A low table on casters for holding the clothes baskets saves much stooping.

8. Two or three clothes baskets which are light and easy to handle are necessary.

9. A pan and spoon for making starch save steps to the kitchen.

10. An outdoor clothes line should be provided if possible. A portable clothes rack which is sturdy and smoothly finished will facilitate indoor drying.

11. Clothes pins, smoothly finished and strong, are necessary if the clothes are hung outdoors.

Ironing board.—A good ironing board, whether it is portable or built into a cabinet, should be strong and substantial. Before buying an ironing board, make sure that it will be perfectly steady while in use and that the framework underneath will not interfere with the ironing of the garments. The padding for an ironing board should be firm but not hard, should yield to the iron and yet not be soft. Felt padding, quilted table padding, or several thicknesses of outing flannel may be used. It is possible to buy ready-made pads and muslin covers, or to make these at home.

Hand iron.—When selecting an electric iron, one should observe the following points:

1. It is more economical to buy an iron of standard make which has a satisfactory guarantee than to buy a cheap, unguaranteed iron.

2. A thermostatic heat control is a decided help in ironing, especially when the garments being ironed are of sheer cotton, silk, synthetic fabrics, or wool.

3. Irons with a high-power rating (800 to 1,000 watts) are more satisfactory than irons with a low-power rating. Irons with lower watt ratings must be used where battery plants, as on many farms, supply the electricity.

4. Light-weight irons with a high-power rating give good results and are convenient to use.

5. A good iron has a smooth ironing surface and beveled edges.

6. An iron with a large handle will be less tiring to the hand over a long ironing period than an iron with a small handle.

7. Some irons have a heel rest on the back which is a time and labor saver. Instead of being lifted up to a stand on the end of the board when it is not needed, the iron may be turned on end. In purchasing an iron with a heel rest, the buyer should be certain that the iron rests on the supports and not on the plug.

Gasoline irons are a boon to women whose homes have no electricity. These irons should be purchased from a reliable company and the directions for their use followed carefully.

Ironing machine.—While an ironing machine is not a necessary piece of laundry equipment, it is very desirable, for it saves both time and energy. The advantage of the ironer lies in the fact that it may be used without difficulty while the worker is in a sitting position, and that its large heated surface speeds up the ironing of flat pieces such as sheets and tablecloths.

There are two types of ironers—the rotary and the presser. On the rotary ironer, the article is ironed as it passes between the revolving roll and the heated shoe. On the presser ironer, the article to be ironed is spread on the stationary padded surface or board and is ironed when the heated shoe is pressed down from above.

Before buying an ironer, one should use it in one's own home if possible. A good rotary ironer has these features:

1. The shoe heats evenly, except when designed so that it will become hotter at the open end. One may determine the distribution of heat by placing a sheet of white wrapping paper between the heated shoe and the roll in the pressing position for three or four minutes. If the paper is scorched evenly at the end of that time, it is an indication that the shoe is evenly heated. It is desirable for slightly more heat to be concentrated in the open end of the shoe, since that part is used more than the closed end. Some ironers have thermostatic heat controls.

2. The shoe stands back far enough from the roll so that it will not burn the fingers when a garment is being adjusted for ironing; it can be moved away from the roll so that it may be cleaned easily; and it can be released easily and quickly from the roll both with and without electrical power.

3. The roll has at least one open end, and is well padded. It has a cover which may be removed, washed, and replaced easily.

4. The controls are conveniently placed and easily manipulated. There is a foot or knee control in addition to the hand control, and an emergency lever to release the shoe from the roll in case the electrical power should fail while one is ironing.

5. The ironer has a good pressing device, so that the roll may be stopped at any time to press a particularly heavy or damp part of the article being ironed. This is especially convenient for ironing pleats.

6. The ironer is well built and sturdy, convenient to operate, and easily stored.

A good presser ironer has these features:

1. The heat is evenly distributed over the entire surface of the shoe.

2. The shoe is brought in contact with the padded surface without great effort.

3. The board is well padded but not too soft. A separate pad may be provided for ironing embroidered pieces.

4. The ironer is easily stored when not in use.

Accessory ironing equipment.—The following items of equipment are either necessary or helpful:

1. A large, clean surface should be provided on which to dampen the clothes. A bottle with a perforated top, or a pan and whisk broom make it easy to distribute the dampness evenly.

2. A stool or low table on which the clothes basket may be placed saves unnecessary stooping.

3. A clothes rack which may be easily reached and on which the ironed clothes may be hung is a great help.

4. An electric fan does much to make a person who is ironing comfortable on a hot day. The fan should be turned so that the breeze will strike the worker and will not dry the clothes.

5. There are some women to whom a stool or a high chair is a great help on ironing day. Others find that the strain on the shoulder muscles is greater when they sit down to iron than when they stand up.

ARRANGEMENT OF EQUIPMENT

If the washing and ironing are both done in the laundry room, the equipment for each process should be grouped together (Fig. 2). An ideal arrangement provides facilities so that sorting, soaking, washing and rinsing may be accomplished with few steps. Working from right to left is desirable for most people.

An arrangement is usually good if the stove and machine are near the water supply and the wringer or dryer is next to the laundry tubs. The tubs shown in Figure 2 may be either stationary or portable. Stationary tubs with permanent plumbing connections eliminate the necessity of a sink. Tubs placed in the center of the room may be reached from all sides and are more conveniently used than when placed next to the wall.

A large table which may be used for both washing and ironing should be so placed that it is convenient for both processes.

Adequate natural and artificial light should be provided. Satisfactory light will reduce the fatigue of the worker and make the laundry room more cheerful. It will also make it possible to judge the washing results more accurately.

The ironing area should be arranged in such a way that the basket containing the clothes will be at the left of the worker. Then the clothes may be taken from the basket and slipped over the end of the board with no unnecessary motions. The clothes rack or table upon which the ironed clothes are to be placed will be at the right or rear of the worker, so that the iron may be placed at the end of the board and the ironed article disposed of in almost one movement to the right.

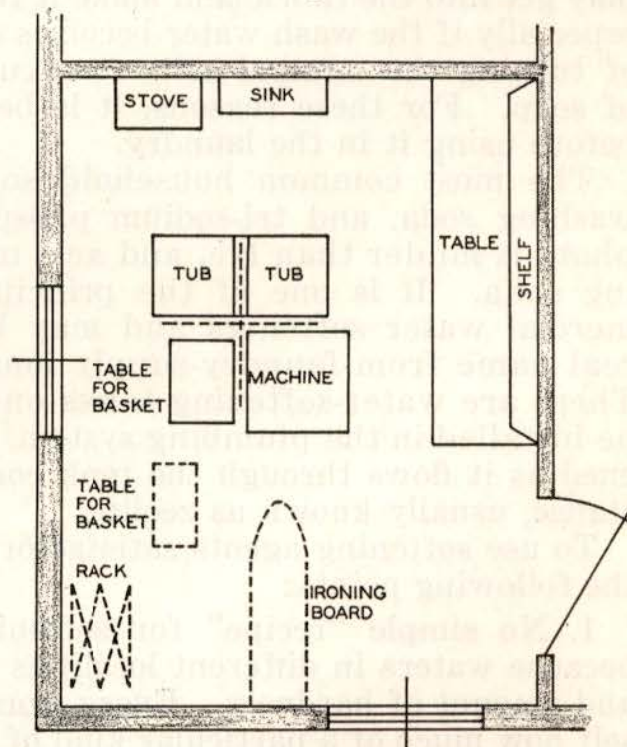


FIG. 2.—Suggested arrangement of laundry equipment.

SUPPLIES

Stain removers.—There are two main types of stain-removing agents—bleaches and solvents. Those most commonly used are:

1. Javelle water—a strong bleach (containing chlorine) which should be used only for white cotton and linen.

2. Hydrogen peroxide—a mild bleach which can be used safely on white cotton, linen, wool, silk, and on some colored materials.

3. Carbon tetrachloride—a non-inflammable grease solvent.

Water softeners.—Hard water presents a serious problem on wash day for two reasons: first, the mineral salts in hard water combine with the soap and form curds which may get into the fabric and make it feel harsh and look dingy, especially if the wash water becomes dirty; second, this action of turning the mineral salts to a curd uses large quantities of soap. For these reasons, it is best to soften hard water before using it in the laundry.

The most common household softening agents are lye, washing soda, and tri-sodium phosphate. Tri-sodium phosphate is milder than lye, and acts more quickly than washing soda. It is one of the principal ingredients of commercial water softeners and may be purchased under its real name from laundry-supply houses at a very low cost. There are water-softening tanks on the market which may be installed in the plumbing system. The hard water is softened as it flows through the tank containing a chemical substance, usually known as zeolite.

To use softening agents satisfactorily one should remember the following points:

1. No simple "recipe" for softening water can be given because waters in different localities vary greatly in the kind and amount of hardness. Every woman can find out for herself how much of a particular kind of water softener is needed for a certain amount of water by using the following method:

Make a soap solution by dissolving a teaspoonful of granulated soap or a similar quantity of bar soap in a cup of water, and find out how much of this soap solution is needed to make a suds in a pint of hot soft water. Take a certain amount (a tub or boiler full) of hot hard water, add one or two teaspoonfuls of the softening agent, allow the scum to come to the top and remove it. Dip out a pint of the hot hard water and add the amount of the soap solution which was needed to make a suds in the soft water. If it forms suds, the hard water has been softened. If it does not make suds, add another teaspoon-

ful of the softening agent to the water, allow the scum to rise again, remove it, and test as in the previous step. Repeat this until the water is softened, being sure to note the total number of teaspoonfuls of the softening agent used. This will be the approximate amount of that particular softener needed to soften that quantity of water.

2. Some softeners dissolve and react slowly. Undissolved particles remaining on the clothes may cause holes or yellow spots. A white substance will form in the water when the softener reacts with the hardness. Before adding the soap, allow enough time for this softening action to take place and for the substance to rise to the top of the water as a scum so that it may be removed.

Soap.—Soap making, like many other industries which began in the home, has become a thing of great commercial importance. Soap chemists have studied the exact proportions of fat and lye which must be combined to give a perfect soap. If these are combined in the right amounts, a neutral soap results. A soap which contains too much fat is greasy, and a soap which contains too much lye, or in other words "free alkali", is harsh and strong.

Most soaps which are sold for laundry purposes have other ingredients, such as washing soda, naphtha, borax, rosin, or sodium silicate (water-glass) added to them. These materials, if not used in excessive amounts, increase the cleansing power of the soap and do not harm cotton and linen fabrics.

Soapy water cleans better than clear water because it is able to penetrate into a fabric and surround the particles of dirt lodged in it. Agitation, such as that produced by a washing machine or hand rubbing, flushes out these surrounded particles of dirt as the suds move through the fabric. The soap solution or suds not only surrounds particles of dirt, but it unites with grease and oil as well, so that they, too, are washed out of the fabric.

There are many types and forms of soap on the market and these should be selected according to the work for which they are to be used. For silks and woolens, a mild soap which could be used with safety as a shampoo should be used. For general laundering of cottons and linens, an all-purpose laundry soap is satisfactory and is less expensive than the mild soaps. For very dirty articles such as overalls, a strong soap can be used.

The amount of soap which should be used will depend on the kind of soap, the hardness of the water, the fabric to be

washed, and the kind of soil on the clothes. Woolen fabrics require more soap than the other fabrics, and greasy clothes require more soap than clothes with other types of soil. Add the soap gradually to the water in the machine or tub and agitate it to make a two-inch suds before putting any clothes in the water. Enough soap should be used during the washing to keep a lively suds.

Soap chips and granules are more convenient to use and may not be more expensive than bar soap, depending on current prices and the way in which each is used. When buying soap flakes, chips, or granules, note the weight rather than the size of the package.

Directions for making home-made soap may be secured from the Extension Service, College of Agriculture, Lincoln, Nebraska, (Extension Circular 1117, "Soap Making").

METHODS

WHITE CLOTHES

Sorting.—White clothes can be sorted in three groups:

1. Table linen,
2. Bed linen and slightly soiled towels,
3. Body clothes and soiled towels.

For the average washing machine each load of clothes should not exceed 6 to 8 pounds or the equivalent of 4 or 5 double sheets. Dish towels, if only slightly soiled, may be washed with the table linen. If they are very soiled, they may be washed with the other towels and then boiled in fresh, clean suds for 2 or 3 minutes, or washed the second time in clean hot suds.

Handkerchiefs, if only slightly soiled, may be washed with the body clothes. If some member of the family has a cold, the handkerchiefs should be soaked in salt water before they are washed. Boiling insures sterilization. As the clothes are sorted, pockets should be turned and brushed out, knots untied, and all pins and sharp objects removed.

Mending.—One should mend garments before washing them to prevent the rips and holes from becoming larger and to keep the clothes from becoming wrinkled by being mended after they are ironed.

Stain removal.—Since some stains are set by hot, soapy water, these should be removed before the article is washed.

Soaking.—Soaking the clothes in clear water for 10 to 15 minutes removes the surface dirt, opens the meshes of the

fabric, dissolves protein material such as is found on neck bands and cuffs, and removes some of the stains which would be set by the hot, soapy water.

Washing.—While the first load of clothes is soaking, the wash water should be prepared. Fill the machine with very hot water (140° - 160° F.) to within one inch of the water line. If the water is hard and has not been softened in the boiler, add the softening agent to the water in the machine and remove the scum which forms on the surface. Make a two-inch suds by running the machine while adding the laundry soap. If bar soap is used it should be chipped very fine or dissolved in hot water before it is put into the washer.

The length of time which clothes should be washed will depend on the washer. For most machines 8 to 10 minutes is sufficiently long, and for some loads even less time is required. Overwashing is undesirable, as dirt in the wash water may be redeposited on the clothes. If it is not possible to use very hot wash water (140° - 160° F.) boiling the clothes after they are washed helps to keep them white.

Rinsing.—Since cold water hardens soap and causes textile fibers to contract, the first rinse water should be moderately hot (115° - 118° F.). A rinse which has enough soap added to it to make a slight suds is very effective in removing the dirty water and soap from the clothes—especially if the rinse water is hard. Water which is less than 120° F. in temperature is comfortable to the hands and one may agitate the clothes in the rinse water either by hand or with a plunger. The temperature of the second rinse water may be cool or warm. A third rinse is desirable, especially if the first rinse has been soapy. Rinsing at least once in the washing machine is very effective, although it increases the total time required for washing.

Bluing.—Bluing does not bleach clothes; it merely makes them appear white because it counteracts yellowness caused by too much water softener, strong soap, and insufficient rinsing. Bluing is not necessary if the clothes are washed and rinsed thoroughly, but if it is to be used, it should be added sparingly to the last rinse water. The clothes should be kept moving while they are in the bluing water and removed from it as quickly as possible.

Starching.—Starch is used to give a smooth, glossy finish to cottons and to keep them clean longer. There are many good starches on the market which give satisfactory results if the directions are followed. If starch is boiled for two or three minutes, it is less likely to stick and burn on the iron.

Drying.—Hanging is simplified if articles are shaken out and sorted into groups as they are put into the clothes basket. Handkerchiefs, napkins, and wash cloths can be hung in less time if they are placed in piles so that several may be picked up at a time. White clothes should be dried out of doors when the weather permits. Freezing is harmful to fabrics, however, and indoor drying may be satisfactory if good equipment is provided and space is available.

COLORED CLOTHES

Sorting.—Color-fast cottons and linens should be divided so that slightly soiled articles will be washed as one group and the more soiled articles as a second group. A garment which is not color-fast should be washed by itself.

Soaking.—Badly soiled clothes should be soaked in clear, cool water for five to ten minutes to remove the surface dirt and open the meshes of the fabric.

Washing.—Good results may be secured if the following method is used: Use clean water which is no hotter than is comfortable to the hands (115°-118° F.). Dirty water dulls colors and makes the clothes look dingy, and very hot water may cause the colors to fade. Use an all-purpose laundry soap, or, for very fine fabrics, a mild soap, and proceed in the way described for white clothes. A garment which is not color-fast should be washed quickly in lukewarm water (95°-100° F.) with a mild soap.

Rinsing.—The first rinse should be as hot as the wash water (115°-118° F.) and if the clothes were very soiled or the water is hard, a soapy rinse is desirable. The temperature of the second rinse may be cool or warm. A third rinse should be used if possible, especially if the first rinse was soapy.

Starching.—Children's garments, house dresses, aprons, and shirt collars and cuffs stay clean longer if they are starched slightly.

Drying.—Colored cottons and linens should be hung in the shade, as sunshine causes many colors to fade, particularly when the fabric is damp.

ARTICLES OF SILK OR SYNTHETIC FABRICS

Garments made of silk or of the synthetic fabrics (rayon) are usually considered as special articles and many people wash them by hand, taking care not to twist or stretch them. They may be washed in a machine if the agitation is gentle, or if they are first placed in net bags to prevent their being

pulled and twisted. The machine should not be run for more than three or four minutes.

As both silk and synthetic fabrics absorb moisture readily and will absorb any dirt which is in the water, they should always be washed in clean water and should never be soaked. Warm water (95°-100° F.) and a mild soap should be used for washing these fabrics, as hot water and strong soap may fade the colors and weaken the fabric. The soap should be dissolved in the water before the clothes are put into it. At least two warm rinses (95°-100° F.) should be used.

To hasten drying, one may roll the garment for a few moments in a Turkish towel before hanging it over a smooth rod or line to dry. Pinning it to the line is not desirable. If the garment is to be pressed while damp, one may remove it from the towel, shake it out, and press it with a warm iron.

WOOLENS

Woolen materials are more difficult to wash than most of the other textiles because the fibers become matted or felted together easily when they are wet, and this in turn results in the thickening and shrinking of the fabric. For this reason woolen garments and blankets should be washed carefully and quickly. Good results may be secured if the following method is used:

Use soft or softened warm water (95°-100° F.) and a mild soap. Make a thick suds in the tub or washing machine. If washing the woolen articles by hand, avoid rubbing and twisting. If using a washing machine, run it only a very short time; three minutes is sufficiently long for most woolen articles, and overwashing causes felting and loss of wool. Give very soiled portions of garments extra attention and rub soiled blanket bindings with a brush dipped in soap suds. Rinse two or three times in warm water (95°-100° F.). If the water is hard, soften the first rinse with a mild softening agent.

Remove as much of the water from the fabric as possible by hand or with a wringer or dryer. Spread knitted garments on a large piece of muslin on which the original shape of the knitted garment has been traced, and stretch it gently into shape. If possible, spread blankets on a flat surface to dry; otherwise hang them evenly over a rod or line and change their position several times while they are drying.

Frames of wood or *rust-proof* wire which make it impossible for the garments to dry out of shape may be purchased for woolen hose and baby's garments.

When pressing a woolen garment, cover it first with a slightly dampened cloth and then with a heavier piece of dry material. Use a moderately hot iron and press until the dampened cloth is dry.

CURTAINS, DRAPERIES, AND SLIP COVERS

Most curtains, draperies, slip covers, and other household textiles can be washed satisfactorily if they are color-fast and do not shrink excessively. It is wise to wash a small measured sample before washing the large article, as a test for shrinkage.

If the articles are made of cotton or linen, shake them thoroughly, soak in cold water for several five-to-ten-minute periods to remove the surface dirt, and then wash in the same way as the other colored clothes. If the curtains or draperies are made of silk or synthetic fabrics, shake them, and then wash in the same way as other silks and synthetics. It may be necessary to change the suds several times if the articles are very soiled.

[25M]