

SERVICEABILITY OF SILK HOSIERY

by

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## TABLE OF CONTENTS

INTRODUCTION . . . . .	1
History of Silk Hosiery . . . . .	4
Characteristics of Full-Fashioned Hosiery . . . . .	6
Factors Affecting Service Qualities of Silk Hosiery . . . . .	9
Care as Affecting Service Qualities of Silk Hosiery . . . . .	15
Physical Methods of Testing Hosiery . . . . .	17
REVIEW OF LITERATURE . . . . .	19
METHOD OF PROCEDURE . . . . .	24
FINDINGS AND DISCUSSION . . . . .	26
Practices of the Student Group . . . . .	26
Practices of the Professional Group . . . . .	50
Evaluation of Serviceability Records . . . . .	61
SUMMARY . . . . .	90
RECOMMENDATIONS . . . . .	93
ACKNOWLEDGMENT . . . . .	94
LITERATURE CITED . . . . .	95
APPENDIX . . . . .	98

## INTRODUCTION

Consumers have expressed dissatisfaction with the amount and kind of service received from silk hosiery. Individuala are constantly experimenting to find hose of superior wearing quality. In far too many cases their efforts have been futile and they are still unable to predict the possible service to be expected. Very little is known definitely about the cause of the short life of many silk hose. It has not been determined whether they wear out due to poor construction, to poor quality of yarn, to a combination of both factors, or whether they fail due to careless or improper handling in wearing and laundering.

Women face a constant conflict of forces in buying silk hosiery, for in addition to long wear they desire satisfactions arising from wearing hose that are, according to our standards, considered beautiful. As skirts have become shorter, women are demanding hosiery that is sheer and clear, and combines beauty, comfort, and service. Silk hosiery is worn by fashionable women in all parts of the world, but only in America has this frail luxury become a necessity of everyday life.

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Price of hosiery is determined largely by the sheer-ness of the knitted goods, as evidenced by the fact that eight-thread service-weight often sells for less than two-thread sheer. In this instance, for less expenditure of money, four times as much silk and much more service, may be obtained in buying service-weight hose.

In 1937 hosiery consumption exceeded 126,000,000 dozen pair according to the Annalist for January 1939 (3). These figures compared roughly with population figures suggest an annual per capita consumption of a dozen pair. Hose are still a luxury and the consumption varies sharply between classes of people. The New York business woman, earning \$40 to \$60 weekly, for example, is likely to buy two or three dozen pairs yearly, while the barefoot girls in the South may buy none, making at home the few they wear in winter. Women's full-fashioned hosiery is by far the most important part of the industry. With a production of about 32 per cent of the unit total, or about 40,320,000 dozen pairs, such hosiery accounts for about 64 per cent of the annual wholesale value of all hosiery produced. The industry's total wholesale value in recent years has run slightly less than \$400,000,000 annually (3) and of that amount about \$256,000,000 is for silk hosiery alone.

Courses in home economics stress wise expenditures, especially the relation of the clothing budget to the budget in general. Women find in their estimates of expenditures that the price of hosiery is exorbitant for service rendered. The consumer has little information to rely upon for judgment concerning the hosiery she buys, largely because manufacturers and merchants resort to "glamour appeal" in advertising hosiery. A few recent advertisements have been educational due to the fact that some advertisers feel that an informed consumer is a good consumer. Data concerning serviceability of various qualities and weights of hosiery should be valuable to all women and girls interested in clothing economy.

Considering the fact that in spite of the depression fashion has ruled to vastly increase production of women's full-fashioned hosiery, there is still the matter of allotting to the purchase of hosiery its proportionate place in the clothing budget. The question of recognizing such service qualities as one can afford is a problem upon which research might yield some helpful information.

The purpose of this study was to secure information concerning service of silk hosiery under normal conditions of wear; to determine the variation in hosiery expenditures

with weight of hosiery chosen, price paid, and care given the hosiery; and to formulate on the basis of findings recommendations that will serve as an aid in wise selection, use, and care of hosiery.

### History of Silk Hosiery

Knitted hosiery, such as we know it today, had its beginning some time during the sixteenth century. Knitting is the interlacing a single thread on two or more needles so as to form a fabric or garment. The word hosiery is derived from the Anglo-Saxon "hosa", a term designating a garment made of cloth, similar to very tight trousers that covered the legs and lower part of the body. Prior to the sixteenth century, bands of cloth or leather were wrapped around the leg to form stockings. About 1550 leg coverings, knit by hand, came into being, and ten years later the Trade of Hosiers was established by an act of Parliament. Hand knit hose were made on primitive needles of bone or wood and the mesh was very coarse. The mechanical imitation of hand knitting was first conceived by an Englishman, William Lee. In the year 1589 he succeeded in building a mechanical contrivance that imitated the motions of

the hands. When Queen Elizabeth refused to give Lee a patent for his stocking frame, Lee accepted the invitation of the ambassador of Henry IV and transferred himself and his invention to France. He built more machines and set up a small factory at Rouen. The hooked needles of Lee's machine survive today (7).

The latch needle was first patented in France in 1806 and a modification of it patented in 1863 in the United States. Though this type of needle made no finer mesh than the bearded or hooked needle, it did permit much speedier operation of the machine (9).

Before the World War, the domestic product was mostly seamless, but the desire of well-to-do Americans for better fitting hosiery led to great increase in production of full-fashioned silk hosiery. The full-fashioned product is knit on a "Cotton" frame, the invention of William Cotton, an Englishman, and consists of a vertical, movable needle-bar. Full-fashioned machines of American invention are simpler than those made abroad (13).

## Characteristics of Full-Fashioned Hosiery

The four types of hosiery are full-fashioned, circular (seamless), fashioned seamless, and cut hosiery. At present the most commonly used of these types for women's hose is the full-fashioned, which are knit on flat bars and shaped to fit the foot and leg by "narrowing" or combining stitches. Full-fashioned hosiery is made in two parts. The leg is knitted first, starting at the top or welt and proceeding to the calf, ankle and heel. As the knitting proceeds, the fabric, which is flat, is reduced in width or "fashioned" by decreasing the number of stitches. This is accomplished by a device on the knitting machine known as the narrowing motion. The number of stitches in the width of the fabric changes at each fashion mark, in accordance with the number of needles taken out of operation. When the fabric of the leg is completed, it is transferred to a second machine or "footer" which proceeds to knit the foot. Finally the tip of the toe and the bottom of the heel are looped and the edges of the fabric are then sewed together or "seamed" (16).

Full-fashioned hosiery can be identified by the fol-



lowing characteristics: (a) the inside of the welt, complete leg, and sole of the foot to the tip of the toe, are seamed, (b) the same stitch size is maintained throughout the entire leg, (c) there are fewer stitches in the ankle than in the upper part of the leg, (d) fashion marks are evident and indicate the place where one or more stitches end, (e) the heel contains a number of narrowing marks or fashion marks in the lower portion near the seam line, and does not contain a gore or diagonal knitted line running across it, (f) the bottom part of the heel and the tip of the toe are looped, and (g) the toe has a group of narrowing marks which start near the instep and end in the tip of the toe (16).

The high heel or high spliced heel is that re-enforced part of a stocking above the shoe line. The heel and foot are often strengthened by plaiting.

The parts of full-fashioned hose that are mentioned in this study are indicated in Fig. 1 taken from Government Circular C422 on Methods of Testing Hosiery (17).

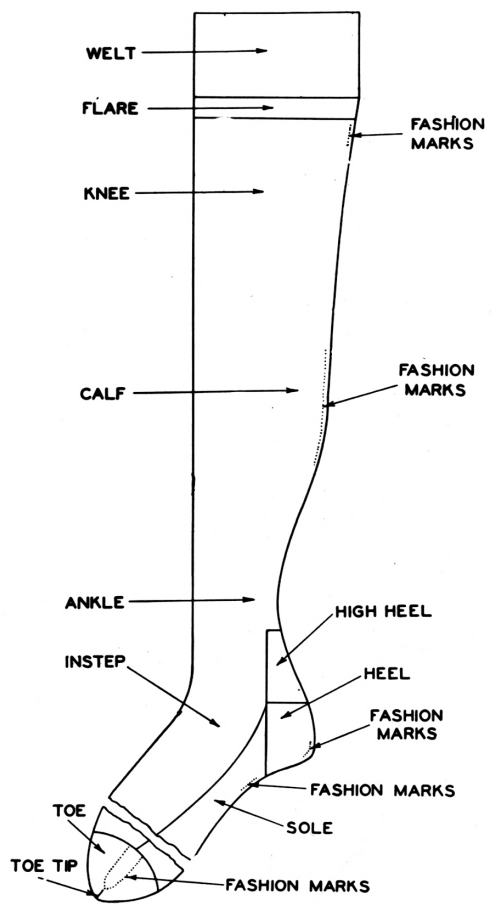


Fig. 1. Full fashioned hose. Adapted from Methods of Testing Hosiery Circular 0422 (17).

## Factors Affecting Service Qualities of Silk Hosiery

Wide differences exist in the buying methods of the consumer and the retail merchant buyer. In the buying of hosiery, the purchaser at the retail counter is most generally guided by size of foot, length of leg, and some term used rather lightly to indicate weight and appearance. The merchant buyer has a more precise system of terminology which is used to identify the desired goods. For example, "3-thread, 51 gage," specifies to the manufacturer the exact merchandise wanted as to size of yarn and fineness of knitting. The information upon which an intelligent selection of hose might be based includes yarn size and twist, gage, wales per inch, number of courses, types of re-enforcements, size and length, possible occurrence of imperfections in yarn and knitting, and method of dyeing.

Weight of silk hose is determined by the size of yarn used in their construction. A sheer stocking is lighter in weight than one of service-weight, and is therefore considered to have a more pleasing appearance. In classifying the types of hosiery given by the National Associa-

tion of Hosiery Manufacturers (20), the word "Sheer" is used for "Chiffon". The three general classes are:

<u>Gage</u>	<u>Sheer</u>	<u>Semi-service</u>	<u>Service</u>
39	5 thd* or less	6 to 8 thd incl.	9 thd or over
42	5 thd or less	6 to 7 thd incl.	8 thd or over
45	5 thd or less	6 to 7 thd incl.	8 thd or over
48	4 thd or less	5 to 6 thd incl.	7 thd or over
51	3 thd or less	4 to 5 thd incl.	6 thd or over

\* thd = thread

These definitions are not intended to deprive the maker or seller of hosiery of the right to use any other terms that he may see fit to use instead of "sheer", "semi-service", or "service" for fabrics coming under these respective classifications. However, no fabrics are classed under these respective classifications unless they come within the specifications given (20).

In order to understand what is meant by 3-thread or 7-thread, the method of construction of the silk yarns is briefly described. The original silk fiber, as produced by the silk worm consists of two fibroin filaments held together by sericin. A thread, strand, or "single" as used in the hosiery industry, generally contains 8 to 14 silk filaments, and varies in average size from 13 to 15 deniers (18). Threads are thrown in various numbers, usually ranging from 2 to 10, to form the yarn for silk hosiery. The tensile strength and elasticity of yarns is

largely dependent on the elongation, crimpiness, adhesion, and smoothness of the individual fibers, as well as the number of fibers in any cross-section of a yarn and the twist in the yarn (12).

Consumers are willing to pay more for crepe hosiery or those made of high twist yarn because they possess certain advantages which more than compensate for higher price. The additional twist in crepe hosiery produces a dull, permanent finish, gives additional strength to the yarn, and is more resistant to catches and snags (10, 14). Low twist silk produces soft, lustrous knitted fabrics, and high twist silk, harsh, crepy, dull fabrics. According to the 1936 standards for minimum twist requirements for crepe yarns in hosiery (10), hose to be designated as crepe should be constructed, in the boot, of yarn in which the total number of turns in both the final and initial twists equal at least 100 turns per inch for 2-thread; 80 turns per inch for 3-thread; 60 turns per inch for 4-thread and 50 turns per inch for 5-thread.

The "gage" or "gauge", indicating fineness of stitch, of a full-fashioned stocking depends on the number of needles per  $1\frac{1}{2}$  inches on the knitting machine (17). The gage is determined by counting the number of wales in the

widest part of a full-length stocking, assuming that the stocking was made on a full 14-inch needle bar. The gages commonly used in making full-fashioned hose are 39, 42, 45, 48, 51, 54, 57, and 60.

The wales are the rows of stitches running lengthwise in hosiery, each wale representing a needle on the knitting machine. The number of wales is an indication of the closeness of texture of the fabric at its finished width (17).

Courses are rows of loops or stitches running across the stocking, which determine the closeness of texture of the fabric (17). In a normal fabric the number of courses to the inch should be approximately one and one-half times the number of needles per inch in the knitting machine (2). In other words, the number of courses per inch should be similar to the gage number. The loops per square inch calculated from the wales and courses determine the texture of the fabric.

Reinforcements of the heel, sole of the foot, and toe should be sufficient to withstand the abrasive action of the shoe. Reinforcements should be of good appearance, properly plaited or spliced, and not interfere with the fit of the stocking. Plaiting of silk over cotton may in-

crease the durability of heel and toe reenforcements, although sometimes the layer of silk on the outside is too thin or the cotton so heavy that it cuts the silk yarns, giving a fuzzy appearance to the heel or toe. Plaiting is employed to decrease cost, but can be serviceable as well, if carefully used. The shape and height of heel splices is a matter of fashion, but heel reenforcements should come at least two and three-fourths inches above the heel to be of any real use.

The size of a stocking is the length of its foot in inches. It is determined by laying the stocking out flat and measuring the distance from the tip of the toe to the back of the heel along a straight line from the tip of the toe through the uppermost fashion mark in heel, which is approximately one inch above the bottom of the heel (8). Measurements are made to the nearest one-half inch.

"The standard length of ladies' full-fashioned hosiery is 30 inches ( $\pm 1$  inch) in all sizes, and this length will be furnished when not otherwise specified" as stated by the U. S. Department of Commerce in Hosiery Lengths and Sizes, Commercial Standard CS46-36 (8). The length is the distance from the bottom of the heel to the uppermost edge or top of the stocking. This measurement is taken so that the edge of the ruler touches the curve

at the ankle and is parallel to the front line of the stocking. Experience has shown, it is claimed, that stockings of standard length will fit at least 75 per cent of the customers, because of the elastic nature of the silk fiber. Other lengths are available as required in "short" (27 inches) and "long" (33 inches) (18). Adjustable and "proportioned" stockings, designed to meet the requirements for varied length and provide "stockings that fit every leg length and foot", have been responsible for a considerable sales volume during the past few years.

Imperfections in yarn and knitting cause the failure of many silk hose to meet Standard A in the standards of construction set up by the National Association of Hosiery Manufacturers (20). For this reason, the following three classifications have been made:

Standard A represents the highest classification of regular merchandise in its respective gage.

Standard B represents medium quality merchandise.

Sub-Standard represents any grade below "Standard B".

Standard A merchandise is not stamped. The stamping of all other standards and classifications, as irregulars and/or seconds and thirds and/or menders, is mandatory (20).



Dye is commonly stripped from stockings which are left over from one season to another so as to redye them in the current fashionable shades. If this is done correctly, the durability of hosiery will not be damaged seriously. The silk may be injured as much on the first dyeing as on stripping and redyeing. No regulation in the Hosiery Code requires redyed hose to be so marked (6).

Many of these factors which undoubtedly affect serviceability are not considered by consumers when purchases of hosiery are made. Eventually, as consumers realize their importance, information will be given by the manufacturers and merchant. The resulting purchases will no doubt give better satisfaction.

#### Care as Affecting Service Qualities of Silk Hosiery

Runs are started in silk hosiery by a complete breaking of the yarn in some one place, either by catching the yarn on something and tearing it, or by stretching the fabric beyond its limit. The construction is such that when the yarn is broken, the stitches pull out for a considerable distance. Although a snag may not cause a hole or run immediately, it may break some of the filaments in the yarn or pull the yarn until the tension later causes

it to break. If the yarn has been pulled until it makes a dark line across the course, part of the tension may be eased by working it back gently (16). Certain types of "run-proof" stockings have been recently patented. They differ from the ordinary stocking in the type of stitch used, it being designated as warp knit. It is claimed that when a yarn breaks the ends will catch in the adjacent stitches thereby preventing a run from developing.

In laundering hosiery, the three factors to be especially regarded are the quality of the soap, the temperature of the water, and the method of manipulation. A good quality of neutral soap should be used; soaps containing free alkali should be avoided (21). Good practice calls for dissolving the soap in a small amount of hot water and then adding enough cooler water to bring the whole to the temperature known as "luke warm". The solution should be sufficiently complete so that there is no chance for the hosiery to pick up solid soap particles, which will be difficult to remove. For a similar reason the water should be soft and the hosiery should be thoroughly rinsed (16).

In manipulating hosiery, the delicate silk yarn is likely to be torn if roughly handled. Wringing, rubbing,

or stretching should be avoided. Drying should be accomplished without putting any undue strain on the fabric which might cause permanent deformation. It is better to dry the hose by laying them flat on a towel rather than hanging them on a line. If the latter practice is followed, the stockings should be hung from the welt or the foot. Exposure to direct sunlight should be avoided; it is likely to affect the dyes and even the silk itself (16).

It is a good practice to launder the hose immediately after they have been worn and not to wait until the next day. Perspiration which is absorbed can be removed more readily when it is fresh than if permitted to remain on the stocking for a day or longer. It is claimed that laundering the stockings immediately after they have been worn will prolong their life.

#### Physical Methods of Testing Hosiery

Testing apparatus used by the National Bureau of Standards for physical testing of hosiery includes devices which test for snagging, resistance to abrasion, stretch and recovery, bursting strength, "distensibility",

"recoverability", and "stretch-endurability". These tests are also used by the National Association of Hosiery Manufacturers at the National Bureau of Standards (17). The snag tester determines the comparative snag resistance of hosiery; the abrasion machine tests the resistance of heel and toe reenforcements to holes as it simulates the rubbing action of a shoe; a tensile testing machine of the pendulum type is used to measure stretch and recovery of hosiery; the "hosiery testing machine" tests for "distensibility", "recoverability", and "stretch-endurability"; the pendulum-type breaking-strength tester with the ball-burst attachment is used to test bursting strength.

The "hosiery testing machine" has been specially designed and developed at the National Bureau of Standards for measuring the behavior of a stocking when the upper part of the leg of the stocking is repeatedly distended in a way which subjects it to forces similar to those exerted at the knee when the stocking is held with garter clasps. During the testing, means are provided for recording the relationship between the load exerted on the stocking and the circumference for each cycle of loading and unloading. In this way numerical values for the properties called "distensibility", "recoverability", and "stretch-endura-

bility" are obtained.

## REVIEW OF LITERATURE

A review of literature indicated that for some time an interest has been shown in wearing tests for silk hosiery. During the past few years, several studies have been reported which were concerned with the wearing qualities of silk hosiery. These have offered valuable suggestions to the writer. Further investigation of hosiery performance is needed, especially in this locality where no study has been made. A brief review of the investigations that are in part or wholly concerned with the serviceability of silk hosiery follow.

In 1929 Dexdale Hosiery Mills (15) secured the cooperation of 100 college girls at Wellesley College and the same number at Radcliffe College to test the wearing quality of their special brand of chiffon weight, 5-thread, 42 gage, full-fashioned hosiery as compared with two other brands of the same color, quality, size and gage. The girls kept an accurate record of the hours each pair of hose was worn and laundered the hose daily after each wearing. From the Wellesley records, it was concluded

that a pair of hose had an average life of 75 or more hours while at Radcliffe the average life was 67 hours.

Sears (19) found through a study made with 592 college Home Economics Club girls at the University of Missouri that the average price paid per pair of silk hose was sixty nine cents; that selection was based on appearance and price, with brand coming next, and consideration of fiber content last; that widely advertised brands predominated among those purchased and also among those mentioned by girls as possessing the best wearing qualities. This study indicated that the college girl prefers full-fashioned, silk, chiffon hose and that the average college girl in 1931 was spending about \$12 a year for hosiery. Sears concluded that the college girl desires additional information concerning their wearing qualities and guides for buying silk hosiery.

Richardson and Baker (15) made a survey in Montana dealing with the selection, care, and wearing qualities of women's silk hosiery. Their investigation was carried out by survey, laboratory, and actual wearing tests. Conclusions drawn from the survey study showed that 250 women chose 46 brands of hose, of which 10 were most popular, that 24 pairs per year were most frequently reported, that

occupation affected greatly the wear of silk hose, and that students and clerks required more pairs per year than other women. Teachers and clerks were most influenced by wearing quality, while students and rural women considered advertisements first. In each group studied a hole in the heel seemed to predominate as the type of wear first experienced. Laboratory tests were made of the quality of fabric in boot by photomicrographs showing variations in weight, thread number, yarn twist, and general construction. The bursting strength test showed a definite decrease in going from service to chiffon weight. Composition and abrasion tests were performed on the high splice heel. Data on this subject showed a definite increase in wearability with the use of an increased percentage of cotton in the high splice. Service, semi-service, and chiffon were tested for actual wear and the results compared. The average wearing time for all service weight hose was 320 hours, for semi-service 243 hours, and for chiffon weight, 79 hours. The three factors that have influenced the life of these silk hose were number of threads in the yarn, twists per inch, and composition of the high splice just above the heel.

Woods (22) made a comparison at Rust College of

certain hosiery-buying practices of a group of non-home economics students with those of a group of home economics students who had studied buying of hosiery. Students who had studied hosiery buying problems tended to be more aware of their hosiery needs and to use more reliable guides for selection; showed a decrease of 13 per cent over the other group in total number of pairs purchased and a decrease of 16 per cent in total hosiery expenditures.

Anders (1), University of Tennessee, carried on research with questionnaires and record sheets. She found that women were most impressed by (a) appearance, (b) price, and (c) durability, in the purchase of hosiery. In the group surveyed, twenty nine brands of hosiery were purchased. In her study the life histories of 253 pairs of hose were studied and it was concluded that 2-thread were worn on an average of 10 times; 3-thread, 18 times; and 4-thread, 20 times. The average cost of the 253 pairs purchased was \$0.92 per pair. More hose were bought at \$0.79 than any other price. Two-thread bought at \$0.79 gave better service than did 2-thread at \$1.15. Three-thread hose at \$1.00 a pair gave better service than did 3-thread in any other price group.



Coles (5) completed a questionnaire survey, in 1939, concerning demand of consumers for articles of clothing, including hosiery. She compared the character of present purchases, effect of income on practices and preferences in purchase, difficulties encountered in buying, and difficulties with wearing qualities of hose of two groups of buyers, small-town and city. She found that silk chiffon hose were the most popular, but that money available apparently lead a portion of both groups to buy other weights and fibers. Altogether, about three-fourths paid less than one dollar for their hose; prices between 75 cents and 99 cents were paid by over one-third of all buyers, and from 50 cents to 74 cents by one-fourth of all buyers. Dissatisfaction with leg length was apparently frequently experienced by almost 20 per cent of the buyers. Difficulty in getting correct lengths were experienced by about 30 per cent of those buying knee length hose. One-third of each group agreed that hose most frequently wore out at the heel, one-fourth, at the toe, and about one-sixth in the leg. The larger percentage of those wearing chiffon said their hose wore out most frequently in the leg.

## METHOD OF PROCEDURE

The data for this study were secured from a group of college students and a group of graduate students and faculty members by means of questionnaires and record sheets. Hereafter the first group will be designated as the student group, and the second, the professional group. The questionnaires, in their preparation, were criticized and suggestions made by members of the staff of the clothing department; in revision, suggestions of the faculty were incorporated. Information was obtained over a period of six months, from December to June, 1939. Copies of all forms used in the study will be found in the appendix.

The questionnaire for the student group (Form I) inquired into the selection, purchasing habits, and methods of care given by college students to their silk hosiery. With the professional group it was taken for granted that due to home economics training, many answers would be identical, therefore the questionnaire (Form V) for that group was brief, asking only such questions as would make possible significant comparisons with the student group.

Record sheets were provided for an accurate day by day check of the wear and care of silk hose (Form II). The student group was asked to keep a record of the actual wear received from one pair of silk hose of their own choice as to brand and weight. The professional group kept records of two pairs of silk hose of the same brand, weight, and price. One pair was laundered in ivory or lux flakes both before wearing and each time after wearing according to directions given in Form III. The second pair was rinsed before wearing and each time after wearing (Form IV). It was hoped that some conclusions might be drawn as to which of the two procedures gave better wear.

Two hundred fifty college women enrolled in clothing classes returned their marked questionnaires. Only 203 of these questionnaires were complete; they supplied the information which was checked, tabulated, and analyzed. One hundred thirteen student record sheets on the service of one pair of silk hose were similarly tabulated and analyzed. Findings were listed and summarized and recommendations made.

Thirty-five professional women were given questionnaires (Form V), and two record sheets on which to record wear from one pair of hose laundered with soap suds and

one pair washed in clear water after each wearing. Data from the 28 questionnaires and the record sheets returned were checked, tabulated, and analyzed.

## FINDINGS AND DISCUSSION

### Practices of the Student Group

An effort was made to determine what factors most affected Kansas State College women in their selection of hosiery. On the questionnaires returned by 203 students, each person indicated the three factors which most influenced her choice. Table 1 shows that 23 per cent of the students were most influenced by serviceability; of equal concern and next in importance was appearance and price, both checked by 22 per cent of the students; a close third was weight, considered by 20 per cent.

Table 1. Factors affecting purchases of hosiery reported by 203 Kansas State College women, stated in numbers and percentages.

	Number :	
	checked :	Per cent
Advertising	6	1
Appearance	132	22
Brand	60	10
Gage number	6	1
Opinion of salesgirl	1	
Price	134	22
Reputation of store	7	1
Serviceability	140	23
Weight	123	20
Total	609	100

Economists have pointed out and consumers have agreed that they are confused by the large variety of branded goods on the market. From a study of Table 2, it was evident that 53 brands recently were chosen by 203 college women. Four brands were most popular with from 10 to 20 per cent of students showing a recent purchase among each of these brands. It was of interest to note that the brands ranking highest were sold by prominent local merchants.

Table 2. Brands chosen by Kansas State College women in their last two purchases of silk hosiery, stated in numbers and percentages.

	Last purchase		:Previous purchase	
	Number:	Per cent:	Number:	Per cent
Admiration	2	1.0	2	1.0
Postscript	8	4.0	6	3.0
B & G	7	3.5	6	3.0
Real Silk	2	1.0	2	1.0
Belle Sharmeer	9	4.0	3	1.5
Berkshire	27	13.0	25	12.5
Cannon	1	0.5	-	-
Emi-Jay	1	0.5	1	0.5
Franchete	3	1.5	1	0.5
Gaymode	40	20.0	26	13.0
Gotham Gold Stripe	5	2.5	4	2.0
Gotham Onyx	1	0.5	-	-
Hummingbird	3	1.5	6	3.0
Kantrum-Berkshire	6	3.0	5	2.0
Kayser	10	5.0	6	3.0
Klinecrest	1	0.5	1	0.5
Miller	-	-	1	0.5
Mellow-Glow	1	0.5	1	0.5
Merville	-	-	1	0.5
Modern Maid	2	1.0	1	0.5
Munsing Hose	1	0.5	-	-
Peacock	1	0.5	1	0.5
Phoenix	26	13.0	30	15.0
Rollins	7	3.5	6	3.0
Sear's Hose	2	1.0	9	4.0
Strutwear	4	2.0	3	1.5
Sweet Briar Maid	1	0.5	1	0.5
Van Raalte	3	1.5	2	1.0
Ward's Hose	7	3.5	20	10.0
Gordon	-	-	1	0.5
Mojud	2	1.0	4	2.0
Air Maid	-	-	2	1.0
Constellation	1	0.5	1	0.5
Archer	1	0.5	1	0.5
Princess Pat	1	0.5	-	-
Carrier	2	1.0	-	-
Proper	-	-	1	0.5
Claussner	2	1.0	2	6.0
Lerner's	1	0.5	3	1.0

Table 2. (cont.)

	Last purchase		:Previous purchase	
	Number:	Per cent:	Number:	Per cent
Vanity Fair	-	-	1	1.5
Gorjus	1	0.5	1	0.5
Holeproof	1	0.5	2	1.0
New Process	-	-	1	0.5
North Mort	1	0.5	1	0.5
Others	9	4.0	12	6.0
Total number of brands	53			

Consumer advisers have suggested the purchase of two pairs of silk hosiery of the same brand, weight, and color so that the good hose from each pair can be matched if one stocking has been discarded due to failure. Two pairs of silk hosiery were purchased at one time by 70 per cent of those replying, as shown in Table 3. About an equal percentage of women purchased one and three pairs at one time; however, 96 per cent felt it was economical to buy two or more pairs alike.

Table 3. Number of pairs of hose purchased at one time and opinions as to economy of practice reported by 203 students of Kansas State College, stated in numbers and percentages.

		Number: Per cent	
Number of hose of the same brand, color, and weight bought at one time			
1		26	13.0
2		144	70.0
3		33	16.0
4		1	0.5
5		1	0.5
6		0	0.0
Total		203	100.0
Opinion of students as to whether it was economical to buy two or more pairs alike			
Yes		195	96.0
No		8	4.0
Total		203	100.0

It was found that most of the students were buying more than one weight of hose as shown in Table 4. Standards for women's full-fashioned hosiery as set up by the National Association of Hosiery Manufacturers (20) have established three classes of weights. They are "sheer", "semi-service", and "service", the construction of the hose in each class being defined in terms of gage and yarn



size. Nomenclature regarding weights has been confusing since the names do not seem to mean the same thing in two different stores. For purposes of tabulation, it was arbitrarily decided that in this study sheer should include what is generally called 2-thread and 3-thread chiffon; 4-thread and 5-thread semi-service; and service, 6-thread and over. Sixty-four per cent of the students most recently purchased semi-service hosiery and 33 per cent sheer. Sheer hose were worn for dress by 78 per cent of those reporting. For everyday wear, 60 per cent wore semi-service, and only 7 per cent wore service. Thirty-seven per cent or approximately one-third of the group wore the same weight hosiery for all purposes.

Table 4. Weights of hose chosen by 203 Kansas State College women, stated in numbers and percentages.

		Number: Per cent	
<b>Weight of hose student purchased last</b>			
	Sheer	69	33.0
	Semi-service	130	64.0
	Service	9	4.0
	Total	208	100.0
<b>Wear for dress occasions</b>			
	Yes	157	78.0
	No	45	22.0
	Total	202	100.0
<b>Service for everyday wear</b>			
	Yes	15	7.0
	No	183	93.0
	Total	198	100.0
<b>Semi-service for everyday wear</b>			
	Yes	118	60.0
	No	80	40.0
	Total	198	100.0
<b>Same weight for all purposes</b>			
	Yes	76	37.0
	No	128	63.0
	Total	204	100.0

During recent years considerable attention has been given to sizes and lengths of hose and their actual measurements. As a result, hose may be found on the market that are proportioned for women of different heights. Seventy-seven per cent of the students asked for a specific leg length in purchasing hosiery, as shown in Table 5. Of this group, 32 per cent specified long length, while only 7 per cent preferred short. No students indicated that they purchased outside.

Table 5. Extent to which leg length was specified by 203 Kansas State College students in the purchase of hose, expressed in numbers and percentages.

	Number: Per cent	
Leg length bought by students		
Short	15	7.0
Medium	78	38.0
Long		
32 inches	54	27.0
34 inches	5	3.0
Above 34 inches	4	2.0
Not specifying	47	23.0
Total	203	100.0
Students buying outside	0	0.0

Two-thirds of the students purchased sizes  $9\frac{1}{2}$  and 10, 33 per cent bought size  $9\frac{1}{2}$ , and 31 per cent, size 10.

Ninety-four per cent purchased sizes 9,  $9\frac{1}{2}$ , 10, and  $10\frac{1}{2}$ . Seventy-five per cent indicated that they purchased hose one-half inch longer than the foot (Table 6).

Table 6. Sizes of hosiery purchased by 203 Kansas State College women, stated in numbers and percentages.

Sizes hose bought	Number: Per cent	
$8\frac{1}{2}$	7	4.0
9	24	12.0
$9\frac{1}{2}$	68	33.0
10	63	31.0
$10\frac{1}{2}$	37	18.0
11	4	2.0
	<hr/>	
Total	203	100.0
Students purchasing hose one-half inch longer than foot		
Yes	133	75.0
No	44	25.0
	<hr/>	
Total	177	100.0

On the whole, students state that they do not consider gage in buying hosiery. Ninety-one per cent indicated that they did not know what gage they purchased, as stated in Table 7. Due to the fact that gage is an indication of the elasticity of hose, it would seem desirable that students be better informed concerning such an important factor affecting the service of hosiery.

Table 7. The extent to which 203 Kansas State College students buy hosiery by gage, stated in numbers and percentages.

		Number: Per cent	
<hr/>			
Gage hose purchased			
54		0	0.0
51		3	2.0
48		11	6.0
45		2	0.5
42		1	0.5
Those not knowing		182	91.0
Total		199	100.0

The price range for silk hosiery at the time these data were obtained was \$0.49 to \$1.65 in this section of the country. Almost all weights of hosiery could be found in either the high or low range of this price scale. Thirty-six per cent of the students paid \$0.70 to \$0.79 per pair for their hose. The second most popular price range was \$1.00 to \$1.10, 20 per cent of the women buying within these prices. Twelve per cent purchased in the \$0.80 to \$0.89 range, and 10 per cent, \$1.11 to \$1.20 hosiery. Table 8 presents a summary of the prices commonly paid for hosiery.

Table 8. Price paid for last hose purchased by 203 Kansas State College women, stated in numbers and percentages.

	Number purchased:	: Per cent
\$0.49	1	1.0
0.59	18	9.0
0.60 - \$0.69	10	5.0
0.70 - \$0.79	69	36.0
0.80 - 0.89	23	12.0
0.90 - 0.99	1	1.0
1.00 - 1.10	39	20.0
1.11 - 1.20	19	10.0
1.21 - 1.30	6	3.0
1.31 - 1.40	4	2.0
1.41 - 1.50	0	0.0
1.51 - 1.75	1	1.0
Total	191	100.0

Plain knit hosiery seemed to have retained its popularity even with the recent innovation of runproof, non-run, mesh, and lace hose. One hundred seventeen students had recently purchased one of the non-run types of hosiery, 49 per cent of this group buying mesh, 38 per cent non-run, and 13 per cent lace as shown in Table 9. Sixty-five per cent of these students had found lace, mesh, or non-run construction satisfactory. Only 21 per cent of the students have purchased irregulars or seconds, 46 per cent of that group finding them satisfactory. One student

found menders or thirds satisfactory of the two students buying this quality hosiery. Eighty-eight per cent of the students were of the opinion that they would not buy hose if it were made known that they had been redyed at the factory.

Table 9. The construction and quality of silk hosiery purchased by 203 Kansas State College women, expressed in numbers and percentages.

		Number: Per cent	
<b>Types of hosiery bought recently</b>			
Lace		15	13.0
Mesh		58	49.0
Non-run		52	38.0
	Total	117	100.0
<b>Students finding lace, mesh, or non-run satisfactory</b>			
Yes		59	65.0
No		32	35.0
	Total	91	100.0
<b>Students buying "irregulars" or "seconds"</b>			
Yes		43	21.0
No		158	79.0
	Total	201	100.0
<b>Students finding "irregulars" or "seconds" satisfactory</b>			
Yes		33	46.0
No		38	54.0
	Total	71	100.0

Table 9. (cont.).

		Number: Per cent	
Students buying "menders" or "thirds"			
Yes		2	1.0
No		189	99.0
	Total	191	100.0
Students who found "menders" or "thirds" satisfactory			
Yes		1	2.0
No		34	98.0
	Total	35	100.0
Students' opinion of whether they would buy hose if they knew they had been redyed at the factory			
Yes		21	12.0
No		159	88.0
	Total	180	100.0

Fashion in skirt lengths has apparently checked the use of knee-length hosiery. Thirty-two per cent of the students have purchased elastic top or knee-length hosiery as indicated in Table 10. Of the group not finding knee-length hosiery desirable, 65 per cent indicated it was because they were too short in the leg. Approximately half of the students wore garters to hold up their hose, and the other half, girdle supporters.



Table 10. Opinions of 203 Kansas State College women concerning the desirability of knee-length hosiery and methods used for fastening full length hosiery, stated in numbers and percentages.

		Number:	Per cent
<b>Students buying elastic top or knee-length silk hose</b>			
Yes		65	32.0
No		138	68.0
Total		203	100.0
<b>If knee-length or elastic top hose were not satisfactory, the following reasons for unsatisfactory wear:</b>			
Run more easily		5	8.0
Too short in leg		39	65.0
Too long in leg		16	27.0
Total		60	100.0
<b>Methods of holding or fastening hose</b>			
Round garters		50	18.0
Flat garters		72	27.0
Girdle supporters		145	53.0
Belt supporters		3	1.0
Twisted and rolled above knee		2	0.5
Twisted and rolled below knee		0	0.0
Other practices		1	0.5
Total		273	100.0

On the whole, students chose their own hosiery. Only one per cent reported that some one other than herself made her purchase. Eighty-seven per cent purchased hose from a local store, 10 per cent by mail, and 3 per cent from a traveling representative, as shown in Table 11.

**Table 11.** Place of purchase of hosiery and extent to which own selections are made, reported by 203 Kansas State College students, expressed in numbers and percentages.

		Number : Per cent	
<b>Students choosing own hose</b>			
Yes		200	99.0
No		3	1.0
	<b>Total</b>	<b>203</b>	<b>100.0</b>
<b>Students buying from local store</b>			
Yes		177	87.0
No		26	13.0
	<b>Total</b>	<b>203</b>	<b>100.0</b>
<b>Students purchasing by mail</b>			
Yes		20	10.0
No		178	90.0
	<b>Total</b>	<b>198</b>	<b>100.0</b>
<b>Students purchasing from representative</b>			
Yes		7	3.0
No		191	97.0
	<b>Total</b>	<b>198</b>	<b>100.0</b>

An attempt has been made to learn whether students differentiate between full-fashioned and circular knit hosiery. It was evident that the larger percentage of students were able to distinguish full-fashioned hose by definition. Eighty-eight per cent knew that a full-fashioned stocking is knit in a flat piece and shaped to fit the leg by dropping stitches on the needle bar forming fashion points, as indicated in Table 12. No one thought that the presence of a seam in the back of a stocking was an indication of full-fashioned hosiery.

Table 12. Definition checked by 203 Kansas State College students as indicating full-fashioned hosiery, expressed in numbers and percentages.

	Number: Per cent	
1. Any stocking with seam down back	0	0.0
2. Circular knit	8	4.0
3. Stocking with fashion points placed back of the calf and back of knee along seam, but no stitches dropped	16	8.0
4. Stocking knitted in flat piece and shaped to fit leg by dropping stitches on the needle bar forming fashion points	178	88.0
Total	202	100.0

A record of the laundering practices reported by 203 college students in caring for silk hose appears in Table 13. A preference was shown for rinsing new hose in clear water before wearing as evidenced by the fact that 79 per cent followed this practice, while 52 per cent washed new hose in suds. It was evident that both practices were used by part of the students in that 300 answers were given by 203 students. It is generally recommended that silk hose be laundered after each day of wear by gently squeezing them in soap suds made of neutral soap dissolved in warm water followed by thorough rinsing (16, 21). By far the larger percentage of women, over three-fourths, laundered their hose after one wearing.

Table 13. Method and frequency of laundering silk hose as reported by 203 Kansas State College women, stated in numbers and percentages.

		Number : Per cent	
<b>Students washing new hose in a suds and rinsing before wearing</b>			
Yes		76	52.0
No		71	48.0
	Total	147	100.0
<b>Students rinsing new hose in clear water before wearing</b>			
Yes		121	79.0
No		32	21.0
	Total	153	100.0
<b>Students using the following practices in washing hose that have been worn</b>			
After one wearing		156	76.0
After second or third wearing		17	8.0
After several pair have accumulated		17	8.0
When soiled		10	5.0
Regular wash time for silks		5	2.0
Other practices		1	1.0
	Total	206	100.0

Relatively few students reported the laundering of their hosiery in hot or cold water. Ninety-eight per cent used tepid water, and 93 per cent squeezed the water through the hose. Table 14 presents findings on laundry

procedure. Of the types of soap listed, 67 per cent was flake soap. Fifteen per cent of the students did not use soap in laundering their hosiery. The practice of rinsing hosiery once after laundering was followed by 36 per cent of persons reporting; 37 per cent rinsed twice. Twenty-three per cent rinsed their hose until the water was clear. Fifty-three per cent removed excess water before hanging to dry by pressing out moisture or slightly squeezing. Forty per cent removed excess moisture by pressing it out in a Turkish towel. Of the places used for drying silk hosiery, 32 per cent of the students indicated a towel rack, 19 per cent hung theirs over a coat rack, and 27 per cent stated their hose were dried in a warm room. A small percentage dried their hosiery out of doors.

The methods of repairing silk hosiery as signs of wear are evident determine to a large extent the lifetime of the hosiery. For snags, 41 per cent of the students mended the break with a thread, while 33 per cent used nail polish to prevent a run developing. Sixty-three per cent darned holes that appeared in their silk hosiery, and 34 per cent drew the hole together in repairing. When weak spots appeared, 76 per cent reenforced them with darning thread; 15 per cent discarded hose rather than repair them

Table 14. Laundry procedure used by 203 Kansas State College women in washing hosiery, stated in numbers and percentages.

		Number : Per cent	
Temperature of water used in laundering			
	Tepid	196	98.0
	Hot	2	1.0
	Cold	3	1.0
	Total	201	100.0
Method of handling used in laundering hose			
	Squeezing	189	93.0
	Hand rubbing	14	7.0
	Washing machine	0	0.0
	Total	203	100.0
Type of soap used			
	Cake	24	13.0
	Flake	123	67.0
	Liquid	3	2.0
	Detergent	5	3.0
	No soap	28	15.0
	Total	183	100.0
Number of times hose rinsed after washing			
	1	72	36.0
	2	74	37.0
	3	9	4.0
	Until rinse is clear	45	23.0
	Total	200	100.0

Table 14. (cont.).

	Number : Per cent	
Method used for removing excess water before hanging to dry		
Twisting	14	7.0
Putting through wringer	0	0.0
Pressing out moisture	104	53.0
Pressing out moisture in Turkish towel	79	40.0
Total	197	100.0
Places used for drying hose		
Outdoors in sun	4	2.0
Outdoors in shade	23	8.0
Near radiator	4	2.0
Warm room	72	27.0
Basement	20	7.0
Towel rack	85	32.0
Coat hanger	52	19.0
Others	9	3.0
Total	269	100.0

in this condition. Only 17 per cent wore hose mended by reknitting or "mend-a-run", as shown in Table 15.



Table 15. Methods commonly used by 203 Kansas State College women in repairing silk hose, stated in numbers and percentages.

		Number : Per cent	
Methods of caring for snags			
Use "run stop"	26	11.0	
Mend with thread	100	41.0	
Use nail polish	80	33.0	
Do nothing about it	35	15.0	
Total	241	100.0	
Method used to care for holes			
Use "run stop"	2	1.0	
Darn	138	63.0	
Draw hole together	73	34.0	
Discard hose	5	2.0	
Total	218	100.0	
Method of reenforcing weak spots			
Mend with darning thread	150	76.0	
Use "run stop"	3	1.0	
Draw hole together	15	8.0	
Discard hose	31	15.0	
Total	199	100.0	
Students wearing hose mended by reknitting or "mend-a-run"			
Yes	35	17.0	
No	165	83.0	
Total	200	100.0	

Various styles of shoes were worn by the students.

It was expected that medium and low heeled oxfords would

be most frequently worn. Table 16 indicates that 38 per cent of the shoes worn were medium heeled oxfords and 27 per cent low heeled oxfords. The 275 answers indicated that some students wear more than one style. In reply to the question concerning height of heel worn, only nine per cent of those reporting ordinarily wore high heels, while medium height heels were worn by 71 per cent, and low heels by 20 per cent. Eighty-nine per cent of the students were of the opinion that their shoes were snug fitting in the heel. This year unlined sport shoes have been popular on the market, but only 14 per cent of the students indicated that their sport shoes were unlined.

Table 16. Styles of shoes worn by 203 Kansas State College women, stated in numbers and percentages.

		Number : Per cent	
Style of shoes			
Pump		41	15.0
Low-heeled oxford		75	27.0
Medium-heeled oxford		102	38.0
Strap		18	6.0
Sandal		20	7.0
Tie		19	7.0
	Total	275	100.0
Height of heel ordinarily worn			
High		18	9.0
Medium		146	71.0
Low		42	20.0
	Total	206	100.0
Shoes snug filling at the heel			
Yes		177	89.0
No		23	11.0
	Total	200	100.0
Unlined sport shoes			
Yes		27	14.0
No		172	86.0
	Total	199	100.0

In order to learn where wear in hose appeared most often, students were questioned as to the location of first and second signs of wear in their silk hosiery (Table 17).

The first sign of wear, as indicated by 29 per cent, was a hole in the sheer part of the foot above the reenforcement. Another early indication of wear, but second in importance, was a snag, and later a run, reported by 26 per cent. When asked to indicate where the other signs of wear appeared, reports indicated that a hole in the heel, a hole in the toe, and snags were about equally troublesome.

Table 17. Early signs of wear in hosiery reported by 203 Kansas State College women, stated in numbers and percentages.

	First		Second	
	Number	Per cent	Number	Per cent
Runs at top	12	6.0	10	6.0
Runs in leg	18	9.0	25	15.0
Snag and later run.	56	26.0	30	17.0
Feet worn in sheer silk part	61	29.0	40	23.0
Foot worn in heel reenforcement part of high splice	27	12.0	30	17.0
Foot worn in toe reenforcement part	32	15.0	31	18.0
Seam ripped	6	3.0	4	2.0
Break at knee	0	0.0	1	0.5
Hole in ankle	0	0.0	1	0.5
Run in foot	0	0.0	1	0.5
Others	0	0.0	1	0.5
Total	212	100.0	174	100.0

## Practices of the Professional Group

Twenty-eight professional women answered questionnaires concerning their purchasing habits in selecting silk hosiery. Each woman that filled a questionnaire kept records of service received and care given two pairs of hose of the same size, brand, color, and weight. One pair was laundered in lux or ivory flakes before wearing and each time after wearing. The second pair was rinsed in clear water before wearing and each time after wearing. In cases of soil resulting from shoe polish or other foreign substances, the hose were washed with soap solution. It was due to local interest in these two methods of laundering hosiery that this group of professional women were asked to carry out the experiment.

After dyeing, many hosiery manufacturers treat hosiery with a finish that makes them water-repellent and spot-resistant. This is accomplished by impregnating the fabric with an insoluble aluminum soap, wax, or other waterproofing compound (16). The treatment helps to hold fibers together and thus reduces the catching on rough surfaces or "picking" of hosiery which may result in badly pulled threads or even "runs". It is claimed that a soap solution may

gradually remove the finish, while rinsing tends to restore elasticity lost in "boarding" without removing the finish. Those advocating the rinsing method contend that water will remove perspiration and loosen dust, and that the water repellent finish protects the fabric so that perspiration will not be absorbed.

Table 18. The frequency of purchase of brands of hosiery reported by 28 professional women, stated in numbers and percentages.

	Number : Per cent	
B & G	1	4.0
Real Silk	1	4.0
Gaymode	6	21.0
Gotham Gold Stripe	1	4.0
Kayser	1	4.0
Phoenix	9	31.0
Rollins	2	6.0
Style Step	1	4.0
Van Raalte	1	4.0
Ward's Hose	1	4.0
Archer	1	4.0
Lerners	1	4.0
Others	2	6.0

Prices paid for hosiery by the professional group ranged from \$0.70 to \$1.40, as shown in Table 19. Approximately one-third of the purchases were below \$1.00 while two-thirds were priced at \$1.00 or more. Table 8 compared with Table 19 regarding price range of student and of professional groups indicated that two-thirds of the col-

lege students purchased hosiery priced below \$1.00, while only one-third of the professional group purchased hosiery of a similar price range.

Table 19. Prices of hosiery purchased by 28 professional women, stated in numbers and percentages.

	Number purchasing	: Per cent
\$0.70 - \$0.79	8	28.0
0.80 - 0.89	1	4.0
0.90 - 0.99	-	-
1.00 - 1.10	18	64.0
1.11 - 1.20	-	-
1.21 - 1.30	-	-
1.31 - 1.40	1	4.0
Total	28	100.0

The number of hosiery purchases made locally and those made out of town are shown in Table 20. Manhattan merchants received 86 per cent of the hosiery business of faculty members and graduate students comprising this group. Only 14 per cent of this group reported that they bought hosiery elsewhere.

Table 20. Place where hosiery purchases were made by the professional women, stated in numbers and percentages.

	Number : Per cent	
Manhattan	24	86.0
Kansas City	1	3.0
Others	<u>3</u>	<u>11.0</u>
Total	28	100.0

Factors affecting purchase of hosiery by the professional group, as shown in Table 21, indicated that this group gave greatest consideration to wearing quality. Appearance, price, and weight were given almost equal consideration, and were the next most important factors influencing purchase. Each person indicated the three factors which most influenced their choice. Students registered more concern for both appearance and price (Fig. 2). Weight was of almost equal importance to both the student and professional groups. A small percentage of each group was influenced in making a purchase by advertising, length of hosiery, and reputation of the store.



Table 21. Factors affecting selection of hosiery as reported by 28 professional women, expressed in numbers and percentages.

	Number	Per cent
Advertising	2	2.0
Appearance	18	21.0
Brand	3	3.0
Gage number	0	0.0
Length	1	1.0
Opinion of salesgirl	0	0.0
Price	16	19.0
Reputation of the store	4	5.0
Serviceability	24	30.0
Weight	16	19.0
Total	84	100.0

Sheer and semi-service were the most popular weight hose with the 203 Kansas State College women questioned as to their choice of silk hosiery. With the professional group, sheer and semi-service hosiery retained their popularity, as evidenced by data presented in Table 22. Ninety-two per cent of the professional group purchased sheer and semi-service hosiery.

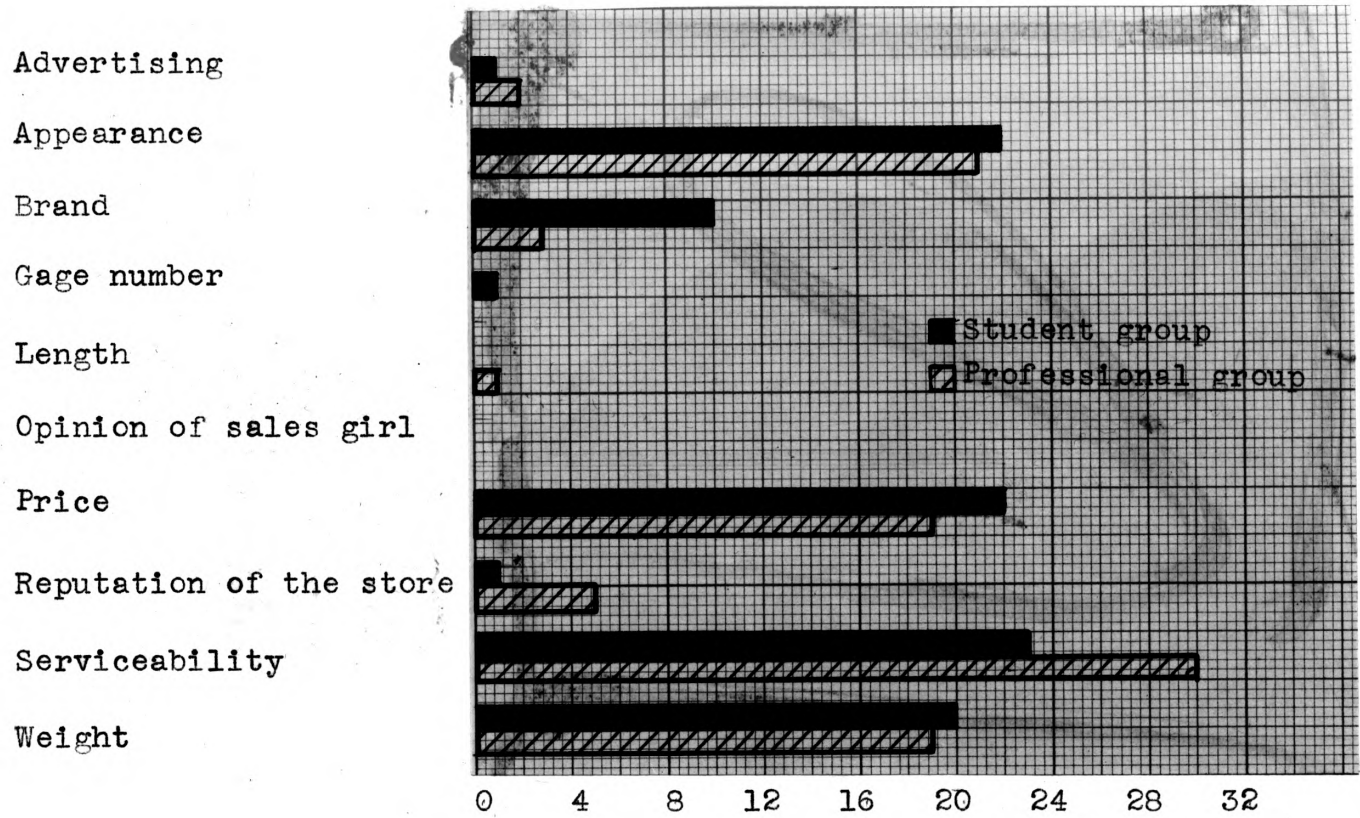


Fig. 2. Percentage comparisons of factors affecting purchase of silk hose by Kansas State College students and professional women.

Table 22. Weights of hosiery purchased by 28 professional women, expressed in numbers and percentages.

		Number : Per cent	
Weight of hose purchased last			
Sheer		16	57.0
Semi-service		10	35.0
Service		2	8.0
	Total	28	100.0

When questioned as to the occasions for which various weights of hosiery were worn, it was evident from Table 23 that 12 of the 16 women who purchased sheer hosiery selected that brand for all-purpose wear, and 4 wore sheer only for dress. Of the 10 that chose semi-service, 6 wore them for all-purpose and 4 for every day. The two professional women purchasing service wore them for all purposes.

Table 23. Extent to which occasion influenced choice of hosiery by 28 professional women, expressed in numbers and percentages.

Occasion:	Sheer		Semi-sheer		Service	
	Number	Per cent	Number	Per cent	Number	Per cent
All-purpose	12	43.0	6	21.0	0	0.0
Every day	0	0.0	4	14.0	0	0.0
Dress	4	14.0	0	0.0	2	8.0
Total	16	57.0	10	35.0	2	8.0

Sixty-eight per cent of this group indicated that they specified leg length in purchasing hosiery. Of the group that desired special lengths, 11 per cent found short most satisfactory. Longer than standard were desired by 32 per cent of the group. Of this percentage, 14 per cent required 32 inch length; 11 per cent, 34 inches; and 7 per cent, more than 34 inches. Schenke (16) states that because of the remarkable elasticity of silk knitted fabric that standard length will fit at least 75 per cent of customers. In this study of 28 professional women, medium length would meet the needs of only slightly over one-half of the group. There was no designation that outside hosiery was purchased by the professional group. The foot sizes required by this group were similar to those chosen by students. Sizes 9,  $9\frac{1}{2}$ , 10, and  $10\frac{1}{2}$  comprised 96 per cent of the demands, as shown in Table 24. Nine and one-half alone was the choice of 50 per cent of the professional group.

Table 24. Specifications for sizes and lengths of silk hosiery reported by 28 professional women, stated in numbers and percentages.

		Number : Per cent	
<b>Leg length bought</b>			
Short		3	11.0
Medium		7	25.0
Long			
32 inches		4	14.0
34 inches		3	11.0
Above 34 inches		2	7.0
Leg length not specified		9	32.0
	Total	28	100.0
<b>Those buying outside</b>			
Yes		0	0.0
No		28	100.0
	Total	28	100.0
<b>Size hose bought</b>			
9		4	14.0
9 $\frac{1}{2}$		14	50.0
10		6	21.0
10 $\frac{1}{2}$		3	11.0
11		1	4.0
	Total	28	100.0

In comparing the professional with the student group, it was noted that a very small percentage in both groups commonly wore unlined shoes as shown in Tables 16 and 25. Eighty-six per cent of the professional group said that their shoes were snug fitting at the heel. The student

group compared favorably with this group indicating that most buyers believe that they can be satisfactorily fitted. Ninety-six per cent of the professional group wore medium height heels, 4 per cent low heels, and none indicated that they wore high heels. A smaller percentage of the student group wore medium height heels than the professional group. The kind of shoe, type of workmanship, and fit of the shoe on the foot should bear a direct relationship with the amount of wear that can be expected from hosiery. Since most shoes were said to be satisfactory as to fit and few unlined shoes were reported, it is possible that serviceability of hosiery was not reduced markedly by shoes worn. Information was not secured in this study, however, to indicate the extent to which the shoe affected the life of silk hosiery.

Table 25. Characteristics of shoes worn by 28 professional women, stated in numbers and percentages.

		Number : Per cent	
Those commonly wearing unlined shoes			
Yes		2	7.0
No		26	93.0
	Total	28	100.0
Those having snug-fitting shoes at the heel			
Yes		24	86.0
No		4	14.0
	Total	28	100.0
Height of heel ordinarily worn			
High		0	0.0
Medium		27	96.0
Low		1	4.0
	Total	28	100.0

When questioned as to methods of fastening hose, 84 per cent indicated that they used girdle supporters. Only 7 per cent were accustomed to using flat garters, as shown in Table 26. Since girdle supporters were the only method employed by a large proportion of the women questioned, it cannot be stated which method gave the best service. Several that were wearing girdle supporters designated that they had received at an earlier date better wear from other methods of fastening their hosiery.

Table 26. Methods of fastening hosiery, reported by 28 professional women, expressed in numbers and percentages.

	Number: Per cent	
Methods of holding up hose		
Round garters	1	4.0
Flat garters	2	7.0
Girdle supporters	25	89.0
Belt supports	0	0.0
Twisted and rolled below knee	0	0.0
Total	28	100.0
Method giving the best wear		
Round garters	6	21.0
Flat garters	5	18.0
Girdle supporters	15	53.0
Belt supports	0	0.0
Twisted and rolled above knee	1	4.0
Twisted and rolled below knee	1	4.0
Total	28	100.0

#### Evaluation of Serviceability Records

Two-hundred fifty students agreed to wear one pair hose and keep an accurate check of the number of hours worn, number of times laundered, and care given during the lifetime of the hose. Less than 50 per cent of the



serviceability records were returned, however, the information secured from this group of 113 hose records supplied the data for the student tables and graphs. Twenty-eight of the 35 professional records were returned, reporting on the wear from two pairs of silk hosiery worn by the same individual. One pair of hose had been washed in soap before wearing and each time after wearing, a second pair had been rinsed in clear water before wearing, and each time after wearing. Records of Kansas State College students and the professional group have been compared in various ways and when possible trends indicated as to superior practices. Comparisons were made of the two laundering methods used by the professional group.

In several instances, similar information was obtained from questionnaires and from serviceability records. The questionnaires represented general practices while the hose records listed specific brand, price, and weight of hose purchases on which a serviceability record was kept. Findings for each type of information secured are given.

Brands of hosiery chosen by 113 Kansas State College students and 28 professional women, expressed in numbers and percentages, are presented in Table 27. Purchases of these two groups represented 46 brands. Of this list, 18

were chosen by more than one person. The most popular brand for both groups was Phoenix, 15 per cent of the students and 31 per cent of the professional group selecting it. Gaymode was the second most popular brand. Gaymode, Phoenix, and Berkshire ranked highest in order of preference by students answering the questionnaires. Among the professional women only two brands; namely, Phoenix and Gaymode, were worn by more than two persons in group.

The total number of 15-hour days that the student group wore 113 pairs of hose was 1,431 days, or an average of 12.6 15-hour days; the professional group wore 56 pairs 848 days, or an average of 15.1 15-hour days; the combined groups wore 169 pairs of hose a total of 2,279 days, or 13.4 15-hour days.

Students paid a total of \$99.14 for 113 pairs of hose or an average of \$0.88 per pair. The average cost per day for their hose was \$0.069. Total cost of 56 pairs for the professional group was \$53.70, or \$0.96 per pair and \$0.063 per day. The combined group paid \$152.84 for 169 pairs of hose. The average cost was \$0.90 per pair or \$0.067 per day, as shown in Table 28. Anders (1) reported \$0.92 as the average cost for 253 pairs of hose in her study.

Table 27. Hosiery brands worn by 113 Kansas State College students and 28 professional women for which records of service were kept, given in numbers and percentages.

Brands	:K. S. C. students		:Professional	
	:Number	: Per cent	:Number	:Per cent
B & G	5	4.0	1	4.0
B & G Kantrun	1	1.0	-	-
Real Silk	1	1.0	1	4.0
Belle Sharmeer	4	3.0	-	-
Berkshire	11	9.0	-	-
Gaymode	13	12.0	6	21.0
Gotham Gold Stripe	-	-	1	4.0
Kayser	5	4.0	1	4.0
Phoenix	17	15.0	9	31.0
Rollins	4	3.0	2	6.0
Sears	5	4.0	-	-
Style Step	-	-	1	4.0
Van Raalte	2	2.0	1	4.0
Ward's	10	9.0	1	4.0
Mojud	2	2.0	-	-
Archer	1	1.0	1	4.0
Larkwood	2	2.0	-	-
Lerner's	4	3.0	1	4.0
Others	26	24.0	2	6.0
Total	113	100.0	28	100.0

Table 28. Amount of wear and average cost of 169 pairs of silk hosiery as reported by Kansas State College students and professional women.

Group	:Number: :pairs	:Total :number: :15-hour: :days	:Average :number : :15-hour: :days	:Total :cost	:Aver- :age :cost	:Average :cost :per :day
K.S.C. student	113	1431	12.6	\$ 99.14	\$0.88	\$0.069
Profes- sional	56	848	15.1	53.70	0.96	0.063
Total	169	2279	13.4	152.84	0.90	0.067

Analysis of the amount of wear and average cost of 3- and 4-thread hosiery showed differences as indicated by data presented in Table 29. Kansas State College students, on the average, paid \$0.84 a pair for 3-thread hosiery and \$0.82 a pair for 4-thread, or about \$0.07 a day average for both weights. The professional group paid an average price of \$1.02 for 3-thread and \$0.95 for 4-thread, or \$0.088 a day for 3-thread and \$0.054 a day for 4-thread. For 70 pairs of 3-thread hose worn by both groups an average price of \$0.89 was paid or \$0.076 a day; for 72 pairs of 4-thread, an average of \$0.86 or \$0.063 a day.

Table 29. Amount of wear and average cost of 3- and 4-thread silk hosiery reported by Kansas State College students and professional women.

Weight	:Group	:Total		:Average		:Total	:Average	:Average
		:Number	:15-hour	:number	:15-hour			
		:pairs	:days	:days	:days	:cost	:pair	:day
3-thread	College students	48	554	11.4		\$40.08	\$0.84	\$0.071
	Professional women	22	255	11.5		22.56	1.02	0.088
	Combined groups	70	817	11.6		62.64	0.89	0.076
4-thread	College students	45	543	12.1		36.14	0.82	0.066
	Professional women	28	479	17.1		26.30	0.95	0.054
	Combined groups	72	977	13.5		62.24	0.86	0.063

A study of the data presented in Table 30 indicated the price range and number of pairs of 2-, 3-, 4-, 5-, 7-thread, and runproof hosiery purchased by 113 Kansas State College students and 28 professional women. The price of hosiery purchased by this group ranged from \$0.39 to \$1.50. It was found that hosiery priced in the \$0.70 to \$0.79 range was most popular among students, being purchased by 32 of the 113 students reporting. Hosiery selling for \$1.00 was second in popularity, being purchased by 24 students. Twenty-one pairs were purchased at \$0.59, and 15 pairs in the \$0.80 to \$0.89 range. In contrast with the student group, the professional women selected 32 of their 56 purchases in the \$1.00 to \$1.10 price range. The second most popular price was the choice of 10 women in the \$0.70 to \$0.79 price range. Fig. 2 compares the price range of 70 pairs of 3-thread and 74 pairs of 4-thread hosiery purchased by 144 Kansas State College students and professional women. Fig. 3 indicated that the same number of \$0.79 3- and 4-thread hosiery were purchased, but that more women paid \$1.00 for their hosiery than any other price. It was interesting to note that more women purchased 4-thread hose at \$0.59 than 3-thread. On the other hand, fewer women purchased

4-thread at \$1.00 than 3-thread. It is possible that those desiring sheerness in hosiery may find that it is possible to obtain both sheerness and clearness of construction only in the higher priced hose. Very few purchases of 3- and 4-thread hosiery were made above \$1.00. Anders (1) found that more hose were purchased at \$0.79 than any other price, and that hose priced at \$1.00 were second choice.

Table 30. Number of pairs of 2-, 3-, 4-, 5-, 7-thread, and runproof hosiery purchased by 113 Kansas State College students and 28 professional women in each price range.

Weight	Number		Price range
	Students	Professional	
2-thread	1	0	\$0.70 - \$0.79
	1	0	1.00 - 1.10
	2	0	1.10 - 1.20
	1	0	1.41 - 1.50
Total	5	0	
3-thread	1	0	- 0.39
	9	0	0.50 - 0.59
	1	0	0.60 - 0.69
	18	2	0.70 - 0.79
	2	0	0.80 - 0.89
	1	0	0.90 - 0.99
	13	16	1.00 - 1.10
	2	2	1.11 - 1.20
1	2	1.31 - 1.40	
Total	48	22	
4-thread	11	0	- 0.59
	2	0	0.60 - 0.69
	13	8	0.70 - 0.79
	9	2	0.80 - 0.89
	8	16	1.00 - 1.10
	1	2	1.11 - 1.20
	1	0	1.20 - 1.30
Total	45	28	
5-thread	4	0	0.60 - 0.69
	0	6	0.70 - 0.79
	2	0	1.00 - 1.10
Total	6	6	



Table 30. (cont.).

Weight	Number		Price range
	Students	Professional	
7-thread	1	0	\$0.00 - \$0.49
	1	0	0.00 - 0.59
	1	0	1.11 - 1.20
	1	0	1.21 - 1.31
Total	4	0	
Runproof	3	0	0.80 - 0.89
	1	0	0.90 - 0.99
	1	0	1.00 - 1.10
Total	5	0	

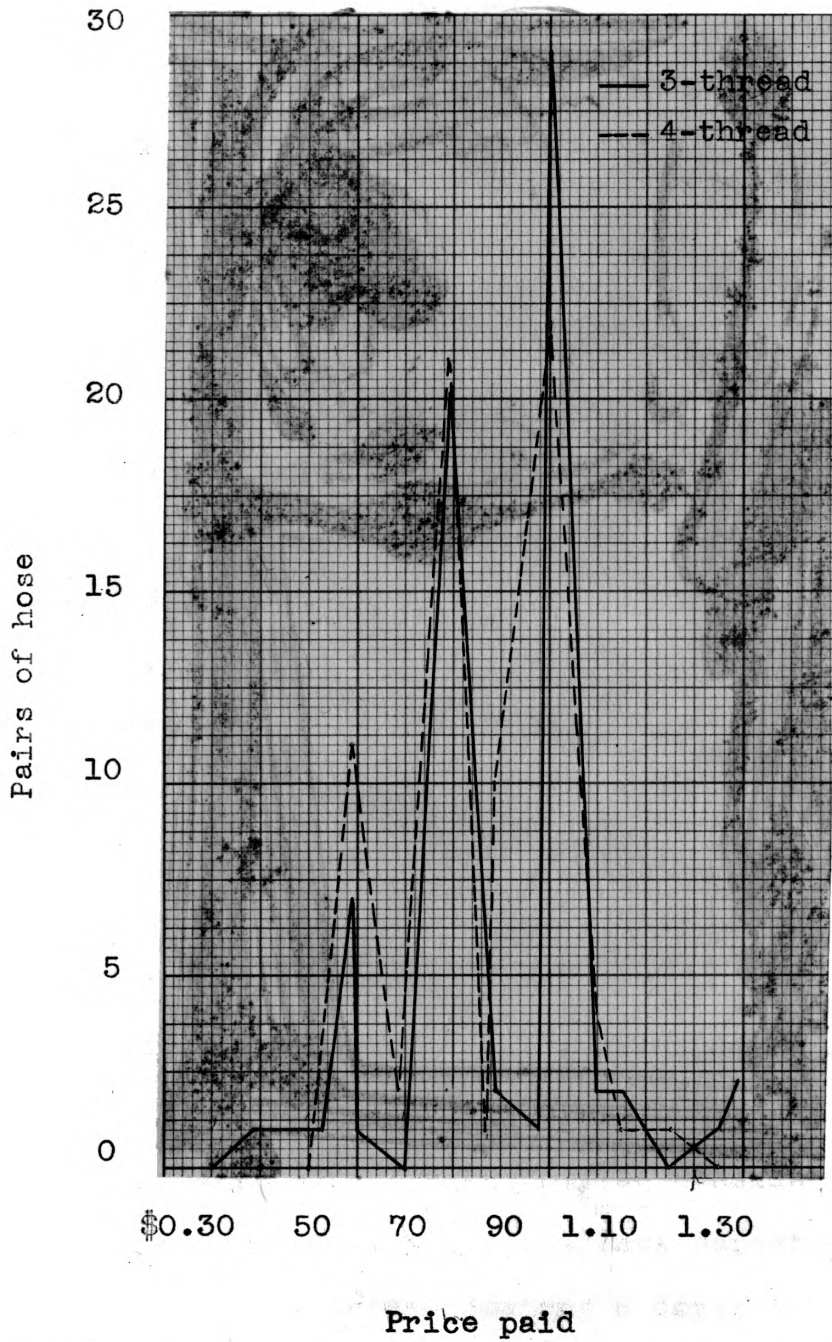


Fig. 3. Comparison of price range for 3-thread and 4-thread hosiery purchases of 143 Kansas State College students and professional women.

Estimated evaluation in terms of days of service received from various weights of hosiery are frequently made. For purposes of comparison, Table 31 and Fig. 4 were constructed to present the comparative number of 15-hour days' service received from the various weights of hose worn by Kansas State College students and professional women. Because this study has been limited in scope, the resulting material is submitted only as an indication of trend in wearing quality. For purposes of comparison, the most reliable results would necessitate an equal number of pairs of hosiery in all weights tested under controlled conditions.

The student group wore 2-, 3-, 4-, 5-, 7-thread and runproof hosiery; the professional reported only 3-, 4-, and 5-thread hosiery. The number of days of service are given on the basis of 15-hour days. It was found as the weight of hosiery increased from 2-thread to 7-thread that the number of 15-hour days of service received also increased. The 3-thread and 4-thread weights worn by 48 and 45 students, respectively, may be considered most reliable for comparisons. Five students reported that on an average they wore 2-thread hosiery 6 days; 48 students wore 3-thread on an average of 11.4 days; 45 students wore 4-thread on an average of 12.1 days; 7-thread and runproof

gave over 20 days of service. The professional group in each instance received more hours of service than students from their hosiery. They received 11.5 days wear from 3-thread; and 5 additional days wear, or 17.1 in all, from 4-thread. Professional women received 2.7 days of added wear from 5-thread hosiery. The increased wear may be due to better fitting shoes or to less activity on the part of the wearer.

Table 31. Relationship between weight and serviceability of silk hosiery, reported by 113 Kansas State College women and 28 professional women, expressed in hours and 15-hour days.

	Student group			Professional group		
	:Average: :Number: :pair	:Number: :hours :worn	:Average: :Number: :15-hour: :days	:Average: :Number: :pair	:Average: :Number: :hours :worn	:Average: :Number: :15-hour: :days
2-thread	5	91	6.0	-	-	-
3-thread	48	173	11.4	22	180	11.5
4-thread	45	181	12.1	28	255	17.1
5-thread	6	229	15.3	6	270	18.0
7-thread	4	312	21.2	-	-	-
Runproof	5	326	21.7	-	-	-

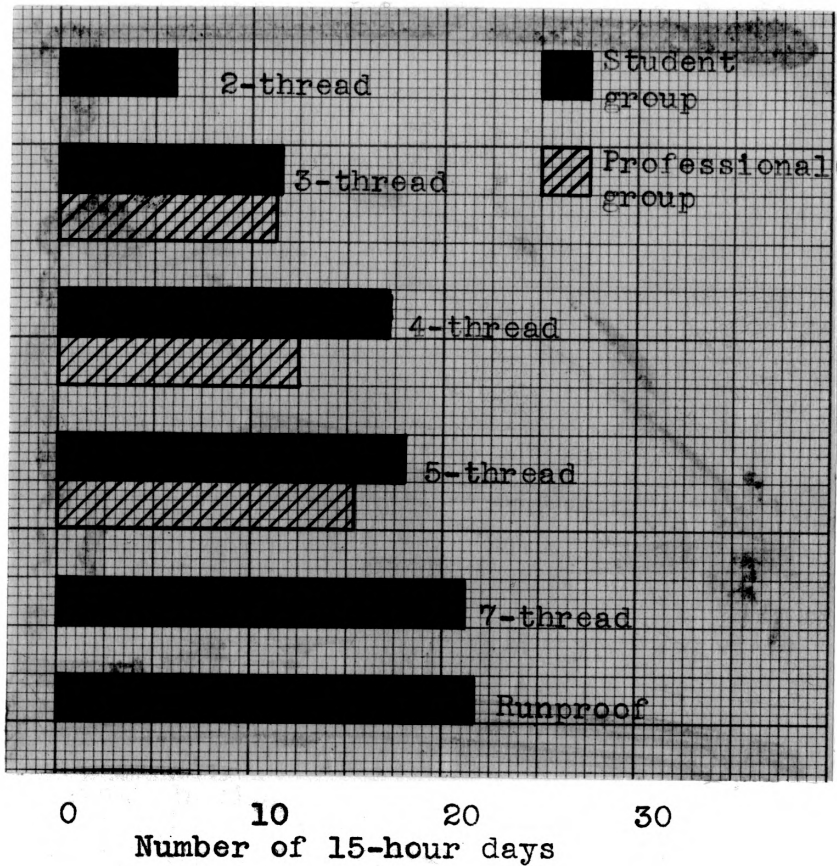


Fig. 4. Relationship between weight and serviceability in silk hosiery on 15-hour day basis as reported by Kansas State College students.

A study of the data for 3- and 4-thread hosiery in Table 32 revealed interesting facts concerning price and average number of hours worn. For ease in handling, those prices at which only one or two purchases were made were eliminated. Students buying 3-thread hose received most wear on the average from \$0.59 hosiery. Seven pairs of hose purchased for \$0.59 gave, on the average, 219 hours wear; 13 pairs priced at \$1.00 gave 185 hours service, and was the next best report on service. The professional group received the best wear from hosiery priced at \$1.00. The average for both professional and student group indicated that \$0.79 and \$1.00 hosiery gave about equal wear, but that \$0.59 gave the most hours of service.

The number of hours service received by Kansas State College students reporting on 4-thread was similar. One dollar 4-thread hosiery worn by students gave one day better service than \$0.59, and two days better service than \$0.79. The professional group purchasing 4-thread hosiery at \$1.00 received 129 more hours of service than those purchasing hosiery at \$0.79. The combined group for 4-thread hosiery indicated that hosiery priced at \$1.00 or above gave better service than that below \$1.00. For 3- and 4-thread hosiery, there seemed to be little relationship

Table 32. Service received from 3- and 4-thread hosiery purchased at different price ranges, reported by 113 Kansas State College students and 28 professional women, expressed in separate and combined groups.

Weight	Group	:Number pairs: :purchased	: Price : paid	:Average :hours worn
3-thread	College students	1	\$0.39	111
		1	0.50	146
		1	0.53	312
		7	0.59	219
		1	0.60	95
		18	0.79	161
		2	0.89	241
		1	0.98	80
		13	1.00	185
		2	1.15	98
	1	1.35	187	
	Professional women	2	0.79	279
		16	1.00	156
2		1.10	158	
2		1.39	257	
Combined groups	1	0.39	111	
	1	0.50	146	
	1	0.53	312	
	7	0.59	219	
	1	0.60	95	
	20	0.79	173	
	2	0.89	241	
	1	0.98	80	
	29	1.00	169	
	2	1.10	158	
	2	1.15	98	
	1	1.35	187	
2	1.39	257		

Table 32. (cont.).

Weight	Group	:Number pairs: :purchased	: Price : paid	:Average :hours worn
4-thread	College students	11	\$0.59	171
		2	0.69	176
		13	0.79	156
		1	0.87	100
		8	0.89	164
		6	1.00	188
		2	1.10	309
		1	1.15	321
		1	1.25	405
	Professional women	8	0.79	151
		2	0.89	358
		16	1.00	280
		2	1.10	395
	Combined groups	11	0.59	171
		2	0.69	176
		21	0.79	149
		1	0.87	100
		10	0.89	203
		22	1.00	255
4		1.10	253	
1		1.15	321	
1	1.25	405		



between quality and price. As regards physical testing of hosiery on the hosiery testing machine, the National Bureau of Standards (18) has stated that there is no relationship between stretch-endurability and price.

On the serviceability records of silk hosiery, the students and professional women were asked to check the day hose failure appeared and indicate the cause. A table was compiled for students, professional women, and the combined groups, indicating the total failures during the lifetime of the hose.

Table 33 and Fig. 5 indicated that for the students, a run in the leg was the cause of failure in hosiery more often than any other. A hole in the heel was the second most common failure reported by this group of 113 women. "Snags" and "feet worn in the sheer silk part" were checked an equal number of times and placed third in importance.

The professional women indicated that a run in the leg was the failure that appeared most frequently. With this group, the second most common failure was a hole in the toe. A close third was a hole in the heel.

The total number of failures appearing in the 169 pairs studied indicated a run in the leg as the failure that appeared 25 per cent of the time. A hole in the heel

came second comprising 17 per cent of total failures, and snags ranked third as 14 per cent of total failures.

Table 33. Total number of failures appearing in silk hosiery reported by 113 Kansas State College students and 56 professional women.

Failures	Number checked					
	Students		Professional		Combined groups	
	Num- :ber	Per cent	Num- :ber	Per cent	Num- :ber	Per cent
Run in leg	102	24.0	41	27.0	143	25.0
Hole in heel	78	18.0	21	14.0	99	17.0
Snag	59	14.0	18	12.0	77	14.0
Hole in toe	50	12.0	25	16.0	75	13.0
Feet worn - sheer silk part	59	14.0	8	5.0	67	12.0
Snag and later run	19	5.0	9	6.0	28	4.0
Run at top	14	3.0	8	5.0	22	4.0
Break at knee	9	2.0	7	5.0	16	3.0
Seam ripped	4	1.0	10	7.0	14	2.0
Run in foot	12	3.0	0	0.0	12	2.0
Hole in ankle	4	1.0	2	1.0	6	1.0
Tear	1	1.0	0	0.0	1	0.0
Others	8	2.0	2	1.0	10	3.0
Total	419	100.0	151	99.0	570	100.0

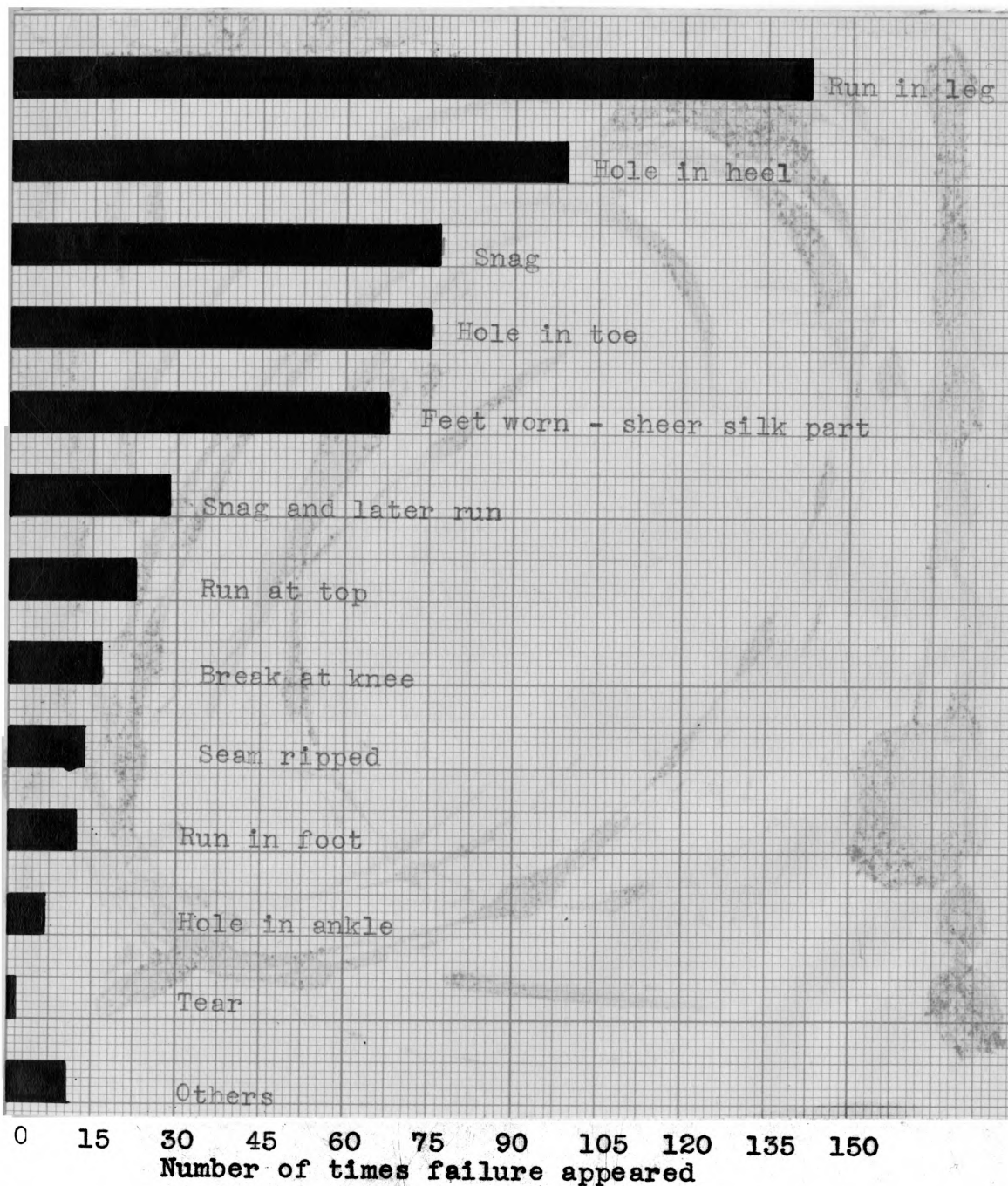


Fig. 5. Total number of failures appearing in 169 pairs of silk hosiery as reported by Kansas State College students and professional women.

Table 34 and Fig. 6 indicate the reasons for discarding hosiery by students, professional women, and the combined group. In several cases, the failure that appeared the greatest number of times was also the failure that caused discarding of the hose.

Of the 113 students, 71 or 59 per cent discarded their hose because of a run appearing in the leg. Fifteen additional pairs were discarded because of a snag and later a run. A hole in the heel accounted for 13 more pair becoming unfit for wear. Of the 56 pairs worn by the professional group, 35 or 60 per cent were retired from service due to runs in the leg. As in the student group, a snag, and later a run, accounted for the second largest number of failures.

For the combined student and professional group of 169 pairs, 59 per cent were discarded from use due to runs in the leg; 12 per cent snags and later runs; and 10 per cent holes in the heel. Fig. 6 indicated that "runs" are the greatest cause of failures with which this group had to contend.

Table 34. Final failure appearing in silk hosiery as reported by 113 Kansas State College students and 56 professional women.

Failures	Number checked					
	Students		Professional		Combined groups	
	Num-ber	Per cent	Num-ber	Per cent	Num-ber	Per cent
Run in leg	71	59.0	35	62.0	106	59.0
Snag and later run	15	12.0	6	10.0	21	12.0
Hole in heel	13	11.0	5	9.0	18	10.0
Feet worn - sheer silk part	8	7.0	3	5.0	11	6.0
Run at top	3	3.0	2	3.0	5	3.0
Break at knee	3	3.0	2	3.0	5	3.0
Hole in toe	2	1.0	2	3.0	4	2.0
Snag	1	0.5	3	5.0	4	2.0
Run in foot	2	1.0	0	0.0	2	1.0
Hole in ankle	1	0.5	0	0.0	1	1.0
Others	2	1.0	0	0.0	2	1.0
<b>Total</b>	<b>121</b>	<b>100.0</b>	<b>58</b>	<b>100.0</b>	<b>179</b>	<b>100.0</b>

The average number of times that Kansas State College students and professional women wore and laundered 169 pairs of hosiery was counted from the serviceability records. Kansas State College students wore their hose on an average of 17.1 times. For these 17.1 wearings, they laundered their hosiery 15 times or 88 per cent of the times worn. The professional group laundered their hosiery 100 per cent of the times worn. The total number of 169

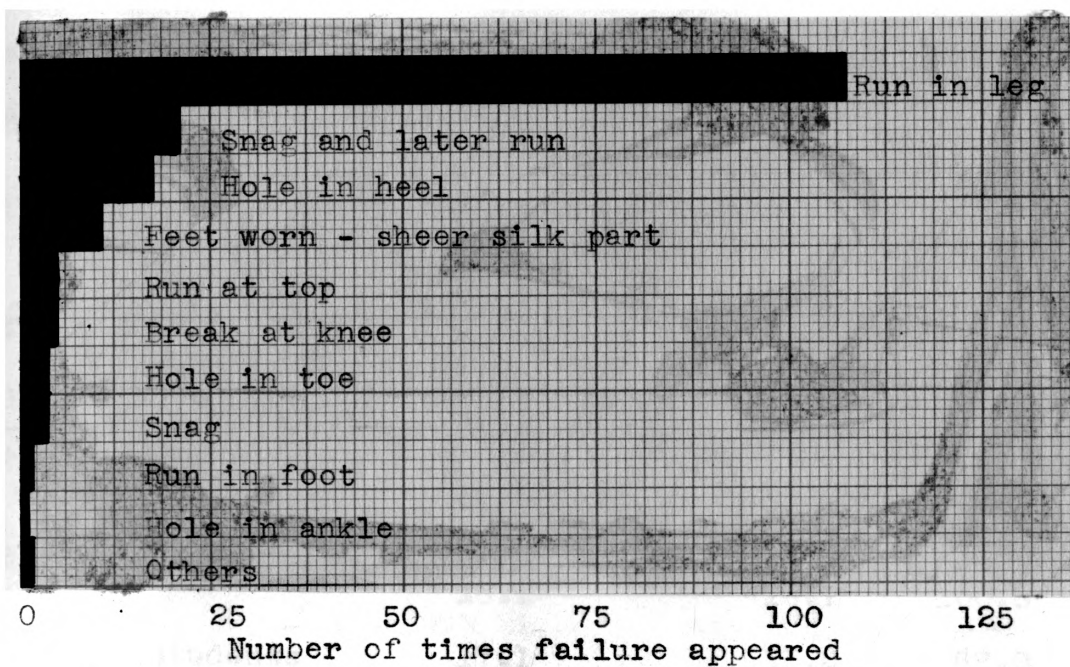


Fig. 6. Analysis of final hose failure appearing in 169 pairs of silk hosiery, reported by Kansas State College students and professional women.

pairs of hose were worn on the average 17 times per pair. The average number of launderings was 15.6 for each pair. On the basis of the data presented, it may be concluded that the practice of washing hose following wearing was almost universal. It was interesting to compare this figure with the one obtained by Anders (1). She found an average of 16.9 wearings for 253 pairs of hose, the average number of laundering was 15.6 for each pair.

Table 35. Average number of times Kansas State College students and professional women wore and laundered their hosiery.

Group	Average times: worn	Average times: :laundered	: Per cent
Professional washed	17.2	17.2	100.0
Professional rinsed	16.1	16.1	100.0
College students	17.1	15.0	88.0
Total	17.0	15.6	92.0

Data as to the total number of failures appearing in hosiery worn by professional women when washed with soap and without soap are shown in Table 36 and Fig. 7. Some

advocates of the rinsing method contend that less of the protective finish will be removed by washing in clear water than washing with soap. According to the National Association of Hosiery Manufacturers, the finish used is an insoluble aluminum soap, wax, or other water-proofing compound (16). It was not stated whether this compound was insoluble in water, in water and soap, or in either of these. No indication was noted as to whether a water-repellent finish had been used on hosiery reported in this study. It is probable that a large percentage of wearers do not know if they are buying hose with a spot-proof or water-repellent finish.

Advocates of the theory that rinsing is sufficient to cleanse hosiery contend that water will remove perspiration and loosen dust from hosiery and leave the "finish" intact. They further contend that if the finish prevents water spotting, it will also prevent the absorption of perspiration. However, if the perspiration is held in contact with the silk by body oils, it would not be possible to remove a "perspiration-oil" mixture with clear water. The oil would necessarily need to be dissolved first in a soap solution. One authority claims that the water-repellent finish that is added to silk hosiery if properly washed will

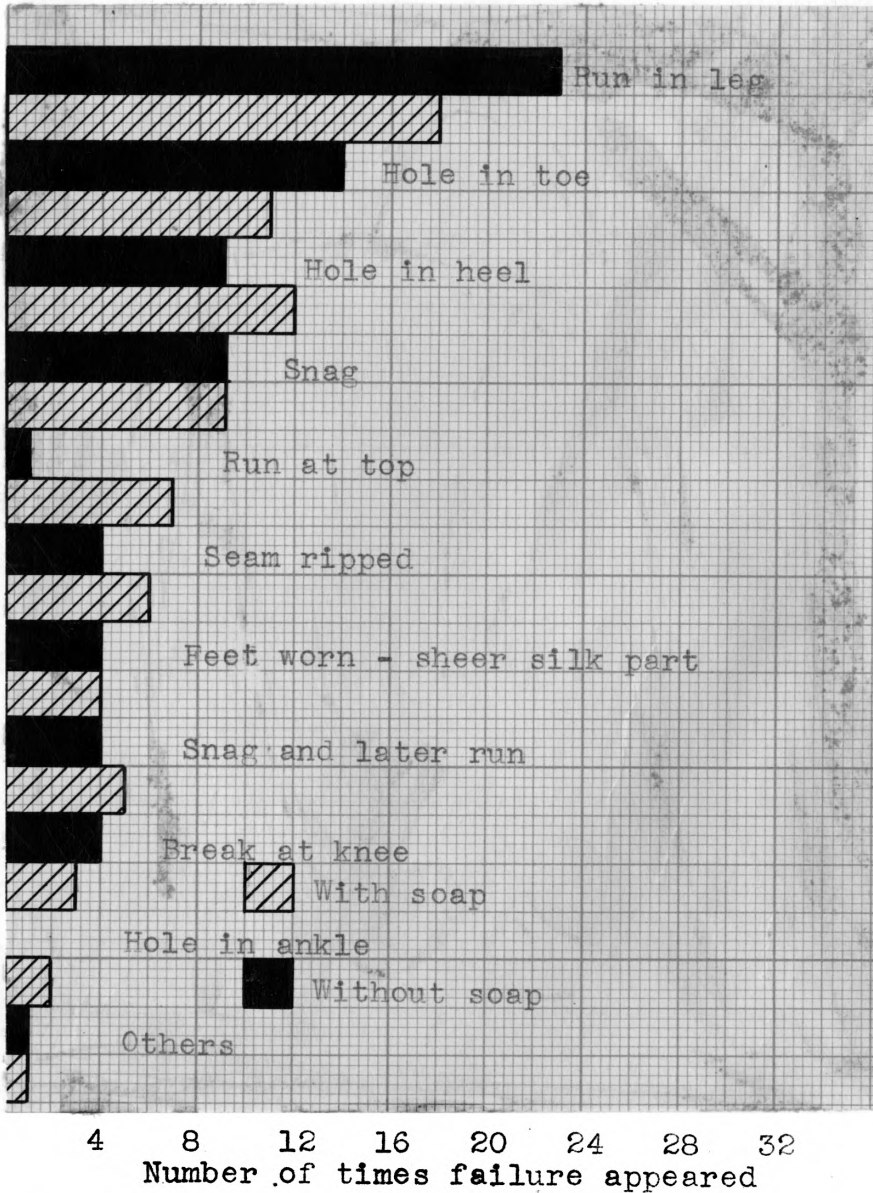


not be removed (11). This author does not define proper washing. The National Association of Hosiery Manufacturers (16) states that in laundering hosiery, the three factors to be especially regarded are the quality of the soap, the temperature of the water, and the method of manipulation. The National Bureau of Standards (17) in testing hosiery used a 0.5 per cent solution of a "neutral" quality olive oil soap, rinsing three times.

It is especially desirable that perspiration be removed, because silk fabrics saturated with perspiration are tendered (4). Sodium chloride, which is always present in perspiration, is the principal cause of the tendering of silk. There is not the slightest doubt according to the above authority that a very dilute solution of sodium chloride dried on silk causes gradual disintegration. In this study, it was found that the range of failures were similar for hose laundered by the two methods. The total number of failures indicated but five less for those laundered without soap. Apparently little advantage can be shown, from these data, for one or the other type of laundering.

Table 36. Comparison of total number of indications of failure recorded for 28 pairs of hose laundered with soap and 28 pairs of the same brand without soap.

Failures	:Laundered, soap:		:Laundered, no soap:	
	:Times failure :appeared	:Per cent:	:Times failure :appeared	:Per :cent
Run in leg	18	23.0	23	32.0
Hole in toe	11	14.0	14	19.0
Hole in heel	12	15.0	9	12.0
Snag	9	12.0	9	12.0
Run at top	7	9.0	1	1.0
Seam ripped	6	8.0	4	5.5
Feet worn - sheer silk part	4	5.0	4	5.5
Snag and later run	5	6.0	4	5.5
Break at knee	3	4.0	4	5.5
Hole in ankle	2	3.0	0	0.0
Others	1	1.0	1	1.0
<b>Total</b>	<b>78</b>	<b>100.0</b>	<b>73</b>	<b>99.0</b>



**Fig. 7. Analysis of all failures recorded for 28 pairs of hose laundered with soap and 28 pairs of the same brand without soap.**

A mean of 445 hours wear was indicated when hose were washed with a soap solution, as shown in Table 37 and Fig. 8. Four hundred and ten hours were the average number of service hours received from rinsed hosiery. It would seem, according to the data secured, that slightly longer service could be expected by following the method of washing hose in soap solution. Since this study has been limited, it would be advisable that additional investigation be made to determine definitely the effect of different laundering methods on service qualities of hosiery.

Table 37. Number of hours 28 professional women wore hose laundered with and without soap.

Group	:Number pair	:Average hours
Laundered with soap	28	445
Laundered without soap	28	410

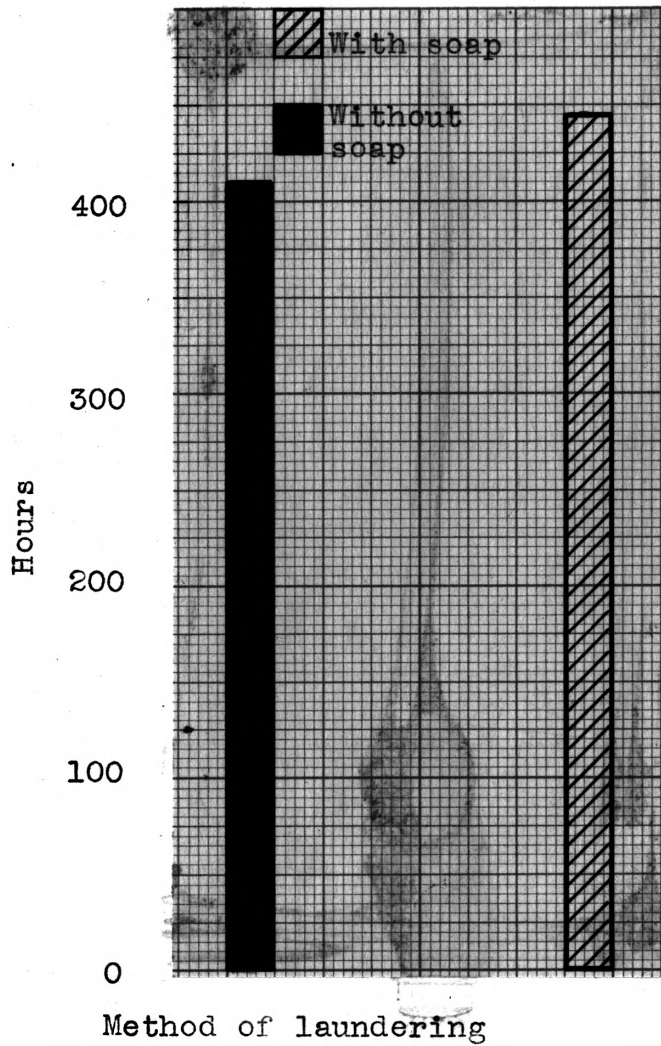


Fig. 8. Comparison of number of hours 28 professional women wore their hose laundered with and without soap.

## SUMMARY

Serviceability was the most important factor affecting the purchase of hose. It was checked by 22 per cent of the student group and 30 per cent of the professional group as their first consideration in the choice of silk hosiery. Appearance, price, and weight were of almost equal concern to the two groups and were next in importance.

The hose worn by college students represented 53 brands. The purchase of two pairs of hose of the same brand, color, and weight was considered a wise practice by a majority. Thirty-inch or standard length hosiery was most satisfactory to 61 per cent of the students. Seven per cent desired shorter hose; 32 per cent, longer than standard. Ninety-four per cent chose sizes 9, 9 $\frac{1}{2}$ , 10, and 10 $\frac{1}{2}$ .

Almost two-thirds of the student group purchased hosiery priced at less than \$1.00. In contrast, two-thirds of the purchases of the professional group were \$1.00 to \$1.40.

The mean cost of 169 pairs of hosiery was \$0.90 per pair. The average price paid by students was \$0.88; by the professional group, \$0.96. The prices ranged from

\$0.39 to \$1.50. More hose were bought by the entire group at \$1.00 than any other price, the total number being 56; the second most popular price was \$0.79, 48 buying at that price. Hose bought at \$0.79 were most commonly purchased by students, while the professional group most frequently purchased \$1.00 hosiery.

The average cost per day of hosiery worn by a group of 169 women was about \$0.067. It was found that the cost of wearing 3-thread hosiery was 1.3 cent more per day than 4-thread. Three-thread hosiery cost \$0.076 a day and 4-thread, \$0.063.

From one-half to three-fourths of the students indicated that they attempted to extend the lifetime of their hosiery by repairing worn spots.

The number of hours of wear was transposed into "days-of-wear", using a 15-hour day as the basis. The 48 students wearing 3-thread hose received 11.4 days of wear; 22 professional women wore their 3-thread hose 11.5 days. Forty-five students who wore 4-thread hose received 12.1 days wear; the 28 professional women, 17.1 days. Six of each group wore 5-thread hose; the student group received an average of 15.3 days wear, the professional group 18 days. On the whole, the combined groups wore 169 pairs of hosiery an average of 13.4 days.

The total number of 169 pairs of hose were worn on the average 17 times per pair. The average number of launderings was 15.6 for each pair.

A study of the hosiery worn showed 4-thread as the most popular weight, it being chosen by 73 of the 169 students and professional women. Three-thread weight was worn by 69 students and professional women.

Four-thread hosiery priced at \$1.00 or above gave better service than that below \$1.00 for the entire group reporting. Students received about the same amount of service from the various prices of hosiery. The professional group received the greatest service from \$1.00 hosiery; however, hose at this price or above were most often worn by the professional group.

Three-thread hose at \$0.59 gave more hours of service than those selling for \$1.00 for the entire group. The student group received the best wear from \$0.59 hosiery, while the professional group received best service from \$1.00 hosiery. Again, the professional group more often purchased hose at \$1.00 or above. The indication was a lack of relationship between the price and number of hours of service that could be expected.

An analysis of the failures which caused the discard-



ing of hosiery indicated that a run in the leg was the primary reason for retiring hosiery from service. A run in the leg was checked most frequently by both the students and the professional group as giving difficulty during the lifetime of silk hosiery. A hole in the heel was checked as the second most frequent indication of wear, and snags ranked third.

The limited amount of material regarding serviceability as affected by methods of laundering indicated a mean of 445 hours wear when hose were washed with a soap solution and rinsed, and 410 hours when hose were washed only in clear water.

#### RECOMMENDATIONS

1. It would seem advisable for students to place more emphasis on care of hosiery. The professional group received more hours of wear with a definite schedule for laundering than did students who were less regular in their practices.

2. Since price seems to bear little relationship to the service received from hose, those interested in economy should investigate the service to be obtained from those brands in the lower price range.

3. Since 5- and 7-thread hose gave 3.9 and 9.8 more days wear, respectively, than 3-thread hose, it would seem that they were better suited for heavy duty.

4. The regular washing of hose in a soap solution seems to assure a little longer service. However, additional investigation is needed to determine the effect of methods of laundering on the service qualities of hosiery.

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**APPENDIX**

FORM I

01. The first section of the report  
 02. The second section of the report  
 03. The third section of the report  
 04. The fourth section of the report  
 05. The fifth section of the report  
 06. The sixth section of the report  
 07. The seventh section of the report  
 08. The eighth section of the report  
 09. The ninth section of the report  
 10. The tenth section of the report

## The Hose You Buy and Wear

1. Indicate from among the following the three most important factors which affect your purchase of hose (as 1st, 2nd, 3rd)
- ( ) Advertising
  - ( ) Appearance
  - ( ) Brand
  - ( ) Gauge number
  - ( ) Opinion of salesgirl
  - ( ) Price
  - ( ) Reputation of store
  - ( ) Serviceability
  - ( ) Thread number

2. Draw one line under brand of hose last purchased: two lines under brand purchased previous to that:

Admiration	Marcheta
As You Like It (Berkshire Mills)	Mello-Glow
B & G	Merville
Real Silk	Modern Maid
Belle Sharmer	Munsing Hose
Berkshire	Peacock
Best Made	Phoenix
Better Sox	Rollins
Franchette	Sear's Hose
Gaymode-F. C. Penny	Strutwear
Gotham Gold Stripe	Style Step (Best Made Mill)
Gotham Onyx	Van Raalte
Hummingbird	Ward's Hose
Kantrum-Berkshire	Wilknit
Kayser	_____ Others not listed
LaFrance	

3. Underline the number of pairs of hose of the same color and weight which you buy at one time: 1, 2, 3, 4, 5, 6.
4. Judging from your experience, do you think it is economy to buy two or more pairs alike? Yes \_\_\_\_\_ No \_\_\_\_\_.
5. Underline the weight of hose you purchased last: chiffon, semi-chiffon, semi-service, heavy service.
6. Underline the thread number of the hose you purchased last: 2 thread, 3 thread, 4 thread, 5 thread, 6-7 thread, 8-9-10 thread.
7. Do you buy chiffon hose for dress occasions? Yes \_\_\_\_\_ No \_\_\_\_\_.
8. Do you buy service for everyday wear? Yes \_\_\_\_\_ No \_\_\_\_\_.
9. Do you buy semi-service for everyday wear? Yes \_\_\_\_\_ No \_\_\_\_\_.
10. Do you wear the same weight for all purposes? Yes \_\_\_\_\_ No \_\_\_\_\_.
11. Do you ask for a specific leg length when you purchase hose? Yes \_\_\_\_\_ No \_\_\_\_\_.
12. If so, underline the leg length you buy: short, medium, long. 28 inches, 30 inches, 32 inches, 34 inches, more than 34 inches.
13. Do you buy outside? Yes \_\_\_\_\_ No \_\_\_\_\_.
14. Underline the size hose you buy: 8, 8½, 9, 9½, 10, 10½, 11.
15. Do you consider gauge in purchasing hose? Yes \_\_\_\_\_ No \_\_\_\_\_.
16. Underline the gauge hose you buy: 54, 51, 48, 45, 42, do not list
17. Underline the price you paid for your last pair of hose.
- |          |             |
|----------|-------------|
| \$0.49   | \$1.00-1.10 |
| 0.59     | 1.11-1.20   |
| 0.60-.69 | 1.21-1.30   |
| 0.70-.79 | 1.31-1.40   |
| 0.80-.89 | 1.41-1.50   |
| 0.90-.99 | 1.51-1.75   |
|          | 1.76-2.00   |
|          | 2.00-2.50   |



- 2-
18. Indicate by underlining, if you have in the last three years purchased any of the following types of hosiery: lace, mesh, non-run.
  19. Have found lace, mesh or non-run hose satisfactory? Yes \_\_\_  
No \_\_\_.
  20. Do you buy "irregulars" or "seconds"? Yes \_\_\_ No \_\_\_.
  21. Have you found "irregulars" or "seconds" satisfactory? Yes \_\_\_  
No \_\_\_.
  22. Do you buy "menders" or "thirds"? Yes \_\_\_ No \_\_\_.
  23. Have you found "menders" or "thirds" satisfactory? Yes \_\_\_  
No \_\_\_.
  24. Would you buy hose if you knew they had been redyed at the factory? Yes \_\_\_ No \_\_\_.
  25. Do you buy elastic top or knee length silk hose? Yes \_\_\_ No \_\_\_.
  26. If so, how "knee length" hose been satisfactory? Yes \_\_\_ No \_\_\_.
  27. If elastic top or "knee length" hose have not been satisfactory indicate by underlining the reason:  
Run more easily  
Too short in leg  
Too long in leg  
\_\_\_\_\_
  28. Indicate by underlining the method you use to hold up or fasten hose:  
Round garters                      Twisted and rolled above knee  
Flat garters                        Twisted and rolled below knee  
Girdle supporters                Other practices \_\_\_\_\_  
Belt supporters
  29. Do you choose your own hose. Yes \_\_\_ No \_\_\_.
  30. Does some one else usually buy your hose for you? Yes \_\_\_  
No \_\_\_.
  31. Do you select from a local store? Yes \_\_\_ No \_\_\_.
  32. Do you purchase by mail? Yes \_\_\_ No \_\_\_.
  33. Do you purchase from representative that calls at your house?  
Yes \_\_\_ No \_\_\_.
  34. Do you purchase hose one-half inch longer than foot? Yes \_\_\_  
No \_\_\_.
  35. Check the statement which best describes to you the meaning of "full fashioned":  
( ) Any stocking with a seam down the back.  
( ) Stocking knitted in a flat piece and shaped to fit. the leg by dropping stitches on the needle bar forming fashion points.  
( ) Circular knit  
( ) Stocking with fashion points placed back of the calf and back of the knee along the seam, but no stitches dropped.

Answer 36 or 37

36. Do you wash new hose in a suds and rinse before wearing?  
Yes \_\_\_ No \_\_\_.
37. Do you rinse new hose in clear water before wearing?  
Yes \_\_\_ No \_\_\_.

Answer 38 or 39

38. Indicate by underlining the practices you commonly follow regarding the washing of hose that have been worn:  
After one wearing  
After second or third wearing  
After several pairs have accumulated  
When soiled  
Regular wash time for silks.  
Other practices \_\_\_\_\_

39. Indicate by underlining the practices you commonly follow regarding the rinsing of hose that have been worn:  
After one wearing  
After second or third wearing  
After several pairs have accumulated.  
Other practices \_\_\_\_\_
40. Underline the temperature of the water used in laundering your hose: tepid, hot, cold.
41. Underline the method of handling used in laundering your hose: squeezing, hand rubbing, washing machine.
42. Underline type of soap used: cake, flake, liquid, detergent, no soap.
43. Underline the number of times you rinse your hose after washing: 1, 2, 3, more, until rinse water is clear.
44. Underline the method you use for removing excess water from hose before hanging to dry: squeezing, twisting, putting through wringer, pressing out moisture in Turkish towel.
45. Underline the place you use for drying your hose: outdoors in sun, outdoors in shade, near radiator, warm room, basement, towel rack, on coat hanger, others \_\_\_\_\_.
46. Indicate by underlining how you care for snags: use "run stop", mend with thread, use nail polish, do nothing about it.
47. Indicate by underlining the method you commonly use to care for holes in high solice or toe: use "run stop", darn, draw hole together, discard hose.
48. Indicate by underlining the method you commonly use to re-enforce weak spots in the foot of hose: mend with darning thread, use "run stop", draw the hole together, do nothing.
49. What length and width shoes do you buy?
50. Indicate by underlining the style of shoes you generally wear: pump, low heeled oxford, medium heeled oxford, strap, saddle, tie.
51. Indicate by underlining the height of heel you ordinarily wear: high, medium, low.
52. Do you commonly wear unlined sport shoes? Yes \_\_\_ No \_\_\_
53. Are your shoes snug-fitting at the heel? Yes \_\_\_ No \_\_\_.
54. Draw one line under place where worn spot first appeared in your last hose, and two lines under place where worn spot appeared second in same hose:  
Runs at top  
Runs in leg  
Snag and later run  
Feet worn in sheer silk part  
Feet worn in heel reenforcement part of high solice  
Seam ripped  
Others \_\_\_\_\_
55. In the last year have you had hose mended by reknitting or "mend-a-run"? Yes \_\_\_ No \_\_\_.
56. If so, did you consider it economical? Yes \_\_\_ No \_\_\_.
57. Indicate by underlining the method you use in disposing of old hose: give them away, used in making rugs, destroyed.

Distated and rolled below  
Distated and rolled above

Distated and rolled below  
Distated and rolled above

- 19. Indicate by underlining the method you use to hold no of \_\_\_\_\_ No \_\_\_\_\_ Yes \_\_\_\_\_
- 20. What length and width space do you wear? \_\_\_\_\_ No \_\_\_\_\_ Yes \_\_\_\_\_
- 21. Do you commonly wear unlined shoes? Yes \_\_\_\_\_ No \_\_\_\_\_
- 22. Indicate by underlining the method of heel you ordinarily wear: \_\_\_\_\_ No \_\_\_\_\_ Yes \_\_\_\_\_
- 23. Are your shoes single-heeling at the heel? Yes \_\_\_\_\_ No \_\_\_\_\_
- 24. Do you ordinarily wear one-heel in shoes that you foot \_\_\_\_\_ No \_\_\_\_\_ Yes \_\_\_\_\_
- 25. Indicate by underlining the approximate distance you walk in \_\_\_\_\_ No \_\_\_\_\_ Yes \_\_\_\_\_
- 26. Underline the size nose you use: 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000
- 27. Do you wear any of the following? \_\_\_\_\_ No \_\_\_\_\_ Yes \_\_\_\_\_
- 28. Do you wear the same weight for all \_\_\_\_\_ No \_\_\_\_\_ Yes \_\_\_\_\_

Form II

RECORD OF SERVICEABILITY OF  
ONE PAIR SILK HOSE

Name of Wearer \_\_\_\_\_

Date of Purchase \_\_\_\_\_

Brand of Hose \_\_\_\_\_

Thread Number . \_\_\_\_\_

Where Purchased \_\_\_\_\_ Cost \_\_\_\_\_

Laundered before wearing? Yes \_\_\_\_\_ No \_\_\_\_\_

Wearing Record per Day

Wearings		Laundry	Hose Failure			
Number of wearings	Each day Number of hours	One check each day laundered	Check day hose failure appeared	What was the failure?	How mended	Check day discarded
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						

Form III

To the wearers of silk hose:

Hose are to be laundered before wearing and immediately after each wearing according to the following directions.

Wash hose in a suds of neutral soap\* and luke-warm water. Gently squeeze the suds through them and rinse thoroughly in warm water until no trace of soap appears. Avoid rubbing and wringing. Squeeze out the excess water and hang them over a smooth rod to dry. Avoid drying them on radiators or rough rods and hang them away from direct heat.

\*Lux or Ivory Flakes

Form IV

To the wearers of silk hose:

Hose are to be rinsed before wearing and immediately after each wearing according to the following directions:

Squeeze hose through two or more rinses of clear luke-warm water. In case soil such as shoe polish or cleaner or grease must be removed, follow directions given in Form III. Dry hose over a smooth rod, away from direct heat or sunlight.

Facts Concerning the Purchase and Use  
of Known Brands of Silk Hose

Name of Wearer \_\_\_\_\_ Occupation \_\_\_\_\_

Date of Purchase \_\_\_\_\_ Cost \_\_\_\_\_

Brand of Hose \_\_\_\_\_ Where Purchased \_\_\_\_\_

1. Indicate from among the following the three most important factors which affect your purchase of hose (as 1st, 2nd, 3rd):
  - ( ) Advertising
  - ( ) Appearance
  - ( ) Brand
  - ( ) Gauge number
  - ( ) Opinion of salesgirl
  - ( ) Price
  - ( ) Reputation of the store
  - ( ) Serviceability
  - ( ) Thread number
2. Draw one line under the weight of hose you purchased: chiffon, semi-chiffon, service, heavy service, 2 thread, 3 thread, 4 thread, 5 thread, 6-7 thread, 8-9-10 thread.
3. Do you wear the hose checked above for dress occasions?  
Yes \_\_\_\_\_ No \_\_\_\_\_.
4. Do you wear the hose checked above for every day occasions?  
Yes \_\_\_\_\_ No \_\_\_\_\_.
5. Do you wear the same weight for all purposes? Yes \_\_\_\_\_ No \_\_\_\_\_.
6. Do you ask for a specific leg length when you purchase hose?  
Yes \_\_\_\_\_ No \_\_\_\_\_.
7. If so, underline the leg length you buy: short, medium, long, 28 inches, 30 inches, 32 inches, 34 inches, more than 34 inches.
8. Do you buy outside? Yes \_\_\_\_\_ No \_\_\_\_\_.
9. Underline the size hose you buy: 8, 8½, 9, 9½, 10, 10½, 11.
10. Indicate by underlining the approximate distance you walk in one day; six blocks, one mile, two miles, three miles, four miles, \_\_\_\_\_.
11. Do you purchase hose one-half inch longer than your foot?  
Yes \_\_\_\_\_ No \_\_\_\_\_.
12. Are your shoes snug-fitting at the heel? Yes \_\_\_\_\_ No \_\_\_\_\_.
13. Indicate by underlining the height of heel you ordinarily wear: high, medium, low.
14. Do you commonly wear unlined shoes? Yes \_\_\_\_\_ No \_\_\_\_\_.
15. What length and width shoes do you wear? \_\_\_\_\_
16. Indicate by underlining the method you use to hold up or fasten your hose:
 

Round garters	Twisted and rolled above
Flat garters	knee
Girdle supporters	Twisted and rolled below
Belt supports	knee
	Other practices _____
17. Indicate by underlining which method has given you the best wear from the hose:
 

Round garters	Twisted and rolled above
Flat garters	knee
Girdle supporters	Twisted and rolled below
Belt supports	knee
	Other practices _____