

Occupations

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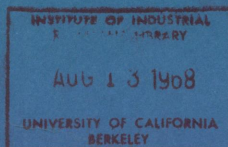
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CURRENT OCCUPATION AND PAST TRAINING OF ADULT WORKERS

Office of Statistical Standards  
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## PREFACE

This report was prepared by Ann R. Miller, University of Pennsylvania, as consultant to the Bureau of the Budget. It was undertaken as an outgrowth of certain aspects of the work of the Interagency Committee on Occupational Classification, a committee which functions under the auspices of the Office of Statistical Standards of the Bureau of the Budget and is composed of representatives of a number of Federal agencies concerned with the collection and use of occupational data. Among the Committee's objectives is that of exploring the possibilities of developing data on the relationship between training and occupation with a view to improving the bases of occupational supply projections and, in general, adding to our knowledge of the ways in which a given occupational structure has evolved.

The basic data on which the report is based were collected by the Bureau of the Census as a supplement to the April 1963 Current Population Survey. The Manpower Administration, U. S. Department of Labor, which sponsored the original study, also arranged to have the special tabulations prepared which were required for this report.

The Office of Statistical Standards is pleased to make available this report for the use of persons concerned with occupational classification and structure in the hope that further investigations along these lines may be stimulated. It is also believed that availability of information of this type will assist in the development of a standard occupational classification, a primary objective of this Office.



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## I. INTRODUCTION

A serious gap in both occupation and education-training data is the absence of a link between these two aspects of manpower, beyond the general educational attainment statistics available in the census (or current survey). We do not know the specific training background of the labor force by its current occupational affiliation, that is, for example, we do not know what proportion of persons working as machinists have had formal training in this or other occupational skills. Nor do we know the current occupational affiliation of persons in the labor force who have had various types of specific training, that is, the proportion of workers with training as machinists who are, in fact, working as machinists. If such information were available, and particularly if trends over time could be analyzed, it would presumably be a very useful adjunct to the data required for both educational planning and occupational supply projections.

The present report was undertaken as a first exploration of the possibilities that such an approach to manpower and training data might provide. It is based on material collected in a special supplement to the Current Population Survey of April 1963 in which members of the experienced civilian labor force were asked a number of questions on their educational and training background. These materials were analyzed in an earlier report <sup>1/</sup> in which the emphasis was on the extent of training among persons in different age, color, and employment status categories, on the type of training with respect to occupation for which trained, institutional setting, and duration, and on whether or not the individual believed that he had used the training. For the present report, the Bureau of the Census has prepared additional tabulations which cross-classify present (or last, if unemployed) occupation by type of training. <sup>2/</sup>

The schedule used to collect these data was in two parts: (1) persons whose schooling had stopped before the completion of three years of college were asked to supply details on all formal occupational training programs they had ever taken; <sup>3/</sup> (2) persons who had completed

<sup>1/</sup> Manpower/Automation Research Monograph No. 2, Formal Occupational Training of Adult Workers, U. S. Dept. of Labor, Manpower Administration - Office of Manpower, Automation and Training, December 1964.

<sup>2/</sup> The writer wishes to express her gratitude to Sophia Cooper of the Bureau of Labor Statistics for her advice in planning the new tabulations and to Daniel Levine and Earl Gerson of the Bureau of the Census for supervising their preparation.

<sup>3/</sup> In the present report training programs still being taken have been excluded from the tabulations.

three or more years of college were asked to report their major field of study in their last year of college or professional school. The tabulations, therefore, have also been done in two parts and the tables shown in this report, with the exception of the first two introductory tables and the appendix tables on which they are based, refer to one or the other of these two groups. In this, as in the earlier report, the tabulations include only persons aged 22 to 64.

Two approaches are presented here. In Section II, emphasis is on the educational and training status, and on the substantive content of education and training, of persons in each of the major occupation groups and in those specific occupational categories for which the sample is large enough to provide data. Section III takes each of the specified fields of training or of college major and examines the occupational distribution of persons with this background. Broadly speaking, one may say that the first approach emphasizes the interest of the manpower analyst and the second that of the educational planner. In neither section is the treatment of the material exhaustive and, particularly in Section II, the reader will note that the treatment is not always uniform, that is, several different ways of handling the data are presented. This is an experimental report and uniformity of procedure and, indeed, substantive findings are not its major purpose; rather, it is hoped that it will suggest improved ways of collecting and analyzing materials of this type.

A copy of the schedule used and a discussion of the concepts, methods, and limitations of the data are included in the earlier report cited above. But special mention should be made here of the problem of reporting errors, particularly as they affect the data on training. It is probable that the longer it is since an individual has taken a given training program the less likely he is to remember and report it, especially if it is not directly related to his present occupation. Since most, although by no means all, training is taken early in life there may be a downward bias in the amount of training reported by older workers. It also seems probable that training which the worker is conscious of having used on a job is more likely to be remembered and reported than training never knowingly used, and for this reason, too, then, the total amount of training may be understated. These possible sources of error should be kept in mind when interpreting the materials.

Explanatory Note for tables showing occupation or field of training:

As noted, the present report is largely in the nature of an experimental study, particularly of the material on occupation or field of formal occupational training for those members of the experi-

enced civilian labor force who have completed less than three years of college. For this reason all the data on training tabulated for persons aged 22 to 64 are presented, although it will be clear to the reader that because of the small size of the sample a great deal of it cannot be statistically significant.

The arrangement of the tables on training in Section II of the text (Tables 5-7, 9-11, 14, 15, and 17-19) is as follows: The total line represents all persons in the particular category being discussed; the first column shows how many persons in the category have taken the specified type of training and, since a number of persons have had formal occupational training in more than one of these types, the column will always add to more than the total shown in the first line; the second column, on the other hand, includes those having training in one occupation or field only and, therefore, it will add to the total shown (except for reasons of rounding) since an individual can appear only once in this column. In most of these tables the occupations or fields of training are arranged in some rough order of assumed relevance to the occupation being pursued. Experts in particular occupational areas will undoubtedly be able to see relationships that have escaped the present writer and may be interested in certain expected relationships that do not appear. This, of course, is the justification for presenting the complete detail despite the smallness of the sample. To emphasize further the lack of statistical significance for many of the cells, it may be noted that a figure of 2,000, for example, probably represents only one sample case.

The same cautions apply to the training tables in Section III (Tables 22-26), although in these only percentage distributions are shown.

## II. THE FORMAL TRAINING OF PERSONS IN SELECTED OCCUPATIONS

### Introduction

This section presents a brief overview of differences in training status among persons in the experienced civilian labor force by major occupation group, age, and sex, regardless of the substantive content of training. It provides the background for the subsequent discussion, which will analyze substantive content in relation to current (or last) occupation.

As Table 1 indicates, 15 percent of all men aged 22 to 64 in the experienced civilian labor force and 13 percent of all women had completed 3 or more years of college. For each sex, roughly another 40 percent had some formal occupational training below this level and 45 percent had no formal training. The proportion with college training declines as age increases and the proportion at the opposite extreme -- those with no formal training -- increases with increasing age.

Among professional workers the similarity between the training status of men and women is also noteworthy: here about two-thirds of workers in each sex had completed 3 or more years of college, about one-fourth had training below this level, and roughly 10 percent had no formal training. In view of the substantial differences in the specific occupations pursued by men and women professional workers the similarity of their distributions by training status is particularly striking, the more so since outside the professional group differences in training status between men and women are considerably greater.

Among men, two other major occupation groups have college-trained proportions above the average: the "managers, officials, and proprietors" and the "sales workers." The training status of these two groups is quite similar in all the categories shown in Table 1 -- that is, within each age category the proportions with college training, with training below the 3-year college level, and with no training, do not differ substantially between male managerial and sales workers.

The fourth of the "white-collar" occupation groups, "clerical and kindred workers", has proportions of men with 3 years or more of college that reflect the average for all men quite closely. But proportions with training below college level are higher, and proportions with no formal training are lower, than average.

Beyond the white collar groups, the proportions of men who had completed 3 or more years of college drop sharply and become relatively insignificant for all age categories, while proportions

Table 1

Major Occupation Group by Education and Training  
Status: Experienced Civilian Labor Force Aged 22  
to 64, by Age and Sex (Percent Distribution)

Major occupation group and age	Men			Women		
	Completed 3 or more years of college	Completed less than 3 years of college		Completed 3 or more years of college	Completed less than 3 years of college	
		With formal occupational training	Without formal occupational training		With formal occupational training	Without formal occupational training
Total, aged 22-64	15.1	37.6	47.4	12.8	41.1	46.1
22-34	18.8	41.5	39.7	16.5	47.6	36.0
35-44	16.5	42.7	40.8	11.5	44.1	44.4
45-64	11.3	31.1	57.6	11.2	35.0	53.9
Professional, technical, & kindred workers, aged 22-64	66.2	23.6	10.2	64.9	23.7	11.4
22-34	70.4	21.5	8.1	71.7	20.4	7.8
35-44	66.5	26.1	7.3	65.9	24.6	9.5
45-64	60.3	23.9	15.9	58.5	26.0	15.4
Managers, officials, & proprietors aged 22-64	22.0	38.9	39.1	13.6	44.5	41.9
22-34	26.5	44.6	28.8	16.7	53.2	30.2
35-44	24.2	42.8	33.0	16.6	49.0	34.4
45-64	18.9	34.4	46.7	11.7	40.4	47.8
Clerical & kindred workers, aged 22-64	15.7	47.6	36.8	7.2	66.3	26.5
22-34	19.5	47.6	33.0	8.0	69.8	22.2
35-44	15.5	55.5	28.9	6.8	66.5	26.7
45-64	12.0	41.4	46.6	6.8	62.4	30.9



Table 1 (Continued)

Major occupation group and age	Men			Women		
	Completed 3 or more years of college	Completed less than 3 years of college		Completed 3 or more years of college	Completed less than 3 years of college	
		With formal occupational training	Without formal occupational training		With formal occupational training	Without formal occupational training
Sales workers, aged 22-64	22.2	40.8	36.9	4.7	43.1	52.2
22-34	26.2	42.3	31.5	6.2	54.9	39.3
35-44	25.8	42.7	31.5	2.6	48.5	48.9
45-64	15.9	38.1	46.0	5.4	36.4	58.1
Craftsmen, foremen, & kindred workers, aged 22-64	2.0	51.8	45.3	2.6	36.3	61.6
22-34	4.1	57.5	38.4	1.8	46.4	50.0
35-44	3.0	58.6	38.4	3.9	47.1	49.0
45-64	2.1	42.9	55.0	2.4	21.4	75.0
Operatives & kindred workers, aged 22-64	1.3	34.7	64.0	0.9	26.3	72.8
22-34	2.9	41.9	56.2	0.7	32.4	66.9
35-44	1.2	37.4	61.3	1.2	31.3	67.5
45-64	0.7	25.6	73.7	0.7	18.7	80.6
Service workers, aged 22-64	4.3	40.8	54.9	1.8	33.2	65.0
22-34	8.3	46.3	45.4	2.7	44.3	53.0
35-44	3.6	50.6	45.8	1.3	34.6	64.1
45-64	2.5	32.8	64.7	1.7	27.1	71.3
Private household workers, aged 22-64	n.a.	n.a.	n.a.	1.6	21.3	77.2
22-34	n.a.	n.a.	n.a.	2.7	33.0	64.3
35-44	n.a.	n.a.	n.a.	1.1	21.2	77.7
45-64	n.a.	n.a.	n.a.	1.4	16.7	81.9
Service workers, except private household, aged 22-64	n.a.	n.a.	n.a.	1.9	38.9	59.2
22-34	n.a.	n.a.	n.a.	2.7	48.7	48.7
35-44	n.a.	n.a.	n.a.	1.3	40.2	58.4
45-64	n.a.	n.a.	n.a.	1.8	32.7	65.5

Table 1 (Continued)

Major occupation group and age	Men			Women		
	Completed 3 or more years of college	Completed less than 3 years of college		Completed 3 or more years of college	Completed less than 3 years of college	
		With formal occupational training	Without formal occupational training		With formal occupational training	Without formal occupational training
Farmers & farm laborers, aged 22-64	3.2	22.9	73.8	2.5	20.1	77.4
22-34	4.2	35.8	59.9	---	36.6	63.4
35-44	4.7	27.0	68.3	4.1	14.9	81.0
45-64	2.1	15.7	82.3	3.1	14.1	82.8
Laborers, except farm & mine, aged 22-64	1.2	24.0	74.9	---	21.9	79.5
22-34	1.1	31.6	67.3	---	(1)	(1)
35-44	1.5	30.3	68.2	---	(1)	(1)
45-64	1.0	13.3	85.7	---	(1)	(1)

Source: Appendix Tables 1 and 2

(1) Percents not shown where base is less than 50,000

n.s. -- not available

Note: The sums of components may not equal totals because of rounding

with no formal training rise substantially for all groups except craftsmen. The interesting relationship for these occupation groups becomes that between workers with training below the 3-year college level and workers with no formal training. As one would expect, outside the white collar groups the highest proportions with training occur among "craftsmen, foremen, and kindred workers" and, concomitantly, the proportion with no formal training is lowest for this group. Second most highly trained among male non-white collar workers are "service workers". <sup>4/</sup> Among "operatives and kindred workers" only a little over a third have training, although there are substantial age differentials, and for "farmers and farm laborers" and "laborers, except farm and mine" the proportion with training falls to less than one-fourth.

As noted above, only among professional workers do the training status patterns for women resemble those for men, despite the fact that the overall training status of women in the civilian labor force is much like that for men. Aside from the professionals, no major occupation group has as much as a fifth of its female labor force composed of women who had completed 3 or more years of college and only the managerial group has over 10 percent with such a background. For the managerial group, the difference between men and women in the proportion of college trained is almost balanced by the higher proportion of women with training below this level so that proportions with no training are about the same for both sexes. Although there is a similar tendency for the younger female sales workers to have training below the 3-year college level in greater proportions than the younger males, it is not great enough to overcome the disparity in proportions of college-trained and the majority of female sales workers reported themselves as having had no training. <sup>5/</sup>

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<sup>4/</sup> The April 1963 Current Population Survey shows that approximately 25 percent of all male service workers are "protective service workers". For the younger groups included in the present study, those aged 22 to 44, who show the highest proportions of trained workers in Table 1, the percentage in protective service is undoubtedly higher: the 1960 Census indicates that a third of all male service workers aged 25 to 44 were in the protective service group, consisting largely of firemen, policemen, and other law enforcement occupations.

<sup>5/</sup> The fact that over half of all women sales workers had no training is associated with the predominance of older women in this occupation group: women sales workers aged 45 to 64 constituted 54 percent of all women sales workers (aged 22 to 64) in the study; in contrast, the comparable proportion for women in all occupation groups combined was only 44 percent.

The fourth of the white collar groups, "clerical and kindred workers", presents an even greater contrast between men and women. The proportion of women with training at the less-than-3-years of college level exceeds that for any other major occupation group of women by a very substantial amount and, therefore, despite the small proportion who had completed 3 or more years of college, the percent of female clerical workers with no training is less than for men or for women in any occupation group except the professional. Throughout the blue collar, farm worker, and service groups, the proportion of women workers with no training is very high, and generally substantially higher than for men, ranging from 60 to 80 percent of all women in these categories. <sup>6/</sup>

One additional aspect of the data presented in Table 1 merits special mention: the consistency of age patterns, in the majority of cases, within each set of categories. The proportion of workers with no training rises with age for men in most occupation groups and differences between the two younger groups, on the one hand, and the oldest group, on the other, are always particularly striking. For women the same rise occurs for all groups, except craftsmen, but it is generally more equally distributed among the three age categories.

With the exception of farm workers and laborers, the proportion of men who had completed 3 years or more of college falls with increasing age, even where, as in the case of craftsmen, operatives, and service workers, such proportions are very low. In view of the great increase in the college-trained among the population this observation is hardly unexpected. A similar pattern, however, does not emerge for women except among professional workers. One hesitates to interpret the erratic fluctuations of the college-trained proportions for women because of the small numbers involved, but presumably it may be associated with the differential labor force participation of women with differing levels of educational attainment or with some tendency for middle-aged college-trained women to return to the labor force in non-professional jobs, for example, as part-time sales workers. At any rate, it is among those with training below the 3-years of college level (again with the exception of craftsmen) that the consistent age pattern for women emerges.

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<sup>6/</sup> The relatively high proportion of trained workers in the group "service workers, except private household" for women does not, of course, come from the protective service workers, as in the case of men, but rather from the relative importance of such occupations as "hairstresser" and "practical nurse" among females in this group.

The possible sources of error in these data have already been discussed and they may, of course, be affecting the relationships indicated in Table 1 substantially, particularly the age differentials. Nevertheless, it seems unlikely that they could be great enough to alter what seems to be the obvious conclusion to be drawn from Table 1, namely, that over time the labor force is becoming increasingly highly trained and that a parallel study conducted twenty years later would very likely find that less than a third, and possibly less than a fourth, of the country's adult workers were without training of any kind, in contrast to the present when close to half are in this situation.

Another way of looking at these data is to turn them around and instead of observing the training status of persons in each occupation group, as in Table 1, examine the occupational distribution of persons with a particular training status. These distributions are presented in Table 2. The group with training below the 3-year college level has been omitted from this table since their distribution without regard to the type of training involved is not very meaningful and this aspect will be discussed later. What is of interest here is what occupation groups absorb persons with the highest educational attainment, on the one hand, and what happens to persons with no training, on the other.

The high proportion of the college trained who are in professional occupations is hardly surprising. What is surprising, however, is the decline in this proportion at the older ages among men, and the concomitant rise in the proportion of college trained in the managerial group. This changing relationship between the professional and managerial groups among college-trained men suggests that a substantial proportion of the professional group may move into managerial occupations as they become older. In other words, the changing distribution cannot be interpreted as indicating that professional occupations are absorbing increasing proportions of college trained men over time (although they may be) because of the possible effect of occupational mobility on these distributions. Similarly in the case of those without training: close to half (47 percent) of untrained men aged 22 to 34 are either operatives or laborers, as compared to only a third (34 percent) of those aged 45 to 64, but one cannot, from these data, draw the conclusion that this is the pattern of the future, that is, that increasingly men without training will have open to them only operative and laborer jobs, since, in fact, these may be only entry jobs from which workers may move into other groups with advancing age and experience.

With this brief summary of the training status of the experienced labor force as it varies by sex, by age, and by major occupation group, we turn now to the analysis of such variations within the major groups as the limited detail available from the present data permit, and to discussion of the substantive content of training insofar, again, as this is possible. For convenience of presentation we will deal with

Table 2

Workers with College Training (a) and Those without Formal Occupational Training, by Major Occupation Group: Experienced Civilian Labor Force Aged 22 to 64, by Age and Sex (Percent Distribution)

Major occupation group	22-64 years of age			22-34 years of age			35-44 years of age			45-64 years of age		
	All work-ers	College trained (a)	With-out training	All work-ers	College trained (a)	With-out training	All work-ers	College trained (a)	With-out training	All work-ers	College trained (a)	With-out training
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Professional, technical, & kindred workers Managers, officials, & proprietors Clerical & kindred workers Sales workers Craftsmen, foremen, & kindred workers Operatives & kindred workers Service workers Farmers & farm laborers Laborers, except farm & mine	12.5	55.1	2.7	16.0	60.0	3.2	13.7	55.2	2.5	9.1	48.6	2.5
	14.3	20.9	11.8	9.5	13.5	6.9	14.7	21.5	11.9	17.8	29.7	14.4
	6.7	6.9	5.2	7.7	8.1	6.4	6.7	6.2	4.7	5.8	6.2	4.7
	5.1	7.5	4.0	5.6	7.8	4.4	5.2	8.1	4.0	4.6	6.5	3.7
	21.1	4.1	20.2	19.4	4.2	18.7	22.7	4.1	21.4	21.4	4.0	20.4
	20.5	1.7	27.7	23.6	2.4	33.3	20.0	1.5	30.1	18.5	1.1	23.6
	6.3	1.8	7.3	5.4	2.5	6.2	5.7	1.2	6.4	7.5	1.7	8.4
Total	6.5	1.4	10.2	4.9	1.1	7.4	5.3	1.5	9.0	8.5	1.6	12.2
	6.9	0.5	10.9	7.9	0.5	13.3	6.0	0.5	10.0	6.8	0.6	10.1
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	13.9	70.5	3.4	17.2	74.9	3.8	11.7	67.1	2.5	13.1	68.3	3.7
Professional, technical, & kindred workers Managers, officials, & proprietors	5.1	5.5	4.7	2.2	2.2	1.8	5.4	7.7	4.2	6.9	7.3	6.2

Table 2 (Continued)

Major occupation group	22-64 years of age			22-34 years of age			35-44 years of age			45-64 years of age		
	All work-ers	College trained (a)	With-out train-ing	All work-ers	College trained (a)	With-out train-ing	All work-ers	College trained (a)	With-out train-ing	All work-ers	College trained (a)	With-out train-ing
Clerical & kindred workers	28.4	16.0	16.4	35.1	17.0	21.7	30.4	18.1	18.3	22.8	13.8	13.1
Sales workers	7.7	2.8	8.7	4.7	1.8	5.1	8.0	1.8	8.8	9.4	4.6	10.1
Craftsmen, foremen, & kindred workers	0.9	0.2	1.2	1.0	0.1	1.3	0.9	0.3	1.0	0.9	0.2	1.3
Operatives & kindred workers	17.0	1.1	26.8	16.5	0.7	30.6	18.8	2.0	28.5	16.2	1.0	24.2
Private household workers	7.7	1.0	12.8	5.7	0.9	10.3	6.5	0.6	11.4	9.7	1.2	14.7
Service workers, except private household	16.3	2.4	20.9	14.7	2.4	19.9	15.7	1.8	20.6	17.7	2.9	21.5
Farmers & farm laborers	2.7	0.5	4.5	2.4	---	4.3	2.1	0.8	3.9	3.2	0.9	5.0
Laborers, except farm & mine	0.4	---	0.6	0.5	---	1.3	0.5	---	0.7	0.2	---	0.3

(a) Completed 3 or more years of college.

Source: Appendix Tables 1 and 2

Note: The sums of components may not equal totals because of rounding.

men and women and with each major occupation group separately.

Professional, technical and kindred workers - Men

As one would expect and as noted above, the college trained group dominates the professional category for men. Table 3 indicates that this dominance prevails in all but four of the specified occupations for which we have data, the exceptions being the three technician categories and the draftsmen. Moreover, among those occupations for which we have adequate age data the proportion with college training does not vary substantially by age, with one notable exception, the engineers. As has been generally recognized, this is an occupation that has, at least in the past, recruited a sizeable proportion of its practitioners from the ranks.

For the college-trained professional man, the major field of college study is generally quite closely tied to the field of work, again as one would expect. Thus Table 4 shows that 84 percent of the "accountants and auditors" had a business major and no other major area of study included any significant proportion. Virtually all "natural scientists" had their training in the agricultural, biological, or physical sciences and virtually all "physicians, surgeons, dentists, etc." in the health or biological sciences. Over 80 percent of the college-trained "engineers" had engineering as their latest field of college or professional study but there are minor concentrations here in the physical sciences and in business. The latter is particularly interesting and may reflect the apparently increasing tendency for graduate engineers to return for post-graduate managerial training at university schools of business as they move up the ladder of responsibility in industrial establishments.

A substantial majority of "teachers, elementary and secondary schools" have education as their major field of study but the concentration in a single field is considerably less than among the occupations discussed in the previous paragraph and all of the specified fields of study have made some contribution to the occupation. When we come to college and university teachers, the dispersion among fields of study is much greater, reflecting the fact that for this category it is, of course, subject matter taught rather than the process of teaching itself that is the basis of training.

The technician category is one in which there is currently a great deal of interest and, therefore, although its college-trained sector is fairly small, it is perhaps worth noting that, while engineering and the biological and physical sciences were fields of study for almost two-thirds of the college-trained technicians, every field made some contribution.



Table 3

Experienced Civilian Labor Force in Selected Professional  
and Technical Occupations by Education Status and Age:  
Men Aged 22-64 - April 1963

Occupation and age	Total (in 1000s)	Percent com- pleting 3 or more years of college	Occupation and age	Total (in 1000s)	Percent com- pleting 3 or more years of college
Total, professional & technical, aged 22-64	5,039	66.2	Recreation, group, social worker, aged 22-64	69	87.0
22-34	2,010	70.4			
35-44	1,530	66.5	Social scientists, aged 22-64	52	90.4
45-64	1,499	60.3			
Accountants and auditors, aged 22-64	441	55.8	Teachers, elementary & secondary schools, aged 22-64	512	93.4
22-34	178	53.4	22-34	260	96.2
35-44	113	60.2	35-44	123	88.6
45-64	150	54.7	45-64	130	92.3
Engineers, aged 22-64	996	66.4	College presidents & professors, aged 22-64	159	98.7
22-34	386	79.3	22-34	52	100.0
35-44	345	66.4	35-44	52	96.2
45-64	265	47.5	45-64	55	100.0
Lawyers and judges, aged 22-64	201	98.5	Draftsmen, aged 22-64	269	20.4
35-44	63	100.0	22-34	147	23.8
45-64	94	95.7	35-44	74	21.6
Natural scientists, aged 22-64	91	78.0			
Physicians, surgeons, dentists, (a) aged 22-64	347	98.8	Technicians, electronic, aged 22-64	96	30.2
22-34	70	100.0	22-34	63	41.3
35-44	145	100.0	Technicians, engineering & physical sciences, aged 22-64	172	27.9
45-64	132	97.0	22-34	61	32.8
			35-44	72	31.9

Table 3 (Continued)

Occupation and age	Total (in 1000s)	Percent com- pleting 3 or more years of college
Other technicians, aged 22-64	96	24.0
All other professionals & technicians, aged 22-64	1,538	59.9
22-34	604	68.2
35-44	445	56.9
45-64	491	51.9

(a) Includes physicians, surgeons, dentists, opticians, veterinarians.

Note: The sums of components may not add to totals because of rounding.

Table 4

Experienced Civilian Labor Force in Selected Professional and Technical Occupations by Major Field of College Study:  
Men Aged 22-64 Who Had Completed 3 or More Years of College, April 1963

Occupation	Major field of college study												
	All fields		Agri- culture	Biol. sci.	Busi- ness	Edu- cation	Engin- eering	Health sci.	Human- ities	Phys. sci.	Soc. sci.	All other rptd.	
	Number (in 1000s)	Percent											
Total, professional & technical	3,338	100.0	1.8	3.7	11.4	13.7	20.8	13.0	10.3	6.4	6.0	11.7	1.2
Accountants & auditors	246	100.0	---	0.8	83.7	2.8	---	---	2.0	---	2.0	4.9	3.3
Engineers	661	100.0	0.3	---	5.6	1.1	82.9	0.3	0.3	4.8	1.1	1.8	2.0
Lawyers & judges	198	100.0	---	---	1.0	---	1.0	1.0	1.0	1.0	10.6	84.8	---
Natural scientists	71	100.0	23.9	18.3	---	---	2.8	2.8	---	49.3	---	2.8	---
Physicians, surgeons, dentists	343	100.0	---	8.7	---	0.6	---	85.7	1.2	2.0	0.6	0.6	1.2
Recreation, group, social workers	60	100.0	3.3	---	6.7	11.7	---	6.7	3.3	---	68.3	3.3	---
Social scientists	47	100.0	---	---	21.3	4.3	---	4.3	6.4	4.3	29.8	25.5	4.3
Teachers, elementary & secondary, n.e.c.	478	100.0	2.5	4.2	2.5	62.6	1.0	1.3	5.0	5.4	10.9	4.2	0.4
College presidents & professors	157	100.0	3.2	10.0	4.5	19.7	10.8	3.2	19.1	9.6	11.5	8.3	---
Technicians	100	100.0	2.0	13.0	2.0	10.0	31.0	6.0	14.0	18.0	2.0	---	2.0
All other professionals & technicians, kindred	977	100.0	2.3	3.2	10.1	9.6	9.3	11.6	26.5	7.8	3.9	15.0	0.8

Note: The sums of components may not equal totals because of rounding.

The residual category of college-trained professional men includes occupations with very diverse skill requirements and therefore one cannot interpret the distribution of its workers by major field of study in terms of the relationship between occupation and major field. It is interesting to note, however, the relative importance of the humanities in supplying men for these activities.

As Appendix Table 5 shows, among male professional workers with less than 3 years of college the great majority (70 percent) have had some kind of training. The specific types of training for which data are available for men from the present study are listed in Appendix Table 7, where the distribution of men with formal occupational training is presented for each of the major occupation groups. Table 5 presents the comparable training picture for men in the four specific occupations within the professional group for which we have data. In Section A of Appendix Table 7 and in the first column of Table 5 and similar tables to appear below, the figures are not additive; that is, they include all fields in which training has been taken and therefore an individual will appear more than once if he has taken training in more than one field. The distributions in Section B of Appendix Table 7 and the second two columns of Table 5, on the other hand, are additive since they refer to persons taking training in one field only.

The data shown in Table 5, and in most of the similar tables to follow, are, of course, very thin and they must be regarded as suggestive rather than definitive in any sense. Their interpretation is further hampered by the relative importance of the "All other" category which includes formal occupational training in all but the 23 fields specified in Appendix Table 7, and therefore very probably includes programs relevant to these occupations. Nevertheless, certain interesting aspects of the distributions may be noted. Thus, for example, among men with training in only one skill, over half of the "accountants and auditors" have had this training as "accountant or auditor", "bookkeeper", or in the field of "business and commercial" courses. Although half the "draftsmen" have had training directly in this occupation there is some indication that training, perhaps coupled with experience, in certain craft occupations may also be relevant for draftsmen.

#### Managers, officials, and proprietors - Men

As Table 1 showed, slightly over a fifth of all men in this group had completed 3 or more years of college. "Business" was the most usual college major for these men, with "engineering" in second place in every age group (Appendix Table 3). However, the proportions with a "business" major declines inversely with age: 44 percent of college-



Table 5 (Continued)

C. Draftsmen (Cont.)		D. Technicians, other engineering & physical sci. (Cont.)				
Occupation or field studied	All men with training	Men with training in only one skill		All men with training	Men with training in only one skill	
		No.	Percent		No.	Percent
Mech. & repair, air	12	-	-	3	-	-
Mech. & repair, auto	4	-	-	3	-	-
Mech. & repair, radio, TV	5	3	3.0	2	-	-
Tinsmith & coppersmith	7	-	-			
Welder	3	-	-	2	2	8.3
General trades	10	2	2.0	2	2	8.3
Merchandising	2	-	-	13	-	-
Bus. & comm.	10	3	3.0	5	2	8.3
Agriculture	2	-	-	42	8	33.3
All other	90	18	17.8			
Not reported	16	11	10.9			

Note: See Explanatory Note on p. 3.

trained managerial workers aged 22 to 34 had a business major, 41 percent of those aged 35-44, and only 28 percent of those aged 45 to 64. Since the proportion of all college-trained men with a business major does not vary with age, this relative decline with increasing age cannot be attributed to differences in the supply available. Rather, it is probably further indication of the tendency, mentioned before, for men with high level training in other fields to move into managerial positions as they grow older.

About half of the men in this group with less than 3 years of college have had some formal occupational training. This proportion declines with age, from 61 percent for men aged 22 to 34, to 56 percent of those aged 35 to 44, to 42 percent for the 45 to 64 year old group (Appendix Table 5). For those with training, the occupation or field of training varies widely, with only "business and commercial" training showing any notable concentration (Appendix Table 7). If more detail on this group were available a more meaningful assessment of the relationship between training and occupation could be made. It is, for example, probable that a substantial proportion of those trained as "mechanics and repairmen, auto" are managers or proprietors of automobile servicing establishments. Particularly interesting in this context would be to learn what type of establishment employed those with "business" training, either at or below college level, and what type relied primarily on persons trained in the specific field relevant to the commodity or service being produced, for management level workers.

#### Clerical and kindred workers - Men

About 16 percent of male clerical workers had completed 3 or more years of college (Table 1) and about 30 percent of these had a "Business" major in college (Appendix Table 3). Otherwise, their fields of college major were more or less randomly distributed.

Among those with less than 3 years of college, 56 percent had formal occupational training (Appendix Table 5) and, again, about 30 percent had this training in the general field of "business and commerce" (Appendix Table 7). For those with training in only one skill, about 27 percent had this training in "business and commerce" and another 12 percent in other white collar occupations or fields.

The only specific clerical occupation for which we have data for men, "bookkeepers", has the same proportion of college-trained workers, 16 percent, as all clerical workers. For those with less than three years of college, however, a slightly higher proportion have training and of these, 37 percent have it directly in bookkeeping. Moreover, among the 30,000 male bookkeepers with training in a single area, 23,000 have it as either bookkeeper, or accountant and auditor, or in "business

and commerce" (Table 6). These figures are, of course, very small in view of the sample size but they suggest that the greater detail that a larger sample (or Census) would permit might show that men in clerical occupations involving specific skills have relevant formal training in greater proportions than the overall data for male clerical workers indicate.

Table 6

Occupation or Field Studied in Training Programs by Bookkeepers in the Experienced Civilian Labor Force: Men Aged 22-64 Who Had Completed Less Than 3 Years of College, April 1963  
(in thousands)

Occupation or field studied	All men with training	Men with training in only one skill	
		No.	Percent
Total	54	30	100.0
Bookkeeper	20	7	23.3
Accountant & auditor	21	9	30.0
Business & commercial	17	7	23.3
Technician, electronic	2	2	6.7
Mechanic & repairman, aircraft	4	-	-
Mechanic & repairman, auto	2	-	-
Mechanic & repairman, radio, TV	2	-	-
Merchandising	2	-	-
General trades	2	-	-
Agriculture	2	2	6.7
All other	12	2	6.7
Not reported	2	2	6.7

Note: See Explanatory note on p. 3.

Sales workers - Men

The proportion of male sales workers with three or more years of college is the same as that for "managers, officials, and proprietors", 22 percent (Table 1). However, the proportion of these college-trained men with "business" as their major field of study is higher for the sales group - roughly 50 percent of the total (Appendix Table 3).

Among those who had completed less than three years of college, slightly over half (52 percent) had formal occupational training but only 31 percent of these had training in "business and commerce" (Appendix Table 7). Some 57,000 sales workers had training in "merchandising",



a considerably higher number than for any other major group. But since relatively few men have had such training, they do not make a major contribution to the trained manpower in this or any other occupational group at present.

Table 7 presents training data for the two broad components of the sales group - "salesmen and sales clerks" and "all other sales workers" and a few interesting differences emerge. For example, virtually all men with "merchandising" training are in the first category where, in fact, this type of training is probably most relevant. The high proportion in the residual category with "all other" training may reflect specialized training in real estate, insurance, and other fields relevant to some of the specialized sales workers included in this residual.

#### Craftsmen, foremen, and kindred workers - Men

Since the proportion of workers who had completed three or more years of college is very small for this and the following major groups, only those with less than three years of college will be discussed. This section will concentrate on the training status of those in the 12 specified craft occupations for which we have data. <sup>1/</sup> These occupations include about 47 percent of all men in the group.

As Table 8 indicates, the proportion of workers with formal occupational training varies considerably among these 12 occupational categories, ranging from 40 percent for "carpenters" to 89 percent for the small group of "mechanics and repairmen, radio and T.V." The variations in percentages may provide a rough index of the range of skill levels encompassed by the specific Census occupational categories, indicating that the category "carpenters", for example, includes a considerably more heterogeneous group of workers, with respect to skill, than the category "electricians". Such a conclusion, however, would be premature in view of our present lack of knowledge about how workers acquire skills and the respective rolls played by training and experience, for example.

The complexity of the situation with regard to training is further revealed by the second column of data presented in Table 8. Of the total number of craftsmen in the 12 specified occupations who had formal occupational training, only 54 percent had such training directly in the occupation they were pursuing. Here again, as in the first column, there is considerable variation in proportions among the 12 occupations. A slight, although not clear-cut, tendency

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<sup>1/</sup> It might be noted in passing, however, that about a third of the 249,000 male craftsmen who reported completing three or more years of college had engineering as their major field of college study, a background relevant to a number of the occupations included in this major group (Appendix Table 3).

Table 7

Occupation or Field Studied in Training Programs by Experienced Civilian Labor Force in Sales Occupations: Men aged 22-64 Who Had Completed Less Than 3 Years of College, April 1963  
(in thousands)

A. Salesmen and sales clerks				B. All other sales workers			
Occupation or field studied	All men with training	Men with training in only one skill		Occupation or field studied	All men with training	Men with training in only one skill	
		No.	Percent			No.	Percent
Total	599	380	100.0	Total	238	131	100.0
Merchandising	50	29	7.6	Business & comm.	75	25	19.1
Business & comm.	181	87	22.9	Merchandising	7	-	-
Accountant & auditor	24	7	1.8	Accountant & auditor	2	-	-
Draftsman	26	12	3.2	Draftsman	6	4	3.1
Technician, electronic	26	3	0.8	Technician, electronic	8	-	-
Bookkeeper	16	5	1.3	Technician, oth.eng.&ph.sci.	2	-	-
				Bookkeeper	7	2	1.5
Brickmason	4	2	0.5	Brickmason	2	2	1.5
Carpenter	14	11	2.9	Carpenter	9	5	3.8
Compositor & typeset.	7	2	0.5	Compositor & typeset.	7	2	1.5
Electrician	17	5	1.3	Electrician	9	6	4.6
Machinist	8	5	1.3	Lineman & serviceman	6	6	4.6
Mech. & rep., air	25	10	2.6	Mech. & rep., auto	4	2	1.5
Mech. & rep., auto	39	26	6.8	Mech. & rep., auto	8	-	-
Mech. & rep., radio, TV	25	4	1.1	Tinsmith & coppersmith	2	-	-
Painter	3	-	-	Welder	5	3	2.3
Plumber	2	2	0.5	General trades	12	2	1.5
Welder	27	-	-				
General trades	69	17	4.5	Agriculture	12	3	2.3
				All other	187	65	49.6
Barber	2	-	-	Not reported	9	4	3.1
Agriculture	37	17	4.5				
All other	265	120	31.6				
Not reported	25	16	4.2				

Note: See Explanatory Note on p. 3

for the two sets of proportions to vary together is discernible - that is, occupations in which proportions of trained workers are high tend also to have relatively higher proportions with their training in the specified occupation. "Electricians", "mechanics and repairmen, aircraft", and "mechanics and repairmen, radio and TV" are examples of these, whereas proportions for "carpenters" and "painters" are considerably below average in both columns.

Table 8

Percent of Experienced Civilian Labor Force in Selected Craft Occupations With Training and Percent of Trained With Training in Specified Occupation: Men Aged 22-64 Who Had Completed Less Than 3 Years of College, April 1963

Occupation	Percent with formal occupational training	Percent of all with training who had training in the specified occupation
Mechanics & repairmen, radio, TV	88.7	62.8
Tinsmiths & coppersmiths	85.6	48.5
Compositors & typesetters	81.4	54.4
Mechanics & repairmen, air.	78.1	61.8
Electricians	77.7	66.7
Linemen & servicemen	66.9	43.9
Machinists	64.6	55.2
Plumbers & pipefitters	60.0	77.2
Brickmasons	56.9	56.0
Mechanics & repairmen, auto	48.7	47.9
Painters	44.5	45.4
Carpenters	40.4	45.7

Source: Column 1 from Appendix Table 5; Column 2 computed from data in Table 9 (first column of each section)

The obvious question posed by Table 8 is how much of the substantial proportion of training taken outside the specific occupation was in fact relevant to that occupation. Unfortunately, we have data on the substantive content of training for only a very limited range of occupations and fields. Table 9 shows what the present survey revealed and several interesting relationships may be noted. The number of "linemen and servicemen" who have had their training as "electrician" or "technician, electronic" is particularly interesting since this category is one in which major differences between the percentages in Columns 1 and 2 of Table 8 appeared. If "linemen" trained in these two related fields are included with those trained as "lineman" the resulting proportion is much closer to that shown in the first column of Table 8 and therefore more in line with the general relationship between the two columns of Table 8.



Table 9 (continued)

C. Electricians		Men with training in only one skill		D. Compositors and typesetters			
Occupation or field studied	All men with training No.	Men with training in only one skill No.	Percent	Occupation or field studied	All men with training No.	Men with training in only one skill No.	Percent
Total	282	193	100.0	Total	79	39	100.0
Electrician	188	118	61.1	Compositor & types.	43	20	51.3
Lineman & serviceman	3	2	1.0	General trades	2	2	5.1
Technician, electr.	37	3	1.6	Carpenter	3	2	5.1
General trades	10	7	3.6	Electrician	2	--	--
Mech. & repair, air.	5	2	1.0	Mechanist	2	--	--
Mech. & rep., auto	17	10	5.2	Mech. & rep., radio, TV	6	--	--
Mech. & rep., radio, TV	3	--	--	Tinsmith & coppersmith	2	--	--
Compositor & type.	2	--	--				
Welder	9	--	--	Bookkeeper	5	--	--
				Business & comm.	14	--	--
Draftsman	7	3	1.6	Agriculture	12	--	--
Bookkeeper	2	--	--	All other	44	12	30.8
Business & comm.	21	9	4.7	Not reported	5	4	10.3
Agriculture	17	6	3.1				
All other	78	29	15.0				
Not reported	7	3	1.6				

Table 9 (continued)

E. Linemen and servicemen			F. Machinists		
Occupation or field studied	All men with training	Men with training in only one skill	Occupation or field studied	All men with training	Men with training in only one skill
		No.			Percent
Total	212	114	100.0	248	156
Lineman & serv.	93	39	34.2		85
Electrician	27	16	14.0		10
Technician, electr.	33	12	10.5		8
Mech. & rep. radio, TV	26	7	6.1		3
General trades	21	5	4.4		11
Mech. & rep. air.	12	2	1.8		2
Mech. & rep., auto	9	2	1.8		3
Machinist	4	--	--		2
Painter	2	--	--		--
Tinsmith & coppersmith	2	--	--		--
Draftsman	7	2	1.8		3
Merchandising	2	--	--		2
Business & comm.	29	13	11.4		3
Agriculture	11	2	1.8		2
All other	69	10	8.8		17
Not reported	7	5	4.4		7

Table 9 (continued)

G. Mechanics and repairmen, aircraft			H. Painters				
Occupation or field studied	All men with training	Men with training in only one skill		Occupation or field studied	All men with training	Men with training in only one skill	
		No.	Percent			No.	Percent
Total	89	41	100.0	Total	185	126	100.0
Mech. & rep., air	55	21	51.2	Painter	84	55	43.7
Mech. & rep., auto	22	5	12.2	General trades	18	13	10.3
General trades	9	2	4.9	Electrician	12	4	3.2
Technician, electronic	8	3	7.3	Machinist	2	2	1.6
Compositor & typesetter	2	2	4.9	Mech. & rep., auto	9	3	2.4
Electrician	5	3	7.3	Tinsmith & coppersmith	8	6	4.8
Machinist	10	2	4.9	Welder	5	2	1.6
Welder	2	2	4.9	Mech. & rep., air	7	--	--
Mech. & rep., radio TV	2	--	--				
Tinsmith & coppersmith	2	--	--	Draftsman	4	4	3.2
				Technician, elec.	4	2	1.6
Accountant & auditor	2	--	--	Tech., oth. eng. & phys.sci.	2	--	--
Draftsman	9	--	--	Bookkeeper	8	2	1.6
Business & comm.	2	--	--	Business & comm.	14	6	4.8
Agriculture	3	--	--	Agriculture	9	7	5.6
All other	22	2	4.9	All other	67	22	17.5
				Not reported	2	--	--

Table 9 (continued)





Other interesting aspects of Table 9 are the number of carpenters and machinists who have had "draftsman" training and the relatively high proportion of "mechanics and repairmen, auto" and "painters" who have had a "general trades" training. The proportion of "compositors and typesetters" who have had "all other" training is markedly higher than the average and may reflect training in other, related, printing trades. Although the numbers involved are small, there is some indication that "mechanics and repairmen, radio and TV" may include a concentration of men trained as "technician, electronic."

#### Operatives and kindred workers - Men

Most operatives and kindred workers (65 percent) had no formal occupational training and among those who had such training the range of occupations and fields included is very diverse, not differing greatly from the dispersion of training areas for all men with training (Appendix Table 7). The group is, of course, very large and one may assume that the overall pattern conceals a considerable range of differences among specific occupations within it. The three such occupations for which we have data, those identified in Table 10, include only a little over 10 percent of all men in the group. All three have somewhat higher proportions of trained workers than the average, ranging from 39 percent for the "assemblers", to 49 percent for the "checkers, examiners, and inspectors", to 53 percent for the "welders". This last category compares favorably with most of the craft occupations discussed previously, not only as regards proportions with formal training but also as regards proportion of those trained who had training in their specific occupation. A fairly high proportion of the trained "assemblers"<sup>8/</sup> also had training as welders, while for the "checkers, examiners, and inspectors" the highest proportion with training have had this training in a "general trades" course, among the fields specified here.

#### Service workers - Men

As has been noted above, this major group includes a very diverse set of occupations, particularly from the point of view of training requirements, and the group average, indicating that 43 percent of those who had completed less than three years of college had formal occupational training (Appendix Table 5), must be considered almost meaningless in the light of this diversity. The one occupation category for which we have data, "barbers", highlights this point. Some 85 percent of these men had training and, as Table 11 shows, their training was almost entirely concentrated in the specific occupation they were pursuing. The very high proportion of the group total with

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<sup>8/</sup> The term "assembler" is, of course, not very specific and it is possible that training in some specific craft may be relevant to the work performed.

Table 10

Occupation or Field Studied in Training Programs by Experienced Civilian Labor Force in  
Selected Operative Occupations: Men aged 22-64 Who Had Completed Less than 3 Years of College, April 1963  
 (in thousands)

A. Assemblers		B. Checkers, examiners, inspectors			
Occupation or field studied	All men with training	Men with training in only one skill		Occupation or field studied	Men with training in only one skill
		No.	Percent		No.   Percent
Total	125	89	100.0	Total	135   91   100.00
Welder	21	19	21.3	General trades	17   18.7
General trades	12	3	3.4	Mech. & rep., air	2   2.2
Mech. & rep., air.	9	6	6.7	Mech. & rep., auto	10   11.0
Mech. & rep., auto	9	7	7.9	Mech. & rep., radio, TV	4   4.4
Mech. & rep., radio, TV	4	2	2.2	Machinist	5   5.5
Electrician	4	4	4.5	Carpenter	2   2.2
Painter	3	3	3.4	Linemen & serviceman	2   2.2
Carpenter	3	2	2.2	Welder	2   2.2
Machinist	3	2	2.2	Brickmason	2   -
Brickmason	2	-	-	Electrician	3   -
Plumber	3	-	-	Tinsmith & coppersmith	2   -
Technician, electronic	13	4	4.5	Technician, electronic	4   4.4
Draftsman	12	-	-	Tech., oth. eng. & ph. sci.	-   -
Bookkeeper	2	-	-	Accountant & auditor	-   -
Business & comm.	20	9	10.1	Draftsman	2   -
Agriculture	14	7	7.9	Bookkeeper	3   -
All other	43	23	25.8	Merchandising	4   -
Not reported	2	-	-	Business & comm.	10   5.5
				Agriculture	13   7.7
				All other	60   35.2
				Not reported	3   2.2

Table 10 (Continued)

C. Welder	Occupation or field studied	All men with training	Men with training in only one skill	
			No.	Percent
	Total	193	138	100.0
	Welder	126	82	59.4
	Mech. & rep., auto	23	9	6.5
	General trades	10	-	-
	Machinist	9	2	1.4
	Carpenter	7	2	1.4
	Electrician	2	-	-
	Lineman & serviceman	2	-	-
	Mech. & rep., air.	2	-	-
	Plumber	2	-	-
	Draftsman	9	5	3.6
	Bookkeeper	1	-	-
	Business & comm.	16	3	2.2
	Agriculture	5	2	1.4
	All other	53	27	19.6
	Not reported	7	7	5.1

Note: See Explanatory Note on p. 3.

"all other" training that Appendix Table 7 indicates (67 percent of all men with training and 43 percent of men with training in only one skill) undoubtedly reflects the influence of occupations, such as those in the protective services, which have equally high proportions of workers trained in a specific field.

Farmers and farm laborers - Men

Less than a fourth of farm workers have had formal occupational training but about half of these have had training in "agriculture" (Appendix Table 7). Another fifth of those with training in only one skill had this training in one of the 12 specified craft occupations, some of which, for example, "mechanic and repairman, auto", may be relevant for their work.

Laborers, except farm and mine - Men

Among the men in this group the proportion with formal training is also about one-fourth. Their occupations and fields of training are fairly widespread, with some concentration in "mechanic and repairmen, auto" (Appendix Table 7). They also have the highest proportion with training in "agriculture" of any of the groups outside of the farm workers.

Table 11

Occupation or Field Studied in Training Programs by Barbers in the Experienced Civilian Labor Force: Men Aged 22-64 Who Had Completed Less Than 3 Years of College, April 1963  
(in thousands)

Occupation or field studied	All men with training	Men with training in only one skill	
		No.	Percent
Total	120	98	100.0
Barber	111	90	91.8
Draftsman	2	-	-
Mechanic & repairman, auto	2	-	-
Welder	2	-	-
General trades	2	-	-
Business & comm.	3	-	-
Agriculture	2	-	-
All other	21	6	6.1
Not reported	4	2	2.0

Note: See explanatory note on p. 3

Professional, technical and kindred workers - Women

Although the overall proportion of women professional workers who had completed three or more years of college, 65 percent, is at about the same level as that for men, variations among the occupations within the group are much greater for women than for men, at least with respect to the few specific categories for which the sample provides data. As Table 12 shows, it is only the dominance of "teachers, elementary and secondary schools", who constitute 46 percent of all professional women in the sample, that maintains the overall proportion at anything like that for men. For the second largest occupational category, "nurses, professional", the proportion with three or more years of college is only 30 percent. Since these two occupations include between 60 and 70 percent of all professional women in each of the age categories, the increase in the proportion of college-trained among younger professional women, noted in Table 1, is largely the result of the changing proportion of college-trained nurses (Table 12).

Table 12

Experienced Civilian Labor Force in Selected Professional Occupations  
by Education Status and Age: Women Aged 22-64, April 1963

Occupation	Number (in thousands)			
	Aged 22-64	Aged 22-34	Aged 35-44	Aged 45-64
Total, prof., tech., & kin.	2,852	1,008	671	1,173
Nurses, professional	548	202	135	211
Teachers, elem. & sec.	1,319	504	269	546
All other prof., tech.	984	303	268	415

Occupation	Percent completing 3 or more years of college			
	Aged 22-64	Aged 22-34	Aged 35-44	Aged 45-64
Total, prof., tech., & kin.	64.9	71.7	65.9	58.5
Nurses, professional	29.7	43.6	31.1	16.6
Teachers, elem. & sec.	91.6	92.9	93.7	89.2
All other prof., tech.	48.9	55.4	55.6	39.8

Note: The sums of components may not equal totals because of rounding.

Unfortunately, the tabulations do not provide field of college major for the nurses, but they are presumably responsible for the high incidence of women in the "health sciences" among those in the "all other"

category of professional workers. For the large majority of "teachers", college training was in the field of "education", as one would expect (Table 13).

Among professional women who had completed less than three years of college, adequate data are available only for the nurses, whose training, again as one would expect, is overwhelmingly in the field of professional nursing. Of the 385,000 women with less than three years of college who reported themselves as "nurses, professional", 290,000 reported training in this occupation. (Table 14) <sup>9/</sup>

Table 13

Experienced Civilian Labor Force in Selected Professional Occupations  
by Major Field of College Study: Women Aged 22-64 Who Had Completed  
3 or More Years of College, April 1963

Major field of college study	Occupation		
	Prof., tech. & kin. wkrs.	Teachers, elem. & sec.	All other prof.
Total - No. (in 1000s)	1,852	1,208	644
Percent	100.0	100.0	100.0
Biological science	3.6	2.6	5.6
Business	2.5	2.6	2.3
Education	54.9	75.7	15.8
Health sciences	11.7	0.9	32.1
Humanities	13.2	9.8	19.9
Physical sciences	1.0	0.6	1.9
Social sciences	6.2	4.6	9.0
All other	5.7	2.5	12.0
Not reported	1.1	0.8	1.7

Note: The sums of components may not equal totals because of rounding.

#### Managers, officials, and proprietors - Women

Only 144,000 of the over one million women in this major group had completed three or more years of college. Over a fourth of these had "education" as their college major, another fifth had been in the "humanities", and only 16 percent had a "business" major (Appendix

<sup>9/</sup>Since the number of women who work as professional nurses without such formal training must be very small, a part at least of the untrained group probably represent reporting or coding errors, always a problem with nurses in household surveys. However, the "untrained" are highly concentrated in the oldest age group and it is conceivable that some of these may have gained sufficient experience to work at the professional level in a noninstitutional setting.

Table 14

Occupation or Field Studied in Training Programs by Experienced  
Civilian Labor Force in Selected Professional Occupations: Women  
Aged 22-64 Who Had Completed Less Than 3 Years of College, April 1963  
(in thousands)

A. Nurses, professional	All women with training		Women with training in only one skill		B. All other professional and technical		All women with training in only one skill	
	Occupation or field studied	No.	Percent	No.	Percent	Occupation or field studied	No.	Percent
	Total	330	100.0	257	100.0	Total	347	100.0
	Nurse, professional	290	86.4	222	86.4	Business & comm.	93	20.9
	Nurse, practical	27	8.6	22	8.6	Stenographer	45	8.7
	Secretary	4	---	---	---	Secretary	39	7.2
	Stenographer	11	---	---	---	Typist	16	3.4
	Typist	2	---	---	---	Office mach. op.	3	0.8
	Business & comm.	40	---	---	---	Telephone op.	5	---
	Home economics	17	---	---	---	Technician, med. & dent.	30	8.0
	All other	7	1.9	5	1.9	Nurse, professional	18	5.7
	Not reported	11	3.1	8	3.1	Nurse, practical	10	1.5
						Home economics	28	6.1
						Dressmaker	11	2.3
						Hairdresser & cosm.	2	---
						All other	149	34.2
						Not reported	12	1.9

Note: see Explanatory Note on p. 3



Table 4). Although this proportion is almost twice as great as the percent of all college-trained women with a "business" major in the labor force, the numbers involved are very small and it cannot be said that the field of study is yet making a significant contribution to managerial level activities among women.

Slightly over half of women "managers, officials, and proprietors" with less than three years of college had had some formal occupational training. About a third of these had "business or commercial" training (Appendix Table 8). Among women with formal training in only one skill, over 70 percent had such training in a "business or commercial" course or in one of the specified clerical skills; but over 60 percent of the comparable group of women in all occupations combined had this type of training and in the absence of any additional information on the type of work performed by the "managers, officials, and proprietors" it is difficult, as it was for the men, to interpret these data.

#### Clerical and kindred workers - Women

Over 400,000 women clerical workers had completed three or more years of college and, although they constitute only 7 percent of women in this occupation group, they represent, as Table 2 has shown, some 16 percent of all college-trained women in the experienced labor force. About a third of these women had a "business" major in college, a proportion very much higher than among college-trained women in any other occupation group. Most of the remainder had a major in either "education" or the "humanities", the major fields of study for all women (Appendix Table 4).

As noted above, among persons with less than three years of college, women clerical workers had the highest rates of formal occupational training appearing for any occupation group. In five of the seven specific occupations for which there are data, over 70 percent have training, with only "cashiers" and "telephone operators" falling below the 50 percent level (Appendix Table 6).

Table 15 presents data on occupation or field of training for trained women in the seven occupations and for the residual category of "all other clerical workers". For each occupation the training fields are arranged in a rough approximation of their assumed relevance to the occupation. For the residual, training within the clerical field is arranged in order of magnitude. For reasons noted previously, discussion of this table will focus primarily on women with training in one skill or field only.

The highest rates of training in this group occur among "secretaries" (85 percent), "stenographers" (95 percent), and "typists" (89 percent). For all three, this training was almost exclusively either directly in one of the three occupations or in a general "business or commercial" course. However, there is an interesting difference between the

Table 15

Occupation or Field Studied in Training Programs by Experienced  
Civilian Labor Force in Selected Clerical and Kindred Occupations: Women  
Aged 22-64 Who Had Completed Less Than 3 Years of College, April 1963  
(in thousands)

A. Secretaries			B. Stenographers			
Occupation or field studied	All women with training	Women with training in only one skill		All women with training	Women with training in only one skill	
		No.	Percent		No.	Percent
Total	1,061	849	100.0	Total	123	100.0
Secretary	435	349	41.1	Stenographer	36	25.7
Stenographer	286	228	26.9	Secretary	53	45.5
Typist	16	7	0.8	Business & comm.	42	27.7
Business & comm.	346	224	26.4	Office mach. op.	2	--
Bookkeeper	3	2	0.2	Home economics	7	--
Office mach. op.	17	3	0.4	Nurse, practical	2	--
Telephone op.	3	--	--	All other	5	2.0
Merchandising	2	--	--	Not reported	3	--
Technician	10	5	0.6			
Nurse, professional	7	--	--			
Nurse, practical	9	2	0.2			
Home economics	38	3	0.4			
Dressmaker	5	--	--			
Hairdresser & cosm.	3	--	--			
All other	108	19	2.2			
Not reported	19	7	0.8			





Table 15 (continued)

G. Cashiers	Occupation or field studied	All women with training	Women with training in one skill only		H. All other clerical workers	Occupation or field studied	All women with training	Women with training in one skill only	
			No.	Percent				No.	Percent
Total		133	99	100.0		Total	1,229	962	100.0
Business & comm.		56	37	37.4		Business & comm.	600	441	45.8
Bookkeeper		14	7	7.1		Secretary	198	142	14.8
Office mach. op.		7	6	6.1		Stenographer	169	116	12.1
Secretary		12	7	7.1		Office mach. op.	64	19	2.0
Stenographer		8	5	5.1		Typist	41	26	2.7
Typist		2	--	--		Bookkeeper	39	31	3.2
Telephone op.		2	--	--		Telephone op.	34	22	2.3
Merchandising		2	2	2.0		Merchandising	3	2	0.2
Home economics		29	11	11.1		Home economics	96	33	3.4
Nurse, professional		2	--	--		Technician	10	5	0.5
Nurse, practical		3	2	2.0		Nurse, professional	24	12	1.2
Hairdresser & cosm.		2	--	--		Nurse, practical	18	7	0.7
All other		30	22	22.2		Dressmaker	10	5	0.5
Not reported		4	2	2.0		Hairdresser & cosm.	23	5	0.5
						All other	194	84	8.7
						Not reported	27	13	1.4

Note: See Explanatory Note on p. 3

secretaries and stenographers, on the one hand, and the typists, on the other. Over two-fifths of the first two had secretarial training as such, a quarter had stenographic training, and another quarter had the more general course. Among typists, in contrast, over half had a general "business and commercial" course.

About 70 percent of the "bookkeepers" and "office machine operators" had formal occupational training. For bookkeepers such training was largely in "business or commercial" courses. Although this was the leading field of training for office machine operators with training in only one skill also, 42 percent of all trained women in this occupation had training specifically as "office machine operator".

In the two clerical occupations with relatively low training rates, "telephone operators" (49 percent) and "cashiers" (44 percent), a somewhat greater scattering of fields of training exists, at least for those with training in only one skill. The figures are, of course, very small but the dispersion may be a further indication of the tendency noted for male craftsmen, namely, that where the proportion of persons with training is relatively low, the proportion with training whose training is not clearly related to the occupation may be relatively high.

Because formal occupational training for women with less than three years of college is so heavily dominated by the clerical skills, and particularly by "business and commercial" courses, it may be of interest to look at the distributions of training by occupation shown in Table 15 on a relative basis, in order to get better insight into the relationships between the two and to be sure that the concentration of clerical training for clerical occupations is not what one might expect on a purely random basis. In Table 16 the percent distributions of the previous table are shown as relatives of the distribution by field of training for all women in the experienced labor force with training in only one skill. The table should primarily be read across, by rows, since relative magnitudes within columns are affected by the different bases used. <sup>10/</sup> The six training-occupation-specific cells are underlined and it is clear that, except for some interchange between stenographers and secretaries, persons with a specific type of clerical training are much more likely to be in the occupation trained for than in any other. Several other interesting concentrations show up: women with training as "office machine operator" are relatively highly concentrated in "cashiers", as are women with training as "bookkeeper"; the concentration of women with training as "telephone operator" in the residual "all other clerical workers" may reflect the inclusion of "receptionists" in this category. It should be emphasized again that the numbers involved are too small for any such indications to

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<sup>10/</sup> That is, the index for "business and commercial" courses, for example, will have an upper limit much below that for "merchandising" course.

Table 16

Occupation or Field Studied by Experienced Civilian Labor Force in Selected Clerical Occupations Relative to Occupation or Field Studied by Experienced Civilian Labor Force in All Occupations: Women Aged 22-64 Who Had Completed Less Than 3 Years of College and Had Formal Occupational Training in One Skill Only, April 1963

Occupation or field studied	Occupation							
	Book-keepers	Cash-iers	Office mach.ops.	Secre-taries	Steno-graphers	Typists	Telephone operators	All other clerical workers
Business & comm.	186	131	145	93	97	184	87	161
Secretary	85	49	84	285	316	149	98	103
Stenographer	70	45	19	238	227	129	73	107
Bookkeeper	373	237	47	7	--	--	--	107
Typist	69	--	--	28	--	283	121	93
Office mach. op.	63	381	1,919	25	--	--	150	125
Telephone op.	50	--	--	--	--	--	3,525	288
Merchandising	100	500	--	--	--	--	--	50
Technician, med. & dent.	--	--	--	100	--	--	--	83
Nurse, professional	31	--	--	--	--	12	--	24
Nurse, practical	55	50	--	5	--	--	--	18
Home economics	19	152	68	5	--	--	33	47
Hairdresser & cosm.	--	--	88	--	--	12	49	10
Dressmaker	--	--	78	--	--	--	--	28
All other	50	188	12	19	17	19	109	74
Not reported	38	125	--	50	--	--	150	88

Note: Computed by dividing percentages shown in Table 15 by those shown in first column of section B, Appendix Table 8, and multiplying by 100.

be conclusive. The table is intended only to show a possible way of handling data that might reveal meaningful interrelationships with more extensive statistics.

Sales workers - Women

Very few women sales workers had completed three or more years of college and those that had had majors primarily in "education" and the "humanities" (Appendix Table 4).

None of the specific fields of formal training at the non-college level for which we have data can be thought of as directly related to sales work except "merchandising", a field in which very few women have as yet had training. As Table 17 shows, formal occupational training for women sales workers is scattered throughout the specified fields in a distribution that is not notably different from that for all trained women. There is a slight concentration of women with training as "bookkeeper" and "typist" among saleswomen and sales clerks, and for the residual category "all other sales workers", there is a concentration in "all other" fields. As noted in the discussion of men sales workers, the residual category includes such occupations as real estate and insurance sales persons and the high proportion with training in "all other" may reflect formal training in these specific fields. Appendix Table 6 shows that women in the residual "all other sales workers" category are much more likely to have had formal training, at least at the older ages, than are those classified as "salesmen and sales clerks".

Operatives and kindred workers - Women 11/

As Appendix Table 6 indicates, only a fourth of the 3.5 million women "operatives and kindred workers" reported any formal occupational training. The only one of the specified fields that can be considered directly related to an operative occupation is training as "dress-maker" and, although the proportion of women "dressmakers and seamstresses" and "sewers and stitchers, manufacturing" that have had such training is very considerably higher than the average for all women in the survey, the field includes only a small proportion of the women with any training in these two occupations and, of course, an even smaller proportion of all women in these occupations (Table 18).

Higher proportions of trained women in the operative occupations have had "all other" training than in most of the occupations discussed previously and such training may, of course, have been relevant to the occupation. Moreover, although the proportion of women operatives

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11/ The number of women "craftsmen, foremen, and kindred workers," and of women "farm workers" and "laborers," in the survey is too small to warrant discussion even in such a risk-taking report as the present one. Data for these groups are included in several of the appendix tables, however.



Table 17

Occupation or Field Studied in Training Programs by Experienced Civilian Labor Force in Sales Occupations: Women Aged 22-64 Who Had Completed Less Than 3 Years of College, April 1963

(In thousands)

Occupation or field studied	Occupation						Percent distribution of all women in experienced labor force with training in only one skill
	Saleswomen and sales clerks			All other sales workers			
	All women with training	Women with training in only one skill	Percent	All women with training	Women with training in only one skill	Percent	
	No.	No.	Percent	No.	No.	Percent	
Total	537	426	100.0	143	91	100.0	100.0
Business and comm.	170	119	27.9	41	26	28.6	28.5
Stenographer	77	58	13.6	30	12	13.2	11.3
Secretary	46	33	7.7	19	10	11.0	14.4
Typist	55	39	9.2	3	3	3.3	2.9
Home economics	103	41	9.6	18	2	2.2	7.3
Bookkeeper	40	24	5.6	8	6	6.6	3.0
Office mach. op.	16	7	1.6	--	--	--	1.6
Dressmaker	8	8	1.9	3	3	3.3	1.8
Hairdresser	16	7	1.6	7	3	3.3	4.9
Nurse, professional	3	2	0.5	2	--	--	5.1
Nurse, practical	19	16	3.8	2	2	2.2	4.0
Merchandising	10	8	1.9	7	--	--	0.4
Telephone op.	2	2	0.5	8	--	--	0.8
Technician, med.&den.	2	2	0.5	--	--	--	0.6
All other	84	55	12.9	56	24	26.4	11.8
Not reported	12	5	1.2	3	--	--	1.6

Note: See Explanatory Note on p. 3.

Table 18

Occupation or Field Studied in Training Programs by Experienced  
Civilian Labor Force in Selected Operative Occupations: Women  
Aged 22-64 Who Had Completed Less Than 3 Years of College, April 1963  
(In thousands)

Occupation or field studied	Occupation														
	Assemblers				Chr's. exam., insp.				Dressmakers, seamstrs.				Sewers, stitchers, mfg.		
	All women training with only one sk.	No.	Per-cent	All women training with only one sk.	All women training in women training with only one sk.	No.	Per-cent	All women training in women training with only one sk.	All women training in women training with only one sk.	No.	Per-cent	All women training in women training with only one sk.	All women training in women training with only one sk.	No.	Per-cent
Total	99	74	100.0	87	70	100.0	51	39	100.0	178	168	100.0	44	44	26.2
Dressmaker	2	--	--	3	3	4.3	14	9	23.1	44	44	26.2	30	25	14.9
Business & comm.	35	18	24.3	20	12	17.1	4	2	5.1	30	25	14.9	17	15	8.9
Stenographer	15	10	13.5	11	9	12.9	8	2	5.1	12	8	4.8	6	6	3.6
Secretary	2	2	2.7	5	4	5.7	2	2	5.1	7	7	4.2	--	--	--
Typist	5	5	6.8	10	5	7.1	--	--	--	--	--	--	--	--	--
Bookkeeper	3	3	4.1	--	--	--	--	--	--	--	--	--	--	--	--
Office mach. op.	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Telephone op.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Technician, med. & dent.	--	--	--	2	--	--	--	--	--	--	--	--	--	--	--
Nurse, professional	3	2	2.7	2	2	2.9	3	3	7.7	--	--	--	--	--	--
Nurse, practical	--	--	--	2	2	2.9	2	--	--	--	--	--	--	--	--
Hairdresser & cosm.	5	4	5.4	10	5	7.1	4	2	5.1	3	3	1.8	33	25	14.9
Home economics	30	14	18.9	7	9	12.9	15	11	28.2	35	35	20.8	2	--	--
All other	25	17	23.0	24	20	28.6	10	5	12.8	2	--	--	--	--	--
Not reported	--	--	--	--	--	--	3	2	5.1	--	--	--	--	--	--

Note: See Explanatory Note on p. 3

with training in one skill who had this training in one of the specified clerical categories is substantial, it is much lower than among the "white collar" nonprofessional occupations (Appendix Table 8). Still, it is difficult to avoid the conclusion that even among the small proportion of women operatives who had formal occupational training, this training was largely irrelevant to their present occupation.

#### Private household workers - Women

About a fifth of women in this occupation have had formal occupational training and almost a third of this group have had such training in "home economics" (Appendix Tables 6 and 8). Our data do not permit any analysis by color but one may safely assume that the great majority of women private household workers are Negro. The previous report on these data has indicated that almost all training in home economics is taken in high school. Therefore, this relatively high proportion with training in home economics may in fact be reflecting a characteristic of the type of secondary education taken by Negro women.

#### Service workers, except private household - Women

About 40 percent of women service workers (excluding private household) had formal occupational training but this proportion varies greatly among the four specific occupations for which we have data, from 88 percent for "hairdressers and cosmetologists" to 23 percent for "cooks".

Virtually all of the trained women hairdressers and cosmetologists have had their training in these fields (Table 19). For the other highly trained category in this major group, "practical nurses", 77 percent of the women with training in only one skill had their training in this field and another 11 percent have had training as "professional nurse". <sup>12/</sup>

The third category in the group, "attendants, hospital and other institution", of whom 46 percent have had training, includes relatively high proportions with training in the two nursing fields and a fairly high proportion with "all other", possibly relevant, training.

The small number of "cooks" (which excludes those in private households) with training shows some concentration in "home economics" as the field of training for women with only one skill.

#### Specific occupational training

It may be of interest to conclude this section with a table that

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<sup>12/</sup> The reader is reminded that training may not have been completed.

Table 19

Occupation or Field Studied in Training Programs by Experienced  
Civilian Labor Force in Selected Service Occupations: Women  
Aged 22-64 Who Had Completed Less Than 3 Years of College, April 1963

(In thousands)							
A. Hairdressers and cosmetologists		B. Nurses, practical					
Occupation or field studied	All women with training	Women with training in only one skill		Occupation or field studied	All women with training	Women with training in only one skill	
		No.	Per-cent			No.	Per-cent
Total	277	208	100.0	Total	195	146	100.0
Hairdresser & cosm.	260	198	95.2	Nurse, practical	148	112	76.7
Typist	5	2	1.0	Nurse, professional	22	16	11.0
Bookkeeper	4	--	--	Secretary	5	2	1.4
Office mach. op.	8	--	--	Stenographer	3	--	--
Stenographer	8	--	--	Business & comm.	28	2	1.4
Secretary	3	--	--	Hairdresser & cosm.	13	5	3.4
Business & comm.	26	--	--	Dressmaker	7	--	--
Nurse, practical	2	2	1.0	Home economics	14	--	--
Dressmaker	5	--	--	All other	21	8	5.5
Home economics	24	--	--	Not reported	1	1	0.7
All other	24	3	1.4				
Not reported	5	3	1.4				

Table 19 (continued)

C. Attendants, hospital & other institution	All women with training		Women with training in only one skill	D. Cooks (except private household)		Women with training in only one skill
	No.	Per-cent		All women with training	No.	Per-cent
Occupation or field studied						
Total	166	128	100.0	Total	107	99
Nurse, practical	34	29	22.7	Home economics	23	18
Nurse, professional	29	21	16.4	Business & comm.	17	12
Technician, med. & dent.	2	2	1.6	Secretary	5	5
Business & comm.	23	10	7.8	Stenographer	5	3
Secretary	5	5	3.9	Typist	5	5
Stenographer	7	3	2.3	Bookkeeper	7	7
Typist	8	6	4.7	Telephone op.	2	2
Bookkeeper	6	--	--			
Office mach. op.	3	--	--	Nurse, professional	3	2
Home economics	18	2	1.6	Nurse, practical	4	4
Hairdresser & cosm.	13	8	6.3	Hairdresser & cosm.	6	6
All other	59	38	29.7	All other	39	34
Not reported	5	5	3.9			

Note: See Explanatory Note on p. 3.

summarizes the specific occupation-specific training relationship for the 31 occupations in which we have such data for persons in the survey completing less than three years of college. Table 20 shows the frequencies and proportions of men and women in each of these occupations who had training in their specific fields. For only three occupations, "barbers", "nurses, professional", and "hairstylists and cosmetologists", do over 75 percent of the group have training specific to their occupation; for another five, between 50 and 60 percent have such training. At the other extreme, eleven of the categories have less than 25 percent with such training.

No general pattern emerges from this table and, indeed, its general value is limited since, as several of the "training" tables in this section have indicated, formal training in a closely related occupation or field can make a major contribution to the work force in a given occupation. The three occupations with very high training rates may, in fact, represent rather untypical occupations in this regard, in that there are no occupations closely related to them from which training and/or experience can be transferred.

Table 20

Experienced Civilian Labor Force in Selected Occupations Who Had Formal Occupational Training in the Specific Occupation Pursued: Men and Women Aged 22-64 Who Had Completed Less Than 3 Years of College, April 1963  
(In thousands)

Sex and occupation	Total	With training specific to occupation	
		Number	Percent of total
<u>Men</u>			
Accountants & auds.	195	49	25.1
Draftsmen	214	112	52.3
Technicians, electronic	67	39	58.2
Tech., other. eng. & phy. sci.	124	2	1.6
Bookkeepers	90	20	22.2
Brickmasons	160	51	31.9
Carpenters	829	153	18.5
Compositors & typesetters	97	43	44.3
Electricians	363	188	51.8
Linemen & serv., tel. & tel.	317	93	29.3
Machinists	384	137	35.7
Mechs. & repairmen, air	114	55	48.2
Mechs. & rep. auto	698	163	23.4
Mechs. & rep., radio & TV	97	54	55.7
Painters	416	84	20.2
Plumbers & pipefitters	300	139	46.3
Tinsmiths, coppersmiths, sheet metal wkrs.	118	49	41.5
Welders	363	126	34.7
Barbers	14	111	78.2
Farmers & farm laborers	2,535	305	12.0
<u>Women</u>			
Nurses, professional	385	290	75.3
Bookkeepers	869	83	9.6
Office machine ops.	264	79	29.9
Secretaries	1,247	435	34.9
Stenographers	130	36	27.7
Telephone operators	245	42	17.1
Typists	442	45	10.2
Dressmakers & seamstr.	161	14	8.7
Sewers & stitchers, mfg.	703	44	6.3
Hairdressers & cosm.	316	260	82.3
Practical nurses	254	148	58.3

### III. THE OCCUPATIONAL AFFILIATION OF PERSONS WITH SELECTED TYPES OF FORMAL TRAINING

#### Introduction

Discussion in the previous section has concentrated on the education and training background of persons in specific major occupation groups and in selected occupations. We turn now to looking at the other side of the coin, that is, to examining the occupational distribution of members of the labor force with specific types of educational or training backgrounds. For persons whose major concern is with educational planning, either academic or vocational, these distributions are probably of greater interest than those presented in Section II. They indicate, in effect, the result of past educational patterns and thereby give a clue to the possible outcome of present or future modifications of these patterns.

This having been said, it is necessary to add that the data in hand are not entirely adequate to the task. A number of limitations could be enumerated, quite apart from the fact that the size of the sample restricts severely both the number of occupations and the number of fields of college major or of formal training that can be identified. For those who had completed three or more years of college we have only the major field in the last year of college or professional school and, as will be instanced below, this can be supplementary to the basic field of the individual's education rather than forming the core itself. For those who did not complete three years of college, on the other hand, we have all formal occupational training taken but we do not have, for a given individual, the combinations of specific types of training taken and our ability to estimate what proportion of the trained work force is utilizing its training, by this criterion, is therefore hampered. <sup>13/</sup> Furthermore, for neither the college nor the non-college group do we know whether training was completed and while completion is not essential in all cases, for some fields it obviously is. Other limitations, some of which will be noted in passing below, could be listed. In fact, one of the purposes of the present report is to indicate what further refinements in concepts and procedures might be introduced in future surveys.

Nevertheless, with all its limitations, the present body of material probably represents the first attempt to collect comprehensive data on the subject and, though the substantive findings are certainly open to future verification, it is hoped that they will suggest ways in which more precise measurements may be made.

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<sup>13/</sup> The earlier report presented data on whether persons with specific types of training thought they had ever used this training.



The college group will be discussed first.

Major field of college study - men who had completed three or more years of college:

Appendix Table 9 shows that the supply of male workers with three or more years of college distributes itself quite differently among the identified occupations according to field of college major. Among those with a major in agriculture only 31 percent are in professional occupations, primarily as "natural scientists" or "teachers", another 32 percent are "managers, officials, or proprietors" (excluding farm), and 16 percent are farm workers (including farmers) - by far the largest proportion of the college-trained in this occupation group but still a relatively small number of the agriculture majors.

For men with a business major also, less than a third (29 percent) are in professional occupations, with the majority of these being "accountants and auditors", while 35 percent are in managerial occupations. The third leading group in the case of men with a business major are the "sales workers" who include 18 percent of the total.

About 45 percent of those majoring in the social sciences are professional workers, with concentrations in teaching and as "recreation, group, and social workers". Another fifth are managerial workers and 11 percent are sales workers.

For the remaining specified fields of college major well over half, in each case, are in professional occupations. Among those with a major in the biological sciences, 22 percent are natural scientists or physicians, dentists, optometrists and veterinarians, another 18 percent are teachers, 7 percent are technicians of various kinds, and 19 percent are managerial workers. A fifth of the physical science majors are engineers or natural scientists, 12 percent are teachers, and 5 percent are technicians. Education majors are highly concentrated in teaching, and 50 percent of engineering majors are engineers, with another fifth in "managers, officials, and proprietors", and 8 percent in "craftsmen, foremen, and kindred workers".

The two major fields of college study with the highest concentrations in professional occupations are the humanities and the health sciences. Three-fifths of this latter group are in the medical professions and none of the other specified occupations engages any notable proportion.

Table 21 presents age data for the two largest major fields of college study for men, business and engineering, and some interesting inferences may tentatively be drawn from these. The wider occupational dispersion of the youngest group of business majors may reflect a

Table 21

Experienced Civilian Labor Force with Business or Engineering as  
Major Field of College Study, by Occupation and Age: Men Aged  
22-64 Who Had Completed 3 or More Years of College, April 1963

Occupation	Field of college major and age					
	Business			Engineering		
	22-34	35-44	45-64	22-34	35-44	45-64
Total number (in 1000s)	531	387	402	413	371	313
Percent	100.0	100.0	100.0	100.0	100.0	100.0
Prof., tech. & kin. wkrs.	29.6	26.6	29.6	74.8	64.2	47.6
Accountants & aud.	14.7	15.0	17.4	-	-	-
Engineers	4.7	2.3	0.7	58.4	52.8	35.5
Lawyers & judges	-	-	0.5	-	-	0.6
Natural scientists	-	-	-	-	-	0.6
Physicians, dent. etc.	-	-	-	-	-	-
Rec., group, soc. wkrs.	-	-	1.0	-	-	-
Social scientists	0.4	1.3	0.7	-	-	-
Teachers, elem. & sec.	1.3	1.0	0.5	1.0	0.5	-
College pres. & profs.	0.4	1.3	-	0.5	1.3	3.2
Technicians	-	0.5	-	4.8	2.4	0.6
All other	8.3	5.4	8.7	10.4	7.0	7.0
Managers, offs., prps.	26.4	41.9	39.1	9.4	22.1	32.9
Clerical & kin. wkrs.	14.1	7.0	6.0	2.9	0.5	7.7
Sales workers	18.6	18.1	15.9	3.9	1.9	2.9
Craftsmen, forem. & kin.	5.1	2.6	4.0	6.5	9.4	7.0
Operatives & kin. wkrs.	3.4	0.8	1.2	0.7	1.3	1.0
Service wkrs.	1.7	1.0	1.2	1.2	0.5	-
Farmers & farm labs.	0.6	0.8	1.2	0.5	0.5	1.0
Laborers, exc. farm & mine	0.6	0.8	1.7	-	-	-

Note: The sums of components may not equal totals because of rounding.

"starting from the bottom" pattern of work experience for some managerial workers, with the proportion in clerical work being particularly relevant here. The slight concentration in "engineers" may be a further reflection of the tendency, noted previously, for engineers to return for post-graduate training in "business". <sup>14/</sup>

Much more dramatic than the differences among the age groups for business majors are the differences for engineering majors. The decline from 58 to 36 percent in the proportion of men with engineering training who are engineers, and the concomitant rise from 9 to 33 percent in the proportion who are managerial workers, seems convincing evidence of the effects of occupational mobility on the career patterns of men trained as engineers. If the shifts implied here are a continuing process, it is clear that to keep the supply of college-trained engineers at a constant level requires the training of many more engineers than replacement of those who die or retire from the labor force might indicate.

Major field of college study - women who had completed three or more years of college:

As comparison of Appendix Tables 9 and 10 indicates, college-trained women in the experienced labor force are much more likely to be professional workers than are college-trained men. This is largely, though not entirely, owing to the importance of teaching as an occupation for college-trained women, and to the relatively few women with a college background who are in managerial activities. Teaching is an important activity not only for women who majored in education but also for majors in the biological and social sciences and in the humanities. <sup>15/</sup>

Outside the professional occupations, the only notable concentration of college-trained women is in "clerical and kindred workers". About three-fifths of women "business" majors are in this group and about a fifth each of those who majored in the humanities or social sciences.

Occupation or field of formal occupational training - men who had completed less than three years of college:

Appendix Table 11 presents the distributions for men trained in each of the specific occupations or fields for which we have data, by major occupation group. The text tables extend these distributions to show the specific occupations pursued by those with specific types of training. These tables include all men with training and therefore a given individual will appear in the data for more than one field if he has

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<sup>14/</sup> The reader is reminded that it is most recent major field of study that is tabulated here.

<sup>15/</sup> The high proportion of Health Science majors in "all other professional occupations" undoubtedly reflects the inclusion in this residual of "nurses, professional", the second most important professional occupation for women.

taken formal occupational training of more than one type. The occupational distribution of all men with training is shown in the last column of Table 24 for comparative purposes. In each instance where we have occupation-specific training, the cell in which men pursuing that specific occupation appear has been underlined.

Table 22 presents the distributions for the seven so-called "white collar" fields for which we have data. Most of these men are in white collar occupations but the proportions in the specific occupation for which they were trained are relatively low. Thus, although 81 percent of those trained as accountant and auditor are white collar workers, only 19 percent are accountants and auditors or bookkeepers, the two most closely related occupations. Another 26 percent are "managers, officials, and proprietors", in which capacity they may be utilizing their training. Among those trained as draftsman, 15 percent are working in this occupation and a fairly high proportion (25 percent) are "craftsmen, foremen, and kindred workers", with above average concentrations in "carpenters", "machinists", and "mechanics and repairmen, auto", for all of which draftsman training may be useful.

Less than half (43 percent) of those trained as technician, electronic are white collar workers, the only one of the fields identified in Table 22 for which this is true, 16/ and over a third are "craftsmen", notably "electricians", "linemen and servicemen", and "mechanics and repairmen, radio and TV". The proportion of white collar workers is higher (57 percent) for the other technician category, technician, other engineering and physical sciences, but the proportion working directly in their field of training is very low.

Almost three-fifths of those trained as bookkeeper are white collar workers but here, even more than among the accountant group, "managers, officials, and proprietors" include the greatest proportion. The concentration of those with merchandising training among "salesmen and sales clerks" is seven times as great as the average 17/ and a high proportion are also "managers, officials, and proprietors".

Fifty-six percent of men who have taken a general business or commercial course are white collar workers and they are scattered fairly evenly among all the nonprofessional white collar occupations identified.

In Table 23, training data for the 12 craft occupations available are presented and a number of notable differences between the distributions shown here and those shown in Table 22 are immediately apparent. For seven of the 12 training fields the proportion presently in white

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16/ The proportion, however, is still above that for all trained men, among whom 37 percent are white collar workers.

17/ That is, 29 percent of men with training in this field are salesmen and sales clerks, whereas only 4 percent of all trained men are in this occupation category.

Table 22

Percent Distribution of Experienced Civilian Labor Force with Formal Occupational Training in Selected White Collar Occupations and Fields, by Present or Last Occupation: Men Aged 22-64 Who Had Completed Less than 3 years of College, April 1963

Occupation	Occupation or field studied						
	Accountant & aud.	Drafts- man	Techni- cian, electronic	Tech., oth. eng. & ph. sci.	Book- keeper	Mer- chand- sing	Busi- ness & comm.
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Acc'ts & aud.	13.3	---	0.4	---	1.9	---	1.5
Draftsmen	0.5	15.0	1.0	3.3	0.5	1.2	0.4
Technicians, electronic	---	---	5.4	---	---	---	---
Tech., oth. eng. & physic	0.5	0.7	2.4	3.3	0.5	---	0.6
All other profesnl.	7.0	10.5	10.3	16.7	4.1	2.9	4.7
Managers, offs, props.	26.3	12.6	10.2	18.3	29.4	23.5	21.8
Bookkeepers	5.7	---	0.3	---	5.5	1.2	0.7
All other clerical	21.1	7.4	8.1	11.7	9.6	9.4	15.5
Salesmen & sales clk.	6.5	3.5	3.6	---	4.4	29.4	7.8
All other sales wkrs.	0.5	0.8	1.1	3.3	1.9	4.1	3.2
Brickmasons	1.4	0.7	---	---	0.5	---	0.2
Carpenters	---	3.6	1.7	---	3.6	---	1.4
Compositors & typesetters	---	---	---	---	1.4	---	0.6
Electricians	---	0.9	5.1	---	0.5	---	0.9
Linemen & servicemen	---	0.9	4.6	---	---	1.2	1.2
Machinists	---	2.9	0.4	---	---	---	0.3
Mech. & rep. air.	0.5	1.2	1.1	---	---	---	0.1
Mech. & rep. auto	---	3.6	1.0	3.3	2.2	1.8	1.7
Mech. & rep., radio, TV	---	---	2.6	---	---	---	0.3
Painters	---	0.5	0.6	3.3	2.2	---	0.6
Plumbers & pipefitters	---	0.3	0.3	3.3	---	---	0.4
Tinsmiths, coppersmiths, sheet metal wkrs.	---	0.3	0.6	---	0.5	---	0.4
All other craftsmen, foremen	6.0	10.2	17.5	8.3	6.6	9.4	10.7

Table 22 (continued)

Occupation	Occupation or field studied						
	Accountant & aud.	Drafts- man	Techni- cian, electronic	Tech. oth. eng. & ph. sci.	Book- keeper	Mer- chandi- sing	Busi- ness & comm.
Assemblers	----	1.6	1.8	----	0.5	----	0.9
Checkers, exam., insp.	0.5	0.3	2.6	11.7	0.8	2.4	0.4
Welders	----	1.2	----	----	0.3	----	0.7
All other operat. & knd.	7.3	12.1	11.7	11.7	15.9	8.2	11.2
Barbers	----	0.3	----	----	----	----	0.1
All other serv. wkrs.	2.2	5.4	1.9	6.7	4.1	2.9	5.9
Farmers & farm labs.	----	1.3	1.1	----	0.8	----	2.7
Labs., exc. fm. & mine	0.5	2.5	3.1	----	1.9	2.9	2.8

Note: See explanatory note on p. 3.

The sums of components may not equal totals because of rounding.

Table 23

Percent Distribution of Experienced Civilian Labor Force with Formal Occupational Training in Selected Craft Occupations, by Present or Last Occupation: Men Aged 22-64 Who had Completed Less Than 3 years of College, April 1963

Occupation	Occupation or field studied										
	Brick-mason	Carpenter	Comp. & Typesetter	Electrician	Lineman	Machinist	Mech. & Repairmen Air, Auto, Radio-TV	Painter	Plumber	Tins. & coppers	
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Acc'ts. & aud.	-	0.4	-	0.3	0.9	0.3	0.3	-	-	-	
Draftsmen	1.0	0.6	-	0.9	-	1.1	1.8	0.8	-	2.9	
Technicians, elec.	-	-	-	0.5	-	-	0.7	1.1	0.7	-	
Tech., oth. eng. & phy, sci.	-	0.6	1.9	0.3	-	-	1.0	0.1	-	-	
All other prof.	-	1.0	1.3	4.4	3.3	4.4	7.8	2.9	1.3	5.4	
Mgr., offs., props.	12.3	9.5	6.5	10.4	4.7	13.3	13.0	12.1	14.8	11.6	
Bookkeepers	-	-	-	-	-	-	0.6	0.1	0.3	-	
All oth. clerical	10.8	4.3	4.5	4.5	4.7	6.2	6.3	6.2	8.5	2.9	
Salesmn. & sls. clks	2.0	2.8	4.5	2.2	-	1.3	3.7	2.5	3.9	-	
All oth. sales wkrs.	1.0	1.8	4.5	1.2	2.8	-	0.6	0.5	-	0.8	
Brickmasons	25.1	0.4	-	0.3	-	0.3	-	0.4	0.6	-	
Carpenters	-	31.0	-	0.6	0.9	1.3	1.9	0.8	1.6	2.9	
Compos. & typs.	-	0.6	27.9	0.3	-	0.3	-	0.9	-	0.8	
Electricians	-	-	1.3	24.1	1.4	-	0.7	1.1	0.5	-	
Linemen & serv.	-	-	-	3.5	44.1	0.6	1.6	0.6	4.0	0.8	
Machinists	4.9	-	-	1.2	0.9	22.2	1.3	1.4	0.5	-	
Mech. & rep., air	-	-	1.3	0.6	-	1.6	8.1	1.4	0.3	-	
Mech. & rep., auto	5.4	1.8	-	1.2	0.9	0.8	3.7	10.4	0.8	0.8	
Mech. & rep., radio	-	-	-	1.5	-	-	0.6	2.7	0.7	-	
Painters	-	-	-	1.5	-	0.3	8.4	56.4	0.7	-	
Plumbers	-	-	-	0.6	2.4	1.1	0.9	49.5	-	0.8	

Table 23 (con't.)

Occupation	Occupation or field studied											
	Brick- mason	Carpen- ter	Comp. & typesetter	Elec- trician	Line- man	Mech- inist		Mech. & repairmen		Paint- er	Plumb- er	Tins. & cops.
						Air	Auto Radio-TV	Air	Auto Radio-TV			
Tinsms. & cops.	-	-	-	0.3	0.9	-	-	0.3	3.1	-	-	20.2
All oth. crft., fore.	12.8	10.8	25.3	15.2	7.1	16.7	16.1	14.9	14.4	8.1	10.3	21.1
Assemblers	1.0	0.6	-	0.5	-	0.5	1.3	0.6	0.6	2.0	1.1	-
Ckrs., exam.												
insp.	1.0	0.4	-	0.4	0.9	0.8	1.0	0.8	3.0	-	-	0.8
Welders	-	1.4	-	0.3	0.9	1.5	0.3	1.5	-	-	0.7	-
All oth. ops.	10.3	18.7	9.1	14.6	9.0	15.7	17.4	22.6	13.2	10.7	8.9	15.7
Barbers	-	-	-	-	-	-	-	0.1	-	-	-	-
All oth. serv.wkrs	5.9	4.3	9.1	4.4	6.6	4.2	2.9	6.7	5.9	1.3	3.6	3.7
Farmers & farm labs.	3.9	3.4	-	1.3	2.4	1.5	3.2	2.8	2.5	-	3.2	2.5
Labs. exc. fm.& mine	3.4	5.3	3.2	3.5	5.2	3.7	2.8	6.8	5.9	-	2.8	2.9

Note: See Explanatory Note on p. 3

The sums of components may not equal totals because of rounding.



collar occupations ranges from about 20 to 25 percent, as compared to over 50 percent for most of the fields shown in Table 22, and for three others the proportion is less than a fifth. The two fields in which the proportion is higher than a fourth, mechanic and repairman, airplane and mechanic and repairman, radio and TV both have unique aspects in the characteristics of their training situations that may help explain why their proportion of white collar workers approaches that for all men with formal occupational training. The earlier report on this survey <sup>18/</sup> has shown that 61 percent of all training programs in "mechanic and repairman, airplane" were taken while the worker was in the armed forces, a percentage more than twice as high as that for any other field studied in the present set of data. The specialized needs of the armed forces clearly call for training that may or may not have relevance for the occupation pursued in civilian life and one might expect the civilian occupational distribution of men with such training to approach a random distribution.

The unique feature in training as "mechanic and repairman, radio and TV" is the importance of correspondence schools as the training institution. The earlier report shows 30 percent of all training programs in this field were correspondence courses, a proportion again substantially higher than that characteristic of any of the fields we are dealing with here, except "accountant and auditor". Although it is impossible to interpret the meaning of this without more information than we have now, one may tentatively put forth the hypothesis that such training is taken, to a greater extent than other types, in the pursuit of a hobby rather than an occupation, and, therefore, again may be expected to be more randomly distributed. <sup>19/</sup>

A second notable difference between Tables 22 and 23 lies in the proportion of workers with training in a specific occupation who are in that occupation. Except for the three "mechanic and repairman" occupations, this proportion is very substantially higher for those with training in a "craft" occupation than for those with "white collar" training, ranging from 20 percent for tinsmith, coppersmith, and sheet metal worker to 56 percent for painter. For the two fields with the highest proportions in the specific occupation for which trained, painter and plumber and pipefitter, the earlier report cited above has shown that training was by apprenticeship to a considerably greater extent than was characteristics of most other areas of training (70 percent for "painter" and 65 percent for "plumber and pipefitter"). For the third ranking of these proportions, 44 percent of those with training as lineman and serviceman, telegraph, telephone,

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<sup>18/</sup> Manpower/Automation Research Monograph No. 2, op. cit., Table 4.

<sup>19/</sup> The armed forces were also an important training institution for this field, accounting for 25 percent of all training programs.

and power working in that occupation, the role of apprenticeship is considerably less: it accounts for 37 percent of all training programs. For this group of trained workers, however, the role played by "company schools" (26 percent of all training programs taken) is much greater than the average.

Other such relationships between the institutional setting in which training takes place and the proportion of trained workers who pursue the specific occupation for which they were trained could be noted, and, indeed, similar relationships between other characteristics of training, such as its duration, and the data of Tables 22 - 24 could undoubtedly be observed. In the present instance, however, the importance of such relationships can only be inferred and perhaps those already mentioned will suffice to indicate the value of collecting data for larger samples which would permit further cross-tabulations, for example, occupation-specific - training-specific - institution-specific tabulations. Even more helpful for those interested in educational planning would be to have such tabulations by age, and over time.

Table 24 presents data for the remaining fields identified for men and for the residual category all other fields. The purpose of this latter distribution is to give some rough indication of the bias in the general picture of training presented here. As section A of Appendix Table 7 shows, some 49 percent of all training programs taken by men in the survey are not identified. Table 24 suggests that their distribution is fairly widespread throughout the occupational structure.

With regard to the identified fields in Table 24, those with training as welder present a pattern much like that characteristic of the craft fields listed in Table 23, that is, only 16 percent are in white collar occupations and 21 percent are in the specific occupation for which they were trained; there is also a relatively high concentration among "mechanics and repairman, auto", an occupation in which this skill may be utilized.

Almost half of those trained as barber are in that occupation and relatively few are in white collar occupations. Among those who have taken training in agriculture, about a fourth are "farmers and farm laborers". In contrast, those who have taken a general trades course are distributed almost randomly among the identified occupations (when compared with the last column of Table 24). This somewhat surprising finding may be associated with the fact that men who had taken a general trades course were somewhat more likely than the average to have had formal occupational training in another field in addition, <sup>20</sup> but it is still rather startling to find one-third of them in white collar occupations.

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<sup>20/</sup> That is, of the 1,096,000 general trades courses taken by men in the survey, only 424,000 (39 percent) were taken by men who had this as their sole field of formal training; but of the entire number of 21,578,000 training courses taken, 47 percent were taken by men who had training in only one occupation or field.

Table 24

Percent Distribution of Experienced Civilian Labor Force with Formal Occupational Training in Miscellaneous Occupations and Fields by Present or Last Occupation: Men Aged 22-64 Who Had Completed Less than 3 years of College, April 1963

Occupation	Occupation or field studied				
	Welder	General trades	Barber	Agriculture	All other fields
Total	100.0	100.0	100.0	100.0	100.0
Acc'ts. and auds.	-	-	-	-	0.8
Draftsmen	0.5	0.9	-	0.2	1.2
Technicians, elec.	0.3	0.2	-	0.2	0.4
Tech., oth. eng. & ph. sci.	-	0.2	0.9	0.4	0.4
All other profes.	0.3	5.3	1.7	2.0	5.1
Mgrs., offs., props.	8.1	12.6	7.4	13.2	14.9
Bookkeepers	-	0.2	-	0.2	0.4
All other clerical	1.7	6.9	4.3	5.8	8.1
Salesmen & sales clks.	4.5	6.3	0.9	2.9	4.0
All other sales wkrs.	0.8	1.1	-	0.9	1.6
Brickmasons	0.3	0.5	-	0.3	0.6
Carpenters	1.5	3.1	-	1.8	2.2
Compos. & typesetters	-	0.2	-	0.9	0.5
Electricians	1.5	0.9	-	1.3	1.9
Linemen & servicemen	-	1.9	-	0.9	1.4
Machinists	0.5	3.7	-	0.7	1.6
Mech. & rep., air.	0.3	0.8	-	0.2	0.6
Mech. & rep., auto	6.6	3.4	2.2	1.6	2.3
Mech. & rep., radio TV	-	-	-	-	0.6
Painters	0.8	1.6	-	0.7	1.2
Plumbers	1.5	0.3	-	0.6	1.2
Tinsm. & cops.	0.8	0.4	-	-	0.7
All oth. craft., fore.	15.9	17.3	4.8	9.7	14.4

Table 24 (Continued)

Occupation	Occupation or field studied				All other fields	All fields
	Welder	General trades	Barber	Agriculture		
Assemblers	3.5	1.1	---	1.1	0.6	0.8
Chrs., exam., insp.	0.3	2.0	---	1.0	0.8	0.9
Welders	20.9	0.9	---	0.4	0.7	1.3
All oth. ops.	<u>15.6</u>	18.8	13.5	19.7	14.3	15.9
Barbers	0.3	0.2	<u>48.3</u>	0.2	0.3	0.8
All oth. serv. wks.	5.3	3.6	9.1	3.2	9.1	6.1
Farmers & farm labs.	3.3	2.6	2.2	<u>24.0</u>	2.0	4.0
Labs, exc. fm. & mine	5.0	3.4	4.8	6.1	3.4	4.4

Note: See Explanatory Note on p. 3.

The sums of components may not equal totals because of rounding.

Occupation or field of formal occupational training - women who had completed less than three years of college:

Appendix Table 12 and text Tables 25 and 26 present the occupational distributions for women with training in the specified fields. We are, of course, dealing for the most part with an entirely different set of training fields and occupations here from that in the comparable distributions for men. Moreover, the proportion of women who have had training in more than one occupation or field is considerably lower than that for men (one-fifth as compared to one-third) so that the amount of "overlap" in the columns is less. Nevertheless, the general impression given by Tables 25 and 26 is that women, or at least those in the labor force, probably tend to utilize their training in the specific occupation for which they were trained, or in a closely related occupation, to a greater extent than men.

Of those with training as nurse, professional, 62 percent are practicing their profession and another 11 percent are "practical nurses" or "attendants in hospitals or other institutions". <sup>21/</sup> Two-fifths of those trained as technician, medical and dental are in that occupation and the high proportion who are secretaries may include secretaries in physicians' or dentists' offices using their technician training. Thirty percent of those with bookkeeper training are bookkeepers or cashiers but here the proportion of those outside the white collar groups becomes somewhat higher than it is for the other training fields (except typist) listed on Table 25.

Women with training as office machine operator are highly concentrated in clerical work. Almost three-fourths are in the major group "clerical and kindred workers", the largest proportion for any of the cells in Appendix Tables 11 and 12. It is difficult to interpret the distribution of these women within the clerical group since, depending on the particular machines for which they were trained, they may conceivably all be using their skills.

The distributions of women with training as secretary and stenographer suggest that it may not be possible to distinguish between the two with regard to classifying either training or occupation, at least within the concepts used here. Typist training is less likely to result in a clerical or white collar job than other types of white collar training: 31 percent of women with training in this skill were in blue collar or service occupations, a proportion only slightly lower than that for all trained women (33 percent).

The data on institutional setting of training, cited above in the

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<sup>21/</sup> It is possible that these two occupations may be staffed in part by women who did not complete their professional training.

Table 25

Percent Distribution of Experienced Civilian Labor Force with Formal Occupational Training in Selected White Collar Occupations and Fields, by Present or Last Occupation: Women Aged 22-64 Who Had Completed Less Than 3 Years of College, April 1963

Occupation	Occupation or field studied									
	Nurse, prof.	Tech., med. & dent.	Book-keeper	Office mach. op.	Secretary	Steno-grapher	Tele. op.	Typist	Mer-chand-ising	Bus. & comm.
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Nurses, Professional	62.4	-	-	-	0.3	1.0	-	0.6	-	1.4
Technicians, med. & dent.	0.4	39.1	-	-	0.2	0.2	-	0.6	-	-
All other professional & tech.	3.4	7.8	-	1.1	2.9	3.9	4.0	4.4	-	3.3
Mgrs., offs., props.	0.6	4.7	11.5	3.2	7.0	6.4	2.4	3.4	37.8	5.8
Bookkeepers	2.6	3.1	25.7	10.1	6.1	6.5	2.4	7.2	4.1	11.9
Cashiers	0.4	-	4.3	2.5	1.0	0.7	1.6	0.6	2.7	2.0
Office mach. operators	0.4	-	2.2	28.5	2.1	0.8	-	0.9	-	2.9
Secretaries	1.5	15.6	0.9	6.1	34.5	26.1	2.4	5.0	2.7	12.3
Stenographers	-	-	-	0.7	4.2	3.3	-	-	-	1.5
Telephone operators	-	-	0.6	0.7	1.0	1.3	33.9	1.6	9.5	1.4
Typists	0.9	-	0.6	1.4	6.4	5.0	1.6	14.1	2.7	7.8
All other clerical	5.2	15.6	12.1	23.1	15.7	15.4	27.4	12.9	4.1	21.4
Salesmen & sales clerks	0.6	3.1	12.4	5.8	3.7	7.0	1.6	17.2	13.5	6.0
All other sales workers	0.4	-	2.5	-	1.5	2.7	6.5	0.9	9.5	1.5
Craftsmen, fore., & kin.	0.6	-	-	-	0.2	0.2	-	0.9	2.7	0.5
Assemblers	0.6	-	0.9	1.4	0.2	1.4	-	1.6	-	1.2
Ckrs., exam., insp.	0.4	3.1	-	-	0.4	1.0	-	3.1	-	0.7
Dressmakers & seams.	0.6	-	0.6	-	0.2	0.7	-	-	-	0.1
Sewers & stitchers, mfg.	-	-	2.2	-	1.0	1.6	1.6	1.9	-	1.1
All other operatives	0.6	3.1	9.3	2.5	3.1	4.5	5.6	9.1	6.8	5.2

Table 25 (continued)

Occupation	Occupation or field studied									
	Nurse, prof.	Tech., med. dent.	Book-keeper	Office mach. op.	Secretary	Steno-grapher	Tele. op.	Typist	Mer chand-ising	Bus. & comm.
Private household workers	4.1	-	1.5	2.5	1.4	1.6	-	0.6	-	1.9
Hairdressers & cosmetologists	-	-	1.2	3.2	0.2	0.7	-	1.6	-	0.9
Practical nurses	4.7	-	-	-	0.4	0.3	-	-	-	1.0
Attendants, hosp. & other inst.	6.2	3.1	1.9	1.1	0.4	0.6	-	2.5	-	0.8
Cooks (exc. priv. hshld.)	0.6	-	2.2	-	0.4	0.5	1.6	1.6	-	0.6
All other service workers	2.2	3.1	6.2	5.4	4.4	5.1	8.1	6.6	6.8	5.5
Farmers & farm laborers	-	-	0.9	0.7	0.9	1.2	-	0.9	-	1.1
Laborers, exc. fm. & mine	-	-	-	-	0.2	-	-	0.6	-	0.1

Note: see Explanatory Note on p. 3.

The sums of components may not equal totals because of rounding.

discussion of male craftsmen, indicate that 61 percent of all training programs for telephone operator were taken in "company schools", but this in itself is apparently not sufficient to ensure that women pursue that specific occupation, since only a third of those with training in the field are "telephone operators".

Sixty percent of the small group of women with training in merchandising are "managers, officials, and proprietors" or "sales workers" and a like percentage of those with a business or commercial course are "clerical and kindred workers".

For the miscellaneous group of training fields presented in Table 26, the proportion of women in white collar occupations drops sharply. A third of those with training as dressmaker are "dressmakers and seamstresses" or "sewers and stitchers, manufacturing". Over half of those with training as hairstresser and cosmetologist are pursuing occupations in that category and over half of those with training as practical nurse are presently either "practical nurses", "attendants, hospital or other institution", or "professional nurses". With regard to home economics, about a third of women with this background are in various service occupations in which they may be utilizing this training.

To return briefly to the point noted above, namely that the data in this section seem to indicate that women in the labor force tend to utilize the skills acquired in formal occupational training to a greater extent than men: a number of factors may be associated with this, if it is true. Women appear to have lower occupational and job mobility rates than men and therefore are presumably less likely to move out of their field of training if they stay in the labor force. Moreover, the distribution of men among the universe of occupations is more nearly equal than that for women, who tend to be concentrated in a relatively few categories. As a result, the training available for women and the training they choose to take will tend to be more narrowly oriented towards these few categories and the statistical chances of their not being in one of these categories, even assuming a purely random situation, will be less. Other factors undoubtedly also enter into the picture. And it is well to remember that if the total population with formal occupational training were our base, instead of those in the experienced labor force at a given point of time, the differential in utilization rates between the sexes would be considerably altered.

Finally, we may refer again to the earlier report. As noted above, the same group of workers, that is, those completing less than three years of college who had formal occupational training, were asked directly if they used their training on their present or last job. Among men, 57 percent reported using at least one of the skills in which they had had such training, while the comparable proportion



Table 26

Percent Distribution of Experienced Civilian Labor Force with Formal Occupational Training in Miscellaneous Occupations and Fields, by Present or Last Occupation: Women Aged 22-64 Who Had Completed Less Than 3 Years of College, April 1963

Occupation	Occupation or field studied					
	Dress-maker	Hairdresser and cosmetolog.	Practical nurse	Home economics	All other fields	All fields
Total	100.0	100.0	100.0	100.0	100.0	100.0
Nurses, professional	-	-	7.1	1.6	0.5	3.9
Technicians, med. & dent.	-	-	1.3	0.3	0.9	0.5
All other prof. & tech.	6.3	0.4	1.3	2.3	9.2	3.6
Mgrs., offs., props.	6.3	1.9	1.3	3.2	7.9	5.6
Bookkeepers	1.7	0.6	2.9	3.3	4.7	7.4
Cashiers	-	0.4	0.8	2.7	2.0	1.6
Office machine operators	1.1	1.3	0.5	1.3	0.8	2.2
Secretaries	2.9	0.6	2.4	3.5	7.3	12.6
Stenographers	-	-	0.5	0.6	0.3	1.5
Telephone operators	-	0.4	-	1.1	1.1	1.4
Typists	1.1	1.5	-	2.7	1.5	4.6
All other clerical workers	5.7	4.8	4.8	8.9	13.1	14.5
Salesmen & sales clerks	4.6	3.4	5.0	9.6	5.7	6.4
All other sales workers	1.7	1.5	0.5	1.7	3.8	1.7
Craftsmen, fore., & kin.	3.4	-	-	1.9	1.8	0.8
Assemblers	1.1	1.1	-	2.8	1.7	1.2
Checkers, exam., insp.	1.7	2.1	0.5	1.6	1.6	1.0
Dressmakers & seamst.	8.0	0.8	0.5	1.4	0.7	0.6
Sewers & stitchers, mfg.	25.1	0.6	-	3.1	2.4	2.1
All other operatives	8.6	4.8	2.9	10.1	9.1	6.0

Table 26 (continued)

Occupation	Occupation or field studied				
	Dress-maker	Hairdresser and cosmetolog.	Practical nurse	Home economics	All other fields
Private household workers	8.0	3.4	8.7	10.8	5.6
Hairdressers and cosmetologists	2.9	<u>54.7</u>	0.5	2.2	1.6
Practical nurses	4.0	<u>2.7</u>	<u>39.2</u>	1.3	1.4
Attendants, hospitals and institutions	-	2.7	9.0	1.7	4.0
Cooks (exc. private households)	-	1.3	1.1	2.1	2.6
All other service workers	5.1	8.4	7.4	14.2	5.7
Farmers and farm laborers	-	1.1	1.3	3.6	2.4
Laborers, exc. farm and mine	-	-	0.5	-	0.6
					0.2

Note: See Explanatory Note on p. 3.

The sums of components may not equal totals because of rounding.

for women was 65.5 percent. <sup>22/</sup> We cannot, of course, obtain a similar summary measure from the present tabulations but it is interesting to note that the differential shown in the earlier report confirms the general impression presented by the data here.

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<sup>22/</sup> Ibid., Table 9; see also the text discussion on use of training in that report (p. 15ff.) which suggests that additional tabulations showing current occupation by specific field of training by worker's opinion on use of training might increase our insight into these relationships.

#### IV. SUMMARY AND CONCLUSION

Slightly more than half of the experienced civilian labor force aged 22 to 64 in April 1963 had either completed three or more years of college or had had some type of formal occupational training. Substantial differences in this proportion occurred among those in specific occupations and, within occupations, there was a general tendency for the proportion without training to be higher among older than among younger workers.

For those who had completed three or more years of college the relationship between field of college major and current occupation appears in general to be quite close, but there is some indication, among males at least, that as workers become older they tend to move into managerial activities and out of the direct pursuit of the occupation for which their college or professional training prepared them.

The relationship between training and current occupation is somewhat more difficult to interpret for those whose formal education stopped before the completion of three years of college. Except for three occupations, professional nurses, barbers, and hairdressers and cosmetologists, where licensing requirements are quite rigid, none of the 31 occupations for which the study provides both specific occupation and specific training data had as much as three-fifths of their workers with training directly in the occupation pursued, and most had considerably less than half with such training. Nevertheless, as Chart I demonstrates, a relatively high proportion of workers in many of these occupations had had some type of formal training. The crucial question is how much of the "other" training taken can be construed as related to the occupation?

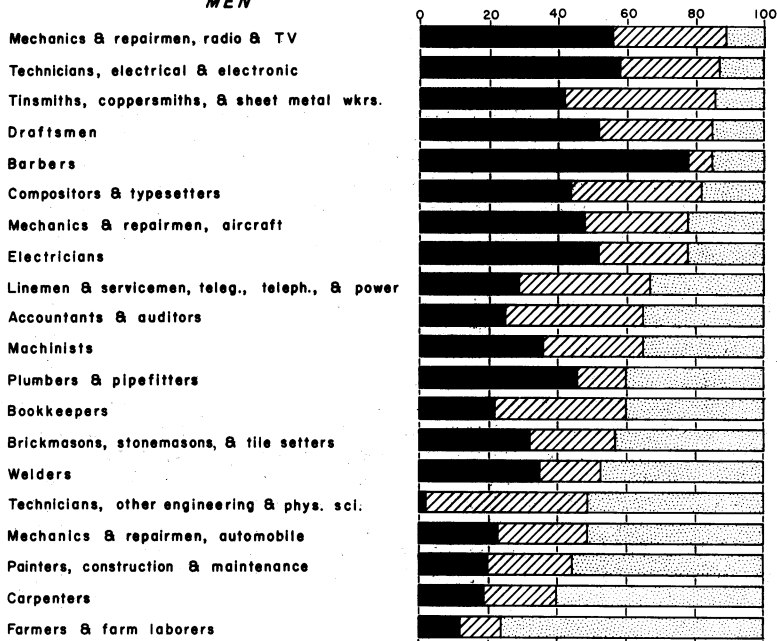
The discussion in sections II and III has pointed out several instances in which the data clearly indicate that training for one specific occupation is used in another. The examples that arise from the present materials - linemen whose training was as electrician, the interchange among several of the clerical occupations - are, for the most part, fairly obvious. They suggest that more extensive data from which additional training fields could be obtained might assist in the development of a classification system for training fields taking account of such interchangeability of training. The work now going on at the Office of Education on developing a convertibility list between the classifications used in vocational education and the new Dictionary of Occupational Titles is highly pertinent to the type of analysis desired here, as are the more general educational classifications currently being

CHART I

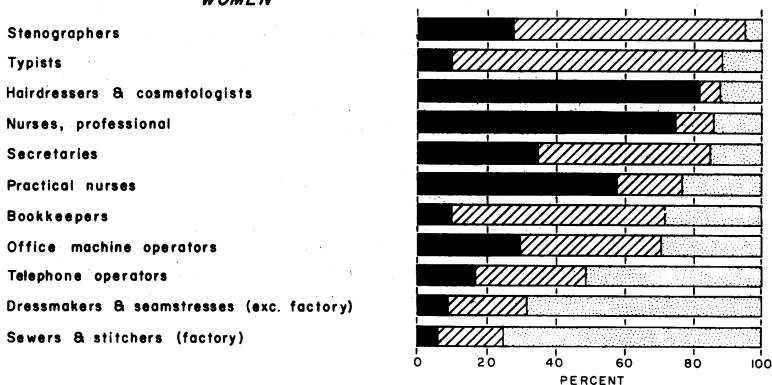
**MEN AND WOMEN IN SELECTED OCCUPATIONS WHO HAD COMPLETED LESS THAN 3 YEARS OF COLLEGE, BY TRAINING STATUS AND TYPE OF TRAINING:  
EXPERIENCED CIVILIAN LABOR FORCE, APRIL 1963**

(Percent distribution)

**MEN**



**WOMEN**



With training specific to occupation
  With other formal training
  With no formal training

formulated by UNESCO and other international agencies. All have as a major objective the establishment of a closer link between manpower and education/training data, but their focus of interest is less on the training background of persons in a specific occupation than on the utilization of specific types of training, that is, on the type of data presented in Tables 22-26 rather than on that summarized in Chart I. It seems highly likely, however, that a classification in terms of "training families" would be most useful in relating training to "job families."

To a very considerable extent, data and discussion of the type presented in this report must be regarded as the raw material from which those interested in projections and planning can develop the types of measures most helpful to them. What we have attempted is a largely descriptive report on those relationships that emerge from the very limited data available. It seems clear that larger scale collections, perhaps in a two percent post-censal sample, would provide the material needed for testing and further development of the models for educational planning and manpower projections that are currently the direction of so much of the work in these fields.

## Appendix Tables

1. Experienced civilian labor force by major occupation group, by education and training status and age: men aged 22-64, April 1963
2. Experienced civilian labor force by major occupation group, by education and training status and age: women aged 22-64, April 1963
3. Experienced civilian labor force by major occupation group, by major field of college study and age: men aged 22-64 who had completed 3 or more years of college, April 1963
4. Experienced civilian labor force by major occupation group, by major field of college study and age: women aged 22-64 who had completed 3 or more years of college, April 1963
5. Experienced civilian labor force in selected occupations, by training status and age: men aged 22-64 who had completed less than 3 years of college, April 1963
6. Experienced civilian labor force in selected occupations, by training status and age: women aged 22-64 who had completed less than 3 years of college, April 1963
7. Experienced civilian labor force by major occupation group, by occupation or field studied: men aged 22-64 who had completed less than 3 years of college and had formal occupational training, April 1963
8. Experienced civilian labor force by major occupation group, by occupation or field studied: women aged 22-64 who had completed less than 3 years of college and had formal occupational training, April 1963
9. Experienced civilian labor force by major field of college study, by major occupation groups and selected professional occupations: men aged 22-64 who had completed 3 or more years of college, April 1963
10. Experienced civilian labor force by major field of college study, by major occupation groups and selected professional occupations: women aged 22-64 who had completed 3 or more years of college, April 1963

## Appendix Tables (cont.)

11. Experienced civilian labor force by occupation or field studied, by major occupation group: men aged 22-64 who had completed less than 3 years of college and had formal occupational training, April 1963
12. Experienced civilian labor force by occupation or field studied, by major occupation group: women aged 22-64 who had completed less than 3 years of college and had formal occupational training, April 1963



**Experienced Civilian Labor Force by Major Occupation Group,  
By Education and Training Status and Age: Men Aged 22-64, April 1963  
(in thousands)**

Major occupation group and age	Total	Completed less than 3 yrs. of college			Completed 3 or more years of college
		Total	With formal occupational training	Without formal occupational training	
<b>Total, 22-64</b>					
<b>years of age</b>	40,213	34,151	15,108	19,043	6,062
22-34	12,576	10,217	5,220	4,997	2,359
35-44	11,153	9,310	4,765	4,545	1,843
45-64	16,484	14,624	5,123	9,501	1,860
<b>Professional, tech., 22-64</b>	5,039	1,702	1,190	512	3,338
22-34	2,010	595	433	162	1,416
35-44	1,530	511	399	112	1,018
45-64	1,499	596	358	238	904
<b>Managers, offs., props., 22-64</b>	5,770	4,501	2,246	2,255	1,268
22-34	1,198	879	534	345	318
35-44	1,641	1,244	702	542	397
45-64	2,931	2,377	1,009	1,368	553
<b>Clerical &amp; kin. wkrs., 22-64</b>	2,679	2,259	1,274	985	420
22-34	974	785	464	321	190
35-44	744	628	413	215	115
45-64	961	846	398	448	115
<b>Sales wkrs., 22-64</b>	2,049	1,594	837	757	455
22-34	705	520	298	222	185
35-44	581	431	248	183	150
45-64	763	642	291	351	121
<b>Craftsmen, for., 22-64</b>	8,494	8,245	4,397	3,848	249
22-34	2,437	2,337	1,401	936	100
35-44	2,532	2,457	1,484	973	75
45-64	3,525	3,450	1,512	1,938	74
<b>Operatives &amp; kin., 22-64</b>	8,242	8,136	2,858	5,278	106
22-34	2,966	2,908	1,242	1,666	58
35-44	2,230	2,203	835	1,368	27
45-64	3,046	3,025	781	2,244	21
<b>Service wkrs., 22-64</b>	2,549	2,439	1,040	1,399	110
22-34	683	626	316	310	57
35-44	631	608	319	289	23
45-64	1,236	1,205	405	800	31

Appendix Table 1 (cont.)

Major occupation group and age	Total	<u>Completed less than 3 yrs. of college</u>			Completed 3 or more years of college
		Total	With formal occupational training	Without formal occupational training	
Farmers & farm labs., 22-64	2,619	2,535	601	1,934	84
22-34	614	588	220	368	26
35-44	596	568	161	407	28
45-64	1,409	1,380	221	1,169	29
Laborers, exc. farm & mine., 22-64	2,773	2,741	665	2,076	32
22-34	990	979	313	666	11
35-44	669	659	203	456	10
45-64	1,114	1,103	148	955	11

Note: The sums of components may not equal totals because of rounding.

Appendix Table 2

Experienced Civilian Labor Force by Major Occupation Group,  
By Education and Training Status and Age: Women Aged 22-64, April 1963  
(in thousands)

Major occupation group and age	Total	Completed less than 3 yrs. of college		Completed 3 of more years of college	
		Total	With formal occupational training		Without formal occupational training
Total, 22-64 years of age	20,556	17,928	8,447	9,481	2,628
22-34	5,853	4,889	2,784	2,105	965
35-44	5,719	5,059	2,521	2,538	659
45-64	8,984	7,980	3,142	4,838	1,004
Professional, tech., 22-64	2,852	1,001	677	324	1,852
22-34	1,008	285	206	79	723
35-44	671	229	165	64	442
45-64	1,173	486	305	181	686
Managers, offs., props., 22-64	1,056	912	470	442	144
22-34	126	105	67	38	21
35-44	308	257	151	106	51
45-64	623	550	252	298	73
Clerical & kin. wkrs., 22-64	5,843	5,422	3,871	1,551	421
22-34	2,055	1,891	1,435	456	164
35-44	1,741	1,622	1,158	464	119
45-64	2,048	1,910	1,278	632	139
Sales wkrs., 22-64	1,578	1,503	680	823	74
22-34	275	259	151	108	17
35-44	458	446	222	224	12
45-64	845	799	308	491	46
Craftsmen, fore., 22-64	190	186	69	117	5
22-34	56	54	26	28	1
35-44	51	49	24	25	2
45-64	84	81	18	63	2
Operatives & kin., 22-64	3,488	3,458	919	2,539	30
22-34	964	957	312	645	7
35-44	1,073	1,060	336	724	13
45-64	1,451	1,441	271	1,170	10
Private hshld. wkrs., 22-64	1,576	1,551	335	1,216	25
22-34	336	327	111	216	9
35-44	373	369	79	290	4
45-64	867	855	145	710	12

Appendix Table 2 (cont.)

Major occupation group and age	Total	<u>Completed less than 3 yrs. of college</u>		Completed 3 or more years of college	
		<u>Total</u>	<u>With formal occupational training</u>		<u>Without formal occupational training</u>
<hr/>					
Service wkrs., exc. priv. hshld., 22-64	3,346	3,282	1,300	1,982	64
22-34	861	838	419	419	23
35-44	897	885	361	524	12
45-64	1,587	1,558	519	1,039	29
<hr/>					
Farmers & fm. labs., 22-64	553	539	111	428	14
22-34	142	142	52	90	--
35-44	121	116	18	98	5
45-64	290	281	41	240	9
<hr/>					
Laborers, exc. farm & mine., 22-64	74	74	16	58	--
22-34	30	30	3	27	--
36-44	26	26	8	18	--
45-64	17	18	5	13	--

Note: The sums of components may not equal totals because of rounding.

Appendix Table 3

Experienced Civilian Labor Force by Major Occupation Group, by Major Field of College Study and Age:  
Men Aged 22-64 Who Had Completed 3 or More Years of College, April 1963

Major occupation group and age	Major field of College Study												
	All fields		Agri- cul.	Biol. sci.	Busi- ness	Edu- catn.	Engin- eering	Health sci.	Human- ities	Phys. sci.	Soc. sci.	All other rptd.	
	Number (in 1000s)	Per- cent											
Total 22-64 yrs.	6,062	100.0	3.3	3.2	21.8	11.7	18.1	8.1	8.0	5.5	7.3	11.5	1.5
22-34 yrs.	2,359	100.0	3.2	3.7	22.5	12.6	17.5	4.9	8.8	6.3	8.6	10.2	1.7
35-44 yrs.	1,843	100.0	3.3	3.5	21.0	11.3	20.1	10.2	7.3	5.6	6.5	10.3	0.9
45-64 yrs.	1,860	100.0	3.4	2.2	21.6	11.1	16.8	10.1	7.5	4.6	6.6	14.3	1.8
Prof., tech.	3,338	100.0	1.8	3.7	11.4	13.7	20.8	13.0	10.3	6.4	6.0	11.7	1.2
22-34 yrs.	1,416	100.0	2.6	4.4	11.1	14.7	21.8	7.6	10.2	7.3	7.4	11.0	2.0
35-44 yrs.	1,018	100.0	1.2	4.1	10.1	12.2	23.4	16.1	10.0	6.5	4.7	10.9	0.8
45-64 yrs.	904	100.0	1.3	2.2	13.2	13.9	16.5	18.3	10.7	4.8	5.2	13.5	0.3
Mgrs., offs.,	1,268	100.0	5.0	2.9	36.1	8.4	17.7	1.7	3.9	3.9	7.3	11.6	1.7
22-64 yrs.	318	100.0	3.5	3.5	44.0	10.7	12.3	0.6	3.8	3.1	8.5	7.9	2.2
22-34 yrs.	397	100.0	6.5	2.3	40.8	7.1	20.7	2.3	3.0	3.0	6.0	7.1	1.8
35-44 yrs.	553	100.0	4.9	3.1	28.4	8.3	18.6	1.8	4.5	4.7	7.2	17.0	1.3
Clerical,	420	100.0	4.0	2.4	30.2	9.8	9.0	1.7	7.9	3.3	10.2	20.2	1.2
22-64 yrs.	190	100.0	1.1	2.6	39.5	8.4	6.3	1.1	10.0	2.6	12.1	14.7	1.1
22-34 yrs.	115	100.0	9.6	2.6	23.5	17.4	1.7	1.7	4.3	4.3	13.0	21.7	---
35-44 yrs.	115	100.0	4.3	1.7	20.9	1.7	20.9	3.5	7.0	3.5	4.3	27.8	2.6
45-64 yrs.	455	100.0	3.1	1.8	51.4	3.3	6.8	1.1	5.9	7.0	11.0	5.9	2.6
Sales, 22-64 yrs.	185	100.0	1.6	---	53.5	1.1	8.6	---	9.7	8.6	11.4	4.3	---
22-34 yrs.	150	100.0	2.0	5.3	46.7	4.7	4.7	3.3	6.0	6.7	10.0	8.7	1.3
35-44 yrs.	121	100.0	5.8	---	52.9	5.8	7.4	---	---	4.1	11.6	4.1	9.1
45-64 yrs.													

Appendix Table 3 (cont.)

Experienced Civilian Labor Force by Major Occupation Group, by Major Field of College Study and Age:  
Men Aged 22-64 Who Had Completed 3 or More Years of College, April 1963

Major occupation group and age	Major field of College Study										
	All fields	Agri- cul.	Biol. sci.	Busi- ness	Edu- catn.	Engin- eering	Health sci.	Human- ities	Phys. sci.	Soc. sci.	Not rptd.
	Number (in 1000s)	Per- cent									
<b>Crafts, etc.</b>											
22-64 yrs.	249	100.0	1.2	3.6	21.7	10.4	33.7	2.8	5.6	2.8	9.2
22-34	100	100.0	3.0	6.0	27.0	7.0	27.0	---	7.0	2.0	16.0
35-44	75	100.0	---	2.7	13.3	16.0	46.7	9.3	2.7	4.0	2.7
45-64	74	100.0	---	2.7	21.6	9.5	29.7	---	6.8	2.7	8.1
											6.8
											12.2
<b>Operatives,</b>											
22-64 yrs.	106	100.0	3.8	---	24.5	24.5	10.4	4.7	4.7	6.6	12.3
22-34	57	100.0	3.5	---	31.6	26.3	5.3	3.5	3.5	5.3	14.0
											3.5
<b>Service,</b>											
22-64 yrs.	111	100.0	3.6	1.8	16.2	23.4	6.3	8.1	9.0	7.2	11.7
22-34	58	100.0	3.4	3.4	15.5	19.0	8.6	6.9	8.6	12.1	12.1
											10.8
											8.6
<b>Farm wkrs., 22-64 yrs.</b>	83	100.0	38.6	---	14.5	7.2	8.4	2.4	---	6.0	18.1
											6.0
											---
<b>Labs. exc. farm,</b>											
22-64	32	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)

(1) Percent not shown where base is less than 50,000.  
Note: The sums of components may not equal totals because of rounding.

Appendix Table 4

Experienced Civilian Labor Force by Major Occupation Group, by Major Field of College Study and Age:  
Women Aged 22-64 Who Had Completed 3 or More Years of College, April 1963

Major occupation group and age	Major field of College Study										
	All fields No.(in 1000s)	Per- cent	Biol. sci.	Busi- ness	Educa- tion	Health sci.	Human- ities	Phys. sci.	Soc. sci.	All other	Not rptd.
Total, 22-64 yrs.	2,628	100.0	3.3	8.6	47.1	10.0	15.6	1.0	6.5	5.6	2.3
22-34 yrs.	965	100.0	3.7	9.1	43.2	11.8	15.8	1.5	7.0	5.7	2.1
35-44	659	100.0	4.6	10.2	42.0	10.0	13.7	1.2	8.5	7.0	3.0
45-64	1,004	100.0	2.0	7.0	54.2	8.4	16.7	0.3	4.7	4.6	2.1
Prof., tech., 22-64 yrs.	1,852	100.0	3.6	2.5	54.9	11.7	13.2	1.0	6.2	5.7	1.1
22-34	723	100.0	4.3	4.0	49.0	14.8	12.9	1.7	5.9	5.3	2.2
35-44	442	100.0	3.8	1.6	51.8	13.3	11.5	1.1	8.6	7.7	0.7
45-64	686	100.0	2.8	1.5	63.3	7.6	14.7	0.3	5.0	5.1	0.3
Managers, offs., pr. 22-64	144	100.0	3.5	16.0	28.5	6.2	20.8	1.4	9.0	7.6	7.6
35-44	51	100.0	9.8	19.6	19.6	5.9	27.5	3.9	7.8	7.8	---
45-64	73	100.0	---	17.8	30.1	6.8	19.2	---	6.8	2.7	15.1
Clerical & kin., 22-64	421	100.0	2.4	32.5	26.8	1.9	20.7	1.0	7.8	4.5	2.9
22-34	164	100.0	1.8	31.7	23.2	---	26.2	1.2	9.8	4.9	---
35-44	119	100.0	5.9	37.0	22.7	---	9.2	1.7	10.9	2.5	10.1
45-64	139	100.0	---	28.8	33.8	5.8	23.7	---	2.9	5.0	---
Sales wkrs., 22-64	74	100.0	4.1	16.2	27.0	18.9	25.7	---	4.1	4.1	---
Service wkrs., 22-64	88	100.0	2.3	6.8	29.5	13.6	20.5	---	8.0	5.7	13.6
All other	49	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)

(1) Percent not shown where base is less than 50,000.

Note: The sums of components may not equal totals because of rounding.

Appendix Table 5

Experienced Civilian Labor Force in Selected Occupations by Training Status and Age:  
Men Aged 22-64 Who Had Completed Less Than 3 Years of College, April 1963

Occupation and age	Total (in 1000s)	Percent having formal occupational training	Occupation and age	Total (in 1000s)	Percent having formal occupational training
<b>Total, 22-64 yrs.</b>			<b>Mgrs., offs., props., 22-64</b>		
22-34	34,151	44.2	22-34	4,501	49.9
35-44	10,217	51.1	35-44	879	60.8
45-64	9,310	51.2	45-64	1,244	56.4
	14,624	35.0		2,377	42.4
<b>Prof., tech., &amp; kin., 22-64 yrs.</b>			<b>Buyers, 22-64</b>		
22-34	1,702	69.9	22-34	176	45.5
35-44	595	72.8	35-44	54	53.7
45-64	511	78.1	45-64	56	51.8
	596	60.1		67	34.3
<b>Acct's &amp; aud., 22-64</b>			<b>All other, 22-64</b>		
22-34	195	65.1	22-34	4,325	50.1
35-44	83	66.3	35-44	826	61.3
45-64	68	54.4	45-64	1,188	56.6
				2,311	42.7
<b>Draftsmen, 22-64</b>			<b>Clerical &amp; kin. wkrs., 22-64</b>		
22-34	214	84.6	22-34	2,259	56.4
35-44	112	81.2	35-44	785	59.1
	58	82.8	45-64	628	65.8
<b>Technicians, elec., 22-64</b>				846	47.2
	67	86.6	<b>Bookkeepers, 22-64</b>		
<b>Tech., oth. eng. &amp; ph.s., 22-64</b>			45-64	90	60.0
	124	49.2		53	45.3
<b>All other, 22-64</b>			<b>All other cler., 22-64</b>		
22-34	1,102	69.2	22-34	2,170	56.3
35-44	321	74.5	35-44	770	58.8
45-64	345	78.6	45-64	606	65.0
	436	58.0		794	47.1



Appendix Table 5 (cont.)

Experienced Civilian Labor Force in Selected Occupations by Training Status and Age:  
Men Aged 22-64 Who Had Completed Less Than 3 Years of College, April 1963

Occupation and age	Total (in 1000s)	Percent having formal occupational training	Occupation and age	Total (in 1000s)	Percent having formal occupational training
Sales workers, 22-64	1,594	52.5	Carpenters, 22-64	829	40.4
22-34	520	57.3	22-34	208	47.1
35-44	431	57.5	35-44	211	61.6
45-64	642	45.3	45-64	411	26.3
Salesmen & clk.s., 22-64	1,213	49.4	Compositors, etc., 22-64	97	81.4
22-34	429	53.4			
35-44	313	58.5	Electricians, 22-64	363	77.7
45-64	471	39.7	22-34	122	69.7
			35-44	93	87.1
Other sales wkrs., 22-64	380	62.6	45-64	149	77.9
22-34	92	75.0			
35-44	118	55.1	Linemen, 22-64	317	66.9
45-64	171	60.8	22-34	140	69.3
			35-44	110	76.4
			45-64	68	47.1
Craftsmen, fore., etc., 22-64	8,245	53.3			
22-34	2,337	59.9	Machinists, 22-64	384	64.6
35-44	2,457	60.4	22-34	91	76.9
45-64	3,450	43.8	35-44	109	68.8
			45-64	184	56.0
Brickmasons, 22-64	160	56.9			
22-34	60	63.3	Mechanics, aircr., 22-64	114	78.1
45-64	57	38.6			
			Mechanics, auto., 22-64	698	48.7
			22-34	273	51.6
			35-44	227	53.3
			45-64	197	39.6

Appendix Table 5 (cont.)

Experienced Civilian Labor Force in Selected Occupations by Training Status and Age:  
Men Aged 22-64 Who Had Completed Less Than 3 Years of College, April 1963

Occupation and age	Total (in 1000s)	Percent having formal occupational training	Occupation and age	Total (in 1000s)	Percent having formal occupational training
Mechanics, radio & T.V., 22-64	97	88.7	Assemblers, 22-64	319	39.2
Painters, 22-64			22-34	119	45.4
22-34	416	44.5	35-44	97	43.3
35-44	102	47.1	45-64	103	28.2
45-64	106	44.3			
	208	43.3	Chkrs., exam., insp., 22-64	277	48.7
Plumbers, 22-64			22-34	91	69.2
22-34	300	60.0	35-44	74	37.8
35-44	83	56.6	45-64	110	39.1
45-64	96	78.1			
	121	47.9	Welders, 22-64	363	53.2
Tinsmiths & copper-sm.			22-34	114	42.1
35-44	118	85.6	35-44	96	67.7
	66	86.4	45-64	153	52.3
All other crafts., 22-64			All other ops., 22-64	7,177	33.5
22-34	4,353	49.9	22-34	2,583	41.7
35-44	1,133	59.1	35-44	1,935	36.2
45-64	1,285	53.5	45-64	2,658	23.6
	1,935	42.0			
Operatives & kin., 22-64			Service wkrs., 22-64	2,439	42.6
22-34	8,136	35.1	22-34	626	50.5
35-44	2,908	42.7	35-44	608	52.5
45-64	2,203	37.9	45-64	1,205	33.6
	3,025	25.8	Barbers, 22-64	142	84.5
			45-64	76	76.3

Appendix Table 5 (cont.)

Experienced Civilian Labor Force in Selected Occupations by Training Status and Age:  
Men Aged 22-64 Who Had Completed Less Than 3 Years of College, April 1963

Occupation and age	Total (in 1000s)	Percent having formal occupational training	Occupation and age	Total (in 1000s)	Percent having formal occupational training
<b>Service wkrs. (cont.)</b>					
All oth. serv., 22-64	2,297	40.1			
22-34	583	47.5			
35-44	584	50.5			
45-64	1,129	30.8			
<b>Farmers &amp; farm labs.,</b>					
22-64	2,535	23.7			
22-34	588	37.4			
35-44	568	28.3			
45-64	1,380	16.0			
<b>Laborers, exc. farm &amp; mine., 22-64</b>					
22-64	2,741	24.3			
22-34	979	32.0			
35-44	659	30.8			
45-64	1,103	13.4			

Note: The sums of components may not equal totals because of rounding.

Appendix Table 6

Experienced Civilian Labor Force in Selected Occupations by Training Status and Age:  
Women Aged 22-64 Who Had Completed Less Than 3 Years of College, April 1963

Occupation and age	Total (in 1000s)	Percent having formal occupational training	Occupation and age	Total (in 1000s)	Percent having formal occupational training
Total 22-64 yrs.	17,928	47.1	Clerical & kin. wkrs., 22-64	5,422	71.4
22-34	4,889	56.9	22-34	1,891	75.9
35-44	5,059	49.8	35-44	1,622	71.4
45-64	7,980	39.4	45-64	1,910	66.9
Prof., tech., & kin., 22-64 yrs.	1,001	67.6	Bookkeepers, 22-64	869	71.9
22-34	285	72.3	22-34	268	72.4
35-44	229	72.1	35-44	244	70.5
45-64	486	62.8	45-64	356	72.8
Nurses, prof., 22-64	385	85.7	Cashiers, 22-64	303	43.9
22-34	114	93.9	22-34	119	60.5
35-44	93	91.4	35-44	73	31.5
45-64	176	77.8	45-64	110	34.5
Tech., med. & den., 22-64	60	70.0	Office mach. ops., 22-64	264	71.2
			22-34	121	73.6
			35-44	76	69.7
			45-64	68	69.1
All other, 22-64	556	54.9	Secretaries, 22-64	1,247	85.1
22-34	156	54.5	22-34	479	85.8
35-44	114	52.6	35-44	387	85.8
45-64	286	55.6	45-64	382	83.5
Mgrs., offs., props., 22-64	912	51.5	Stenographers, 22-64	130	94.6
22-34	105	63.8	22-34	54	100.0
35-44	257	58.8			
45-64	550	45.8			

Appendix Table 6 (cont.)

Experienced Civilian Labor Force in Selected Occupations by Training Status and Age:  
Women Aged 22-64 Who Had Completed Less Than 3 Years of College, April 1963

Occupation and age	Total (in 1000s)	Percent having formal occupational training	Occupation and age	Total (in 1000s)	Percent having formal occupational training
Telephone ops., 22-64	245	49.0	All other sales, 22-64	221	64.7
22-34	84	46.4	22-34	50	52.0
35-44	73	60.3	35-44	80	62.5
45-64	86	41.9	45-64	91	74.7
Typist, 22-64	442	88.5	Craftsmen, fore., kin., 22-64	186	37.1
22-34	185	86.5	22-34	54	48.1
35-44	152	91.4	45-64	81	22.2
45-64	106	86.8			
All other cler., 22-64	1,922	63.9	Operatives & kin., 22-64	3,458	26.6
22-34	580	71.6	22-34	957	32.6
35-44	586	62.8	35-44	1,060	31.7
45-64	756	59.0	45-64	1,441	18.8
Sales workers, 22-64	1,503	45.2	Assemblers, 22-64	306	32.4
22-34	259	58.3	22-34	85	42.4
35-44	446	49.8	35-44	87	41.4
45-64	799	38.5	45-64	132	19.7
Salesm. & clk., 22-64	1,282	41.9	Checkers, 22-64	253	34.4
22-34	208	60.1	22-34	56	57.1
35-44	366	47.0	35-44	69	34.8
45-64	708	33.9	45-64	127	23.6
			Dressmakers, 22-64	161	31.7
			45-64	105	19.0

Appendix Table 6 (cont.)

Experienced Civilian Labor Force in Selected Occupations by Training Status and Age:  
Women Aged 22-64 Who Had Completed Less Than 3 Years of College, April 1963

Occupation and age	Total (in 1000s)	Percent having formal occupational training	Occupation and age	Total (in 1000s)	Percent having formal occupational training
Sewers, 22-64	703	25.3	Practical nurses, 22-64	254	76.8
22-34	187	25.1	45-64	181	72.4
35-44	206	34.5			
45-64	311	19.6	Attendants, hosp., 22-64	361	46.0
			22-34	132	53.8
All other, 22-64	2,036	24.8	35-44	103	48.5
22-34	609	30.4	45-64	127	36.2
35-44	662	28.1			
45-64	766	17.5	Cooks, 22-64	465	23.0
			22-34	65	40.0
Private household., 22-64	1,551	21.6	35-44	129	12.4
22-34	327	33.9	45-64	270	23.7
35-44	369	21.4			
45-64	855	17.0	All other, 22-64	1,885	29.4
			22-34	530	41.3
Service, exc. pri. hs., 22-64	3,282	39.6	35-44	501	34.1
22-34	838	50.0	45-64	855	19.2
35-44	885	40.8			
45-64	1,558	33.3	Farmers & farm lab., 22-64	539	20.6
			22-34	142	36.6
Hairdressers, 22-64	316	87.7	35-44	116	15.5
22-34	79	92.4	45-64	281	14.6
35-44	112	81.2			
45-64	124	91.1	Laborers, exc. fm. & mine, 22-64	74	21.6

Note: The sums of components may not equal totals because of rounding.

Appendix Table 7

Experienced Civilian Labor Force by Major Occupation Group, by Occupation of Field Studied:  
Men Aged 22-64 Who Had Completed Less Than 3 Years of College and Had Formal Occupational  
Training, April 1963

A. All men with Training<sup>(1)</sup>

Occupation or field studies	Total	Profes- sional	Mgrs., offs.	Cleri- cal	Major Occupation Group					Farmers & farm ers	Labor- ers
					Sales	Crafts., forem.	Opera- tives	Serv. wkrs.	labs.		
Total - No. (in 1000s)	15,108	1,190	2,246	1,274	837	4,397	2,858	1,040	601	665	
Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Account. & auditor	2.4	6.6	4.3	7.8	3.1	0.7	1.0	0.8	---	0.3	
Draftsmen	4.9	16.4	4.2	4.3	3.8	4.3	3.9	4.0	1.7	2.9	
Technician, electronic	4.8	11.7	3.3	4.7	4.1	5.8	4.1	1.3	1.3	3.3	
Tech., other eng. & phy. sci.	0.4	1.2	0.5	0.5	0.2	0.2	0.5	0.4	---	---	
Bookkeeper	2.4	2.2	4.8	4.4	2.7	1.4	2.3	1.4	0.5	1.1	
Brickmason	1.3	0.2	1.1	1.7	0.6	2.2	0.8	1.2	1.3	1.1	
Carpenter	3.3	1.2	2.1	1.6	2.7	5.0	3.7	2.0	2.8	3.9	
Compositor & typesetter	1.0	0.4	0.4	0.5	1.7	1.9	0.5	1.3	---	0.8	
Electrician	5.2	4.0	3.6	2.7	3.2	9.0	4.3	3.3	1.7	4.1	
Lineman & serviceman	1.4	0.8	0.4	0.8	0.7	2.8	0.8	1.3	0.8	1.7	
Machinist	4.1	3.0	3.7	3.0	1.0	6.4	4.0	2.5	1.5	3.5	
Mechanic & repair., Aircondr.	4.5	6.6	4.0	3.7	3.3	5.5	4.8	1.9	3.7	2.9	
Mechanic & repair., Auto.	10.4	5.0	8.5	7.8	5.6	11.7	13.9	10.3	7.3	15.9	
Mechanic & repair., Radio & TV	4.3	3.5	4.2	4.4	3.0	5.1	3.8	3.7	2.7	5.7	
Painter	1.0	0.2	0.6	0.2	0.4	2.4	0.7	0.2	---	---	
Plumber	1.9	0.6	1.8	0.2	0.2	3.9	1.0	1.0	1.5	1.2	
Tinsmith & coppersmith	1.6	1.7	1.2	0.5	0.2	2.8	1.4	0.9	1.0	1.1	
Welder	4.0	0.6	2.2	0.8	3.8	4.1	8.5	3.3	3.3	4.5	
Barber	1.5	0.4	0.8	0.8	0.2	0.4	1.1	12.7	0.8	1.7	
Merchandising	1.1	0.6	1.8	1.3	6.8	0.5	0.6	0.5	---	0.8	

Appendix Table 7 (cont.)

Experienced Civilian Labor Force by Major Occupation Group, by Occupation of Field Studied:  
Men Aged 22-64 Who Had Completed Less Than 3 Years of College and Had Formal Occupational  
Training, April 1963

A. All men with Training<sup>(1)</sup>

Occupation or field studied	Total	Profes- sional	Mgrs., Cleri- offs. cal	Major Occupation Group					Serv. wkrs.	Farmers & farm labs.	Labor- ers
				Sales	Crafts., forem.	Opera- tives					
General trades	7.3	6.1	6.1	9.6	8.5	8.7			3.9	4.8	5.6
Business & commerce	15.4	14.2	22.6	29.7	30.6	10.0			13.6	10.3	9.8
Agriculture	8.4	3.1	7.5	5.9	5.4	9.9			4.1	50.7	11.6
All other	49.0	69.5	52.4	48.7	54.0	45.9			66.8	25.1	37.7
Not reported	3.9	5.8	4.5	2.6	4.1	3.6			2.9	2.7	3.8

(1) Since about one-third of men with training reported training in more than one occupation or field, the sums of the percentages exceed 100.0.



Appendix Table 7 (cont.)

Experienced Civilian Labor Force by Major Occupation Group, by Occupation of Field Studied:  
Men Aged 22-64 Who Had Completed Less Than 3 Years of College and Had Formal Occupational  
Training, April 1963

## B. Men With Training in One Skill Only (2)

Occupation or field studied	Major Occupation Group									
	Total	Profes- sional	Mgrs., offs.	Cleri- cal	Sales	Crafts., forem.	Opera- tives	Serv. wks.	Farmers & farm labs.	Labor- ers
Total - No. (in 1000s)	10,109	662	1,502	847	511	2,836	2,051	691	477	532
Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Account. & auditor	1.5	6.8	2.6	3.5	1.4	0.5	0.7	0.4	---	0.4
Draftsman	2.3	10.0	2.4	2.6	3.1	1.8	1.1	0.6	0.6	1.7
Technic., Electronic	2.0	5.6	1.5	2.2	0.6	2.4	1.9	0.7	---	1.9
Tech., oth. eng. & ph. s.	0.2	1.1	0.3	---	---	---	0.2	---	---	---
Bookkeeper	1.5	2.6	3.1	2.7	1.4	0.7	1.4	0.3	0.4	0.6
Brickmason	1.3	---	1.1	2.1	0.8	2.2	0.6	0.3	1.3	1.3
Carpenter	2.8	1.2	1.6	1.1	3.1	4.9	2.3	1.6	2.3	3.4
Compositor & Typeset.	0.7	---	0.5	0.5	0.6	1.5	0.5	1.0	---	0.4
Electrician	4.0	1.1	2.3	2.2	2.2	7.9	3.2	3.2	1.7	1.7
Lineman & serviceman	1.1	0.3	0.5	1.1	1.2	1.9	0.6	0.7	1.0	1.7
Machinist	3.0	1.5	3.4	1.8	1.0	4.4	3.2	1.4	0.6	3.2
Mechanic & Repair, aircondr.	2.6	3.0	1.6	2.4	2.3	2.5	4.0	1.2	2.1	2.3
Mechanic & Repair, auto	8.9	0.8	7.3	5.7	5.1	9.8	12.6	10.0	6.9	14.5
Mechanic & Repair, radio, TV	2.7	2.0	1.9	2.4	0.8	3.9	2.0	2.6	2.1	4.3
Painter	0.9	---	0.7	0.2	---	2.2	0.6	0.3	---	---
Plumber	1.6	0.5	1.4	---	0.4	3.5	0.8	0.7	1.3	0.9
Tinsmith & coppersmith	1.0	0.3	0.8	---	---	1.9	0.8	0.9	0.6	0.6
Welder	3.0	---	1.2	0.6	0.6	2.8	7.8	1.3	2.7	3.9
Barber	1.5	0.8	0.7	0.2	---	0.2	1.0	14.6	---	0.9
Merchandising	0.6	---	0.3	1.1	5.7	0.2	0.2	0.6	---	0.4
General trades	4.2	1.5	2.8	2.7	3.7	4.7	6.4	2.6	5.0	4.3
Business & comm.	10.6	10.1	17.4	26.2	21.9	5.1	6.7	6.9	7.8	7.5

## Appendix Table 7 (cont.)

Experienced Civilian Labor Force by Major Occupation Group, by Occupation of Field Studied:  
Men Aged 22-64 Who Had Completed Less Than 3 Years of College and Had Formal Occupational  
Training, April 1963

B. Men With Training in One Skill Only<sup>(2)</sup>

Occupation or field studied	Major Occupation Group							
	Total	Profes- sional	Mgrs., offs.	Cleri- cal	Sales	Crafts., forem.	Opera- tives	Serv. wks. & farm labs.
Agriculture	6.3	1.1	5.4	3.1	4.1	2.5	6.9	47.2
Other	32.7	44.9	35.9	34.0	36.2	29.3	30.8	14.0
Not reported	3.1	4.7	3.3	1.7	3.9	3.0	3.4	2.1
								8.8
								32.1
								3.0

(2) The sums of components may not equal totals because of rounding.

Appendix Table 8

Experienced Civilian Labor Force by Major Occupation Group, by Occupation of Field Studied:  
Women Aged 22-64 Who Had Completed Less Than 3 Years of College and Had Formal Occupational  
Training, April 1963

A. All Women With Training<sup>(1)</sup>

Occupation or field studied	Major Occupation Group									
	Profes- Mgrs., Cleri- Total sional offs. cal		Sales forem.		Crafts., Opera- tives vate		Serv., Farmers Labor- exc. pri. & farm ers hsld. bsld. labs.			
Total - No. (in 1000s) Percent	8,447 100.0	677 100.0	470 100.0	3,871 100.0	680 100.0	69 100.0	919 100.0	335 100.0	1,300 100.0	111 100.0
Nurse, professional Technician, med. & dent.	5.5 0.8	45.5 4.4	0.6 0.6	1.3 0.6	0.7 0.3	4.3 ---	1.3 0.4	5.7 ---	4.9 0.3	--- ---
Bookkeeper Office Machine op. Secretary Stenographer Telephone op. Typist	3.8 3.3 14.9 13.0 1.5 3.8	--- 0.4 6.4 8.1 0.7 2.5	7.9 1.9 18.7 14.9 0.6 2.3	3.9 5.2 23.1 16.7 2.2 3.5	7.1 2.4 9.6 15.9 1.5 8.5	--- --- 4.3 2.9 --- 4.3	4.6 1.1 6.5 10.9 1.0 5.4	1.5 2.1 5.4 5.4 --- 0.6	2.8 2.1 5.7 6.1 0.9 3.0	2.7 1.8 9.9 11.7 --- 2.7
Dressmaker	2.1	1.6	2.3	0.6	1.8	8.7	8.5	4.2	1.6	---
Hairdresser & cosmetologist Nurse, practical	5.6 4.5	0.3 5.5	1.9 1.1	1.2 1.2	3.2 3.1	---	4.9 1.6	4.8 9.9	25.5 16.6	4.5 4.5
Merchandising Home economics Business & comm.	0.9 12.8 33.3	--- 6.8 19.6	6.0 7.2 34.5	0.5 6.9 44.3	2.5 17.8 31.0	2.9 30.4 21.7	0.5 22.2 25.7	--- 34.6 15.5	0.4 17.8 19.2	--- 35.1 28.8
All other	17.6	23.0	24.9	11.9	20.6	37.7	24.9	24.8	17.5	32.4
Not reported	2.4	3.4	6.2	2.0	2.2	2.9	1.3	2.1	2.7	2.7

Appendix Table 8 (cont.)

Experienced Civilian Labor Force by Major Occupation Group, by Occupation of Field Studied:  
 Women Aged 22-64 Who Had Completed Less Than 3 Years of College and Had Formal Occupational  
 Training, April 1963

B. Women With Training in One Skill Only (2)

Occupation or field studied	Major Occupation Group										
	Profes- sional		Mgrs., Cleri- offs. cal		Sales		Crafts., Opera- tives forem.		Pri- vate hshld.		Farmers Labor- ers exc. pri. & farm labs.
Total - No. (in 1000s) Percent	6,645 100.0	520 100.0	348 100.0	3,045 100.0	517 100.0	58 100.0	756 100.0	290 100.0	1,020 100.0	77 100.0	14 (3)
Nurse, professional Technician, med. & dent.	5.1 0.6	45.6 3.8	0.9 0.9	0.7 0.3	0.4 0.4	5.2 ---	1.3 0.3	4.8 ---	4.7 0.2	---	(3) (3)
Bookkeeper Office machine op.	3.0 1.6	---	6.9 2.0	3.2 2.5	5.8 1.4	---	---	0.7 2.4	1.7 0.4	---	(3) (3)
Secretary	14.4	3.7	17.2	23.0	8.5	5.2	6.3	5.5	5.9	7.8	(3)
Stenographer	11.3	4.4	13.5	15.5	13.5	3.4	9.7	5.2	4.2	3.9	(3)
Telephone op.	0.8	---	---	1.5	0.4	---	0.3	---	0.5	---	(3)
Typist	2.9	1.7	1.4	2.4	8.3	3.4	4.4	---	2.7	2.6	(3)
Dressmaker	1.8	1.2	0.9	0.2	2.3	10.3	8.9	3.8	0.7	---	(3)
Hairdresser & cosmetologist	4.9	---	2.0	0.5	1.9	---	4.6	2.1	24.4	5.2	(3)
Nurse, practical	4.0	4.8	1.4	0.7	3.3	---	1.3	6.2	16.1	---	(3)
Merchandising	0.4	---	2.3	0.2	1.5	---	0.4	---	0.3	---	(3)
Home economics	7.3	2.9	4.0	2.0	8.1	29.3	15.5	32.1	10.7	19.5	(3)
Business & comm.	28.5	10.6	30.7	40.6	27.9	15.5	21.6	14.1	11.0	29.9	(3)

## Appendix Table 8 (cont.)

Experienced Civilian Labor Force by Major Occupation Group, by Occupation of Field Studied:  
 Women Aged 22-64 Who Had Completed Less Than 3 Years of College and Had Formal Occupational  
 Training, April 1963

B. Woman With Training in One Skill Only<sup>(2)</sup>

Occupation or field studied	Profes- Mgrs., Cleri- Crafts., Opera- Pri- Serv., Farmers Labor- Total sional offs. cal Sales forem. tives vate exc. pri. & farm ers hshld. hshld. labs.									
All other	11.8	18.3	12.1	5.8	15.3	24.1	20.4	22.1	13.2	24.7 (3)
Not reported	1.6	2.5	3.7	0.9	1.0	3.4	0.9	1.7	2.7	3.9 (3)

(1) Since about one-fifth of women with training reported training in more than one occupation or field, the sums of the percentages exceed 100.0.

(2) The sums of components may not equal totals because of rounding.

(3) Percent not shown where base is less than 50,000.

Appendix Table 9

Experienced Civilian Labor Force by Major Field of College Study, by Major Occupation Groups and Selected Professional Occupations: Men Aged 22-64 Who Had Completed 3 or More Years of College, April 1963

Occupation	Field of College Major									
	All fields	Agri- cul.	Biol. sci.	Busi- ness	Educa- tion	Engin- eering	Health sci.	Human- ities	Phys. sci.	Social sci. All other rptd.
Total - No. (in 1000s)	6,062	199	193	1,321	712	1,096	491	482	336	445
Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Profes., tech., & kin.	55.1	30.7	64.2	28.7	64.3	63.4	88.6	71.2	63.4	44.9
Acc'ts. & auditors	4.1	---	1.0	15.6	1.0	---	---	1.0	---	1.1
Engineers	10.9	1.0	---	2.8	1.0	50.0	0.4	0.4	9.5	1.6
Lawyers & judges	3.3	---	---	0.2	---	0.2	0.4	0.4	0.6	1.7
Natural scientists	1.2	8.5	6.7	---	---	0.2	0.4	---	10.4	24.1
Physicians, dentists, etc.	5.7	---	15.5	---	0.3	---	59.9	0.8	---	0.3
Rec., group, soc. wkrs.	1.0	1.0	---	0.3	1.0	---	0.8	0.4	---	0.3
Social scientists	0.8	---	---	0.8	0.3	---	0.4	0.6	0.6	3.1
Teachers, elem., sec.	7.9	6.0	10.4	0.9	42.0	0.5	1.2	5.0	7.7	11.7
College pres., & professors	2.6	2.5	7.8	0.5	4.4	1.6	1.0	6.2	4.5	2.9
Technicians	1.6	1.0	6.8	0.2	1.4	2.8	1.2	2.9	5.4	4.0
All other	16.1	11.1	16.1	7.5	13.2	8.3	23.0	53.7	22.6	8.5
Managers, offs., props.	20.9	32.2	19.2	34.7	15.0	20.4	4.3	10.2	14.6	20.7
Clerical & kin. workers	6.9	8.5	5.2	9.6	5.8	3.5	1.4	6.8	4.2	9.7
Sales workers	7.5	7.0	4.1	17.7	2.1	2.8	1.0	5.6	9.5	11.2
Craftsmen, fore., kin.	4.1	1.5	4.7	4.1	3.7	7.7	1.4	2.9	2.1	2.9
Operatives, kin.	1.7	2.0	---	2.0	3.7	1.0	1.0	1.0	2.1	1.0
Service wkrs.	1.8	2.0	1.0	1.4	3.7	0.6	1.8	2.1	2.4	2.9

Appendix Table 9 (cont.)

Experienced Civilian Labor Force by Major Field of College Study, by Major Occupation Groups and Selected Professional Occupations: Men Aged 22-64 Who Had Completed 3 or More Years of College, April 1963

Occupation	Field of College Major									
	All fields	Agri- cul.	Biol. sci.	Busi- ness	Educa- tion	Engin- eering	Health sci.	Human- ities	Phys. sci.	Social sci.
Farmers & farm laborers	1.4	16.1	---	1.0	0.8	0.6	0.4	---	1.5	3.4
Laborers, exc. farm.	0.5	---	1.0	1.1	0.8	---	---	---	0.6	1.6

Note: The sums of components may not equal totals because of rounding.

Appendix Table 10

Experienced Civilian Labor Force by Major Field of College Study, by Major Occupation Groups and Selected Professional Occupations: Women Aged 22-64 Who Had Completed 3 or More Years of College, April 1963

Occupation	Field of College Major									
	All fields	Biolog. sci.	Busi-ness	Educa-tion	Health sci.	Human-ities	Phys. sci.	Social sci.	All other	Not rptd.
Total - No. (in 1000s)	2,628	86	225	1,238	263	411	26	172	147	60
Percent	100.0	100.0	100.0	100.0	100.0	100.0	(1)	100.0	100.0	100.0
Prof., tech., & kin.	70.5	76.7	20.4	82.1	82.5	59.6	(1)	66.3	72.1	35.0
Rec., group, soc. wkrs.	1.6	---	---	0.6	---	0.7	(1)	16.3	2.0	---
Teachers, elem., sec.	46.0	36.0	14.2	73.8	4.2	28.7	(1)	32.6	20.4	16.7
College pres., & profes.	1.2	---	---	0.6	2.7	2.9	(1)	1.2	---	---
Technicians, med. & dent.	1.3	3.5	---	---	6.8	0.5	(1)	---	4.8	10.0
All other	20.4	38.3	6.7	7.1	69.3	27.0	(1)	16.3	45.7	8.3
Managers, offs., props.	5.5	5.8	10.2	3.3	3.4	7.3	(1)	7.6	7.5	18.3
Clerical & kin. wkrs.	16.0	11.6	60.9	9.1	3.0	21.2	(1)	19.2	12.9	20.0
Sales workers	2.8	3.5	5.3	1.6	5.3	4.6	(1)	1.7	2.0	---
Service workers	3.3	2.3	2.7	2.1	4.6	4.4	(1)	4.1	3.4	20.0
All other	1.8	---	0.9	1.7	1.6	2.6	(1)	0.6	2.8	6.7

Note: The sums of components may not equal totals because of rounding.

(1) Percent not shown where base is less than 50,000.



Appendix Table 11

Experienced Civilian Labor Force by Occupation or Field Studies, by Major Occupation Group:  
Men Aged 22-64 Who Had Completed Less Than 3 Years of College and Had Formal Occupational  
Training, April 1963

Occupation or field studied	Major Occupation Group										Laborers Farmers except & farm lbs. mine
	Total	No. (1) (in 1000s)	(2) Per- cent	Profes- sional	Mgrs., Cleri- offs., cal props. wks.	Sales wks. etc.	Crafts- men, etc.	Opera- tives	Serv- ice wks.	Farm & mine	
Total	15,108	100.0	7.9	14.9	8.4	5.5	29.1	18.9	6.9	4.0	4.4
Accountant & auditor	369	100.0	21.1	26.3	26.8	7.0	8.1	7.6	2.2	---	0.5
Draftsman	746	100.0	26.1	12.6	7.4	4.3	25.1	15.0	5.6	1.3	2.5
Technician, electronic	719	100.0	19.3	10.2	8.3	4.7	35.2	16.1	1.9	1.1	3.1
Tech., oth. eng. & phy. sci.	60	100.0	23.3	18.3	11.7	3.3	16.7	23.3	6.7	---	---
Bookkeeper	364	100.0	7.1	29.4	15.4	6.3	17.3	17.9	4.1	0.8	1.9
Brickmason	203	100.0	1.0	12.3	10.8	2.5	47.8	11.8	5.9	3.9	3.4
Carpenter	493	100.0	2.8	9.5	4.3	4.7	44.4	21.3	4.3	3.4	5.3
Compositor & typesetter	154	100.0	3.2	6.5	4.5	9.1	55.2	9.1	9.1	---	3.2
Electrician	781	100.0	6.1	10.4	4.5	3.5	50.7	15.6	4.4	1.3	3.5
Lineman & serviceman	211	100.0	4.3	4.7	4.7	2.8	58.3	10.4	6.6	2.4	5.2
Machinist	616	100.0	5.8	13.3	6.2	1.3	45.5	18.5	4.2	1.5	3.7
Mechanic & repair, aircd.	682	100.0	11.4	13.0	6.9	4.1	35.5	19.9	2.9	3.2	2.8
Mechanic & repair, auto	1,564	100.0	3.8	12.1	6.3	3.0	32.9	25.4	6.8	2.8	6.8
Mechanic & repair, radio & TV	644	100.0	6.5	14.8	8.7	3.9	35.1	16.8	5.9	2.5	5.9
Painter	149	100.0	1.3	9.4	2.0	2.0	70.5	13.4	1.3	---	---
Plumber	281	100.0	2.5	14.2	0.7	0.7	61.6	10.7	3.6	3.2	2.8
Tinsmith & coppersmith	242	100.0	8.3	11.6	2.9	0.8	51.2	16.5	3.7	2.5	2.9
Welder	604	100.0	1.2	8.1	1.7	5.3	29.6	40.2	5.6	3.3	5.0
Barber	230	100.0	2.2	7.4	4.3	0.9	7.0	13.5	57.4	2.2	4.8

Appendix Table 11 (cont.)

Experienced Civilian Labor Force by Occupation or Field Studies, by Major Occupation Group:  
Men Aged 22-64 Who Had Completed Less Than 3 Years of College and Had Formal Occupational  
Training, April 1963

Occupation or field studied	Major Occupation Group									
	Total									
	No. (in 1000s)	(1) Per- (2) cent	Mgrs., Cleri- Profes- offs., cal sional props. wkrs.	Sales men, etc.	Crafts- men, etc.	Opera- tives wkrs.	Serv- ice wkrs.	Farmers & farm lbrs.	except farm & mine	Laborers
Merchandising	170	100.0	4.1	23.5	10.0	33.5	12.4	10.0	2.9	---
General trades	1,096	100.0	6.6	12.6	7.1	7.3	33.9	22.7	3.7	2.6
Business & commer.	2,327	100.0	7.3	21.8	16.2	11.0	18.9	13.1	6.1	2.7
Agriculture	1,272	100.0	2.9	13.2	5.9	3.9	18.6	22.2	3.4	24.0
Other	7,410	100.0	11.2	15.9	8.4	6.1	27.2	16.4	9.4	2.0
Not reported	591	100.0	11.7	17.3	5.6	5.8	26.6	21.2	5.1	2.7
										4.2

(1) Since about one-third of men with training reported training in more than one occupation or field, the sum of the occupations and fields studied does not equal the total shown here.

(2) The sums of components may not equal totals because of rounding.

Appendix Table 12

Experienced Civilian Labor Force by Occupation or Field Studied, by Major Occupation Group:  
Women Aged 22-64 Who Had Completed Less Than 3 Years of College and Had Formal Occupational  
Training, April 1963

Occupation or field studied	Total		Major Occupation Group									
	No. (1) (in 1000s)	Per- (2) cent	Mgrs., Cleri- cal Sales men, etc.	Crafts- men, etc.	Opera- tives	Pri- vate hshld. wkrs.	Serv- ice wkrs. exc.	farmers & farm labrs.	mine	Laborers except		
Total	8,447	100.0	8.0	5.6	45.8	8.1	0.8	10.9	4.0	15.4	1.3	0.2
Nurse, professional	465	100.0	66.2	0.6	10.8	1.1	0.6	2.6	4.1	13.8	---	---
Technician, med., dent.	64	100.0	46.9	4.7	34.4	3.1	---	6.2	---	6.2	---	---
Bookkeeper	323	100.0	---	11.5	46.4	14.9	---	13.0	1.5	11.5	0.9	---
Office machine operator	277	100.0	1.1	3.2	73.3	5.8	---	3.6	2.5	9.7	0.7	---
Secretary	1,260	100.0	3.4	7.0	71.1	5.2	0.2	4.8	1.4	5.9	0.9	0.2
Stenographer	1,004	100.0	5.0	6.4	59.2	9.9	0.2	9.1	1.6	7.2	1.2	---
Telephone operator	124	100.0	4.0	2.4	70.2	8.1	---	7.3	---	9.7	---	---
Typist	319	100.0	5.3	3.4	42.3	18.2	0.9	15.7	0.6	12.2	0.9	0.6
Dressmaker	175	100.0	6.3	6.3	12.6	6.9	3.4	44.6	8.0	12.0	---	---
Hairdresser & cosm.	475	100.0	0.4	1.9	9.5	4.6	---	9.5	3.4	69.9	1.1	---
Nurse, practical	378	100.0	9.8	1.3	11.9	5.6	---	4.0	8.7	57.1	1.3	0.5
Merchandising	74	100.0	---	37.8	25.7	23.0	2.7	6.8	---	6.8	---	---
Home economics	1,078	100.0	4.3	3.2	24.8	11.2	1.9	18.9	10.8	21.5	3.6	---
Business & commerc.	2,810	100.0	4.7	5.8	61.1	7.5	0.5	8.4	1.9	8.9	1.1	0.1
All other	1,483	100.0	10.5	7.9	31.0	9.4	1.8	15.4	5.6	15.4	2.4	0.6
Not reported	203	100.0	11.3	14.3	38.4	7.4	1.0	5.9	3.4	17.2	1.5	---

(1) Since about one-fifth of women with training reported training in more than one occupation or field, the sum of the occupations and fields studied does not equal the total shown here.

(2) The sums of components may not equal totals because of rounding.