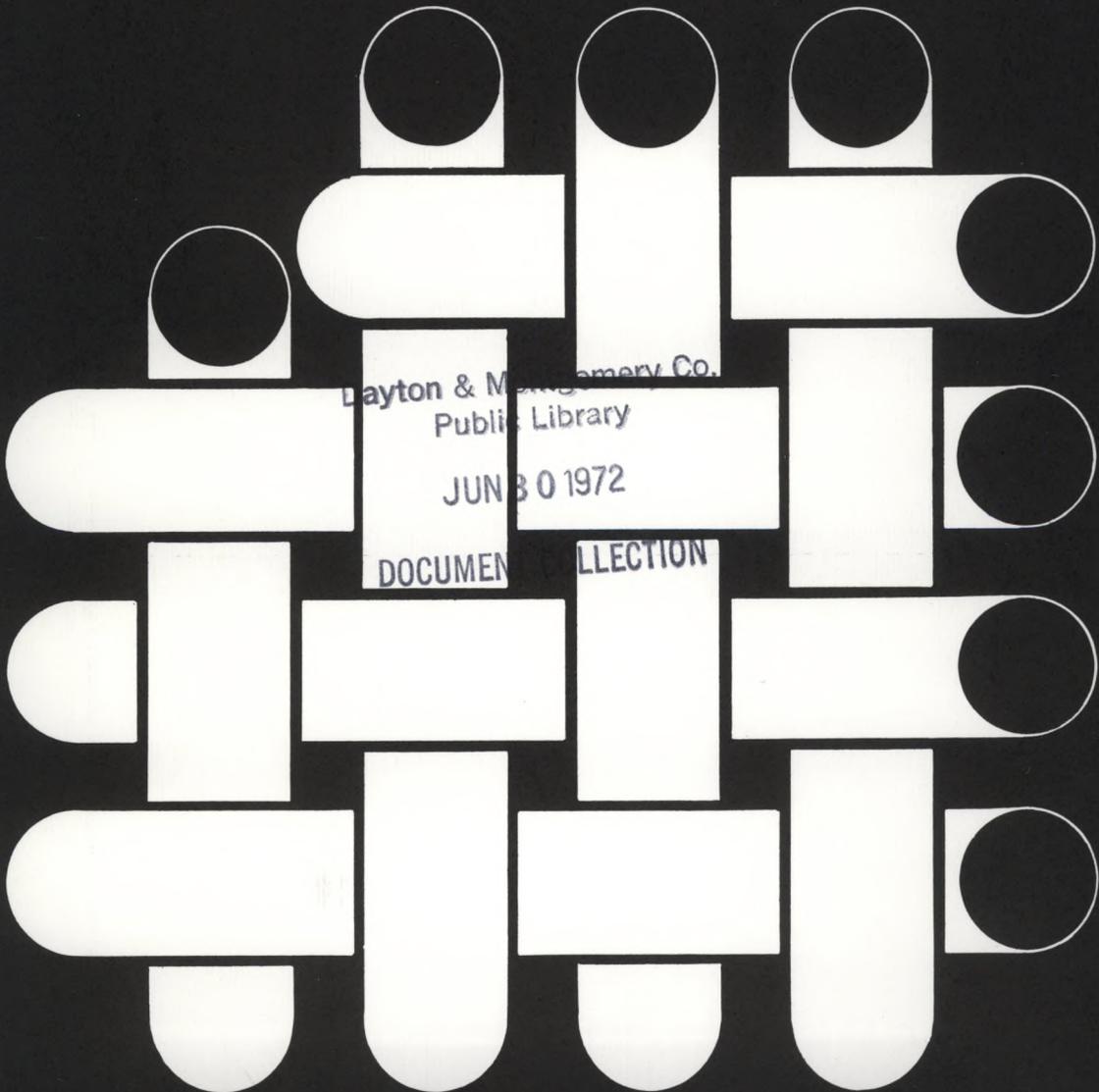


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Industry
Wage Survey
**Synthetic Fibers,
December 1970**

Bulletin 1740

U.S. DEPARTMENT OF LABOR
Bureau of Labor Statistics
1972



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**U.S. DEPARTMENT OF LABOR
J. D. Hodgson, Secretary
BUREAU OF LABOR STATISTICS
Geoffrey H. Moore, Commissioner
1972**



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Preface

This bulletin summarizes the results of a Bureau of Labor Statistics survey of wages and related benefits in the synthetic fibers industries in December 1970. A similar survey was conducted in February–April 1966 (BLS Bulletin 1540).

Summary tabulations, providing information for the United States and the South, were issued in August 1971. Copies of this release are available from the U.S. Department of Labor, Bureau of Labor Statistics, Washington, D.C. 20212, or any of its regional offices.

This study was conducted in the Bureau's Office of Wages and Industrial Relations. The analysis was prepared by Donald S. Ridzon in the Division of Occupational Wage Structures. Field work for the survey was directed by the Assistant Regional Directors for Operations.

Other reports available from the Bureau's program of industry wage studies, as well as the addresses of the Bureau's regional offices, are listed at the end of this bulletin.

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Synthetic Fibers, December 1970

Summary

Straight-time earnings of production and related workers in plants manufacturing synthetic fibers averaged \$3.19 an hour in December 1970. One-tenth of these workers earned more than \$4 an hour, while a similar proportion earned less than \$2.50. Men, accounting for seven-tenths of the labor force in these plants, averaged \$3.31 an hour. Women averaged \$2.89, and were largely employed in the finishing departments and at inspection and testing jobs.

Seven-tenths of the 67,428 production workers covered by the survey¹ were in plants primarily producing noncellulosic fibers such as nylon. They averaged \$3.31 an hour. The remaining workers were in plants manufacturing cellulosic fibers (e.g. rayon) and averaged \$2.88.

Among the occupations studied separately, highest averages in both industries were recorded for skilled maintenance jobs. The nationwide averages for these jobs ranged between \$3.35 and \$3.52 an hour in cellulosic plants, and they were near or above \$4 an hour in noncellulosic plants. Chemical operators recorded the highest average hourly earnings (\$2.97 in cellulosic and \$3.69 in noncellulosic plants) of the processing occupations. Janitors, averaging \$2.49 an hour in cellulosic plants and \$2.64 in noncellulosic plants, were the lowest paid.

All production workers covered by the study were in establishments providing paid holidays (usually 8 or 9 annually); paid vacations; and life, hospitalization, and surgical insurance benefits. Retirement pension plans, in addition to Federal social security, were available to virtually all production workers.

Industry characteristics

The survey covered establishments engaged in the production of the two principal types of synthetic (man-made) fibers suitable for further manufacturing on textile processing equipment: Cellulosic fibers, such as rayon and acetate, and other synthetic organic fibers (noncellulosic), such as nylons, acrylics, and polyesters. The 49 establishments within the scope of the survey generally limited their production to one of these two major types of fibers.

Employment and production trends. Establishments engaged in synthetic fibers manufacturing employed 67,428 production and related workers in December 1970. This represented an 8 percent increase since the last survey of the industries conducted in February–April 1966.² Production worker employment in noncellulosic fibers plants amounted to 47,877—up 34 percent since 1966. Cellulosic plants, on the other hand, experienced a 27 percent employment decline during the same period.

This combination of expanding employment in the noncellulosic industry and a declining labor force in cellulosic plants continued a trend noted in the first half of the 1960's. From October 1958³ to December 1970, employment increased 244 percent in the noncellulosic fibers industry and declined 40 percent in the cellulosic industry. As a result of these employment changes, noncellulosic fibers manufacturing accounted for 71 percent of the industries' production workers in December 1970, compared with 57 percent in February–April 1966 and only 30 percent in October 1958.

While employment in the noncellulosic industry advanced, production did likewise, increasing from 491 million pounds of fibers in 1958 to 3,585 million in 1970.⁴ During the same period, the production of cellulosic fibers remained relatively stable (averaging 1,335 million pounds a year) despite declining employment.

Output per production worker man-hour in synthetic fibers manufacturing (both industries combined) increased 75 percent between 1958 and 1970, based on estimates published by the Bureau of Labor Statistics.⁵ Increasing at an average rate of 4.8 percent annually during this period, output per production worker man-hour made its greatest 1-year advance between 1967 and 1968—13

¹ See appendix A for scope and method of survey. Wage data contained in this bulletin exclude premium pay for overtime and for work on weekends, holidays, and late or other shifts.

² See *Industry Wage Survey: Synthetic Fibers, February–April 1966* (BLS Bulletin 1540, 1967).

³ See *Wage Structure: Synthetic Fibers, October 1958* (BLS Report 143, 1959).

⁴ Source: *Textile Organon*, January–February 1971, Textile Economics Bureau, Inc.

⁵ *Indexes of Output Per Man-Hour, Selected Industries, 1939 and 1947-1970* (BLS Bulletin 1692, 1971). Data for 1970 are preliminary.

percent. Similar information was not developed separately for each of the two industries.

Products and processes. The three basic production processes for man-made fibers are: (1) The chemical preparation of the spinning solution; (2) the transformation of the spinning solution into solidified filaments; and (3) the finishing or textile operations which prepare the product for sale. Differences in the methods used to perform these operations are quite pronounced and account, in large part, for variations in the occupational patterns found among individual establishments.

Processes in the preparation of the spinning solution vary according to the type of fiber produced. Rayon and acetate originate from cellulose—a fibrous substance usually obtained from materials such as wood pulp. Noncellulosic fibers, on the other hand, are derived from chemical compounds. The preparation of spinning solutions for noncellulosics requires much equipment but relatively few employees. More manual operations are required for cellulotics.

Spinning solutions are converted into solidified filaments by one of two means. Under the wet-process method, the spinning solution is forced through tiny holes of a spinneret into an acid bath which coagulates the fine streams of solutions. The dry-process method uses warm air instead of acid to solidify the filaments. When the wet process is used, the filaments must be washed free of the acid and then dried; the dry process does not require these steps. Rayon (viscose) uses the wet-process method, whereas acetate and most noncellulosic fibers use the dry-process method.

The finishing (textile) operations depend upon the form in which the product is to be sold. Continuous filament yarn is twisted (multifilament) and wound on bobbins for shipment. Tow, on the other hand, is a rope-like strand of filaments which is packaged in bulk and does not require winding. Staple (tow cut to specified lengths) is handled in a manner similar to the processing of tow, except for the added operations of crimping and cutting.

Approximately 60 percent of the production workers in each industry were in plants whose principal product was multifilament yarn. In the cellulosic industry, plants employing 7 percent of the workers primarily manufactured monofilament; 20 percent of the workers were in plants primarily manufacturing staple. In the noncellulosic industry, 11 percent of the workers were in plants mainly manufacturing monofilament and 25 percent were in those whose principal product was staple.

Location. Almost seven-eighths of the workers in cellulosic fibers manufacturing and more than nine-tenths in the noncellulosic industry were employed in the South.⁶ North Carolina, South Carolina, Tennessee, and Virginia were the States with the heaviest employment concentrations.

Plants located in metropolitan areas⁷ employed about one-fifth of the work force in the cellulosic fibers industry and about two-fifths of the workers in non-cellulosic fibers manufacturing.

Size of establishment. Synthetic fibers manufacturing plants generally employ 1,000 workers or more and are typically owned by multiplant companies.⁸ Plants of this size accounted for seven-eighths or more of the workers in both industries. Plants with at least 2,500 workers were more common in noncellulosic manufacturing, where they employed slightly over one-half of the work force. Nearly three-fourths of the workers in cellulosic manufacturing were in plants reporting from 1,000 to 2,499 workers, while those with 2,500 or more accounted for about one-eighth.

Unionization. All cellulosic fibers plants studied had collective bargaining agreements covering a majority of their production workers at the time of the survey. Non-cellulosic plants employing slightly over two-fifths of that industry's work force had such agreements. The major unions in the cellulosic fibers industry are the Textile Workers Union of America and the United Textile Workers of America, both AFL-CIO affiliates. In non-cellulosics, single-firm independent unions represent a substantial proportion of the workers under collective bargaining agreements.

Method of wage payment. Ninety-five percent of the workers covered by the survey were time rated, usually under formal plans with single rates for specified occupations. (See table 9.) Incentive workers, found most frequently in the finishing departments of both industries, accounted for about 10 percent of the workers in cellulosic plants, but for less than 5 percent in noncellulosic plants.

Average hourly earnings

Straight-time earnings of production workers in synthetic fibers manufacturing averaged \$3.19 an hour in

⁶ For a definition of the South as used in this survey, see footnote 3, table A-1.

⁷ Standard Metropolitan Statistical Areas, as defined by the U.S. Office of Management and Budget through January 1968.

⁸ Companies operating two establishments or more primarily engaged in the manufacture of synthetic fibers.

December 1970.⁹ (See table 1.) In the noncellulosic fibers industry, where seven-tenths of the 67,428 workers were employed, earnings averaged \$3.31; in the cellulosic fibers industry the average was \$2.88. Wage levels in both industries were up about 28 percent since February–April 1966.¹⁰

The growing predominance of the higher paying non-cellulosic fibers industry, noted earlier in this report, has had a substantial impact on the level of earnings for all synthetic fibers manufacturing combined. For example, had the employment relationship between noncellulosic and cellulosic fibers plants remained constant since 1958, the average straight-time earnings of production workers covered by the 1970 survey would have been \$3.01 an hour, instead of \$3.19.¹¹

Men, making up three-fourths of the work force in cellulosic plants, averaged \$2.96 an hour, compared with \$2.66 for women. In noncellulosic plants, men accounted for seven-tenths of the work force and averaged \$3.46—49 cents an hour more than women. Women in both industries were largely employed in the finishing departments and at inspection and testing jobs. Differences in average pay levels for men and women may be the result of several factors, including differences in the distribution of the sexes among establishments and jobs having disparate pay levels. Also, differences noted in averages for men and women in the same job may reflect minor differences in duties. Job descriptions used in classifying workers in wage surveys are usually more generalized than those used in individual establishments because allowance must be made for minor differences among establishments in specific duties performed.

Approximately 10 percent of the production workers earned less than \$2.50 an hour, while a similar percentage earned \$4 or more. (See table 2.) In both industries, most of the workers paid less than \$2.50 an hour were women. Workers earning at least \$4 were nearly all men and, with few exceptions, were employed in noncellulosic fibers plants. The middle half of the production workers in the earnings array for cellulosic fibers plants fell between \$2.63 and \$3.08 an hour; the corresponding range in noncellulosic fibers plants was \$2.94 to \$3.66. Contributing to the dispersion of individual earnings were differences in establishment pay levels and the wide range of skill requirements.

Occupational earnings

A number of occupations representing the various skill levels and activities found in the industries were selected for separate study. These occupations accounted for about seven-tenths of the production workers covered by the survey. In cellulosic fibers plants, average

hourly earnings in these occupations ranged from \$2.49 for janitors to \$3.52 for pipefitters. (See table 5.) Other averages above \$3 an hour fell between \$3.35 and \$3.45 for several maintenance jobs, including carpenters, instrument repairmen, and millwrights. Chemical operators, numerically the largest group studied separately in cellulosic plants, averaged \$2.97 an hour—2 cents more than dry-process spinners, 14 cents more than wet-process spinners, and 31 cents more than yarn winders.

In noncellulosic fibers plants, occupational averages ranged from \$2.64 an hour for janitors to \$4.28 for instrument repairmen. (See table 7.) Others averaging at least \$4 an hour were carpenters, electricians, machinists, and general mechanics. Drawtwist operators, numerically the largest group studied, with one-sixth of the work force, averaged \$3 an hour. Chemical operators and dry-process spinners averaged \$3.69 and \$3.40, respectively.

Where comparisons were possible, occupational averages were found to be higher in noncellulosic fibers manufacturing than in cellulose, except for material handling laborers, who averaged 4 cents an hour more in cellulosic plants. Average wage advantages for non-cellulosic workers ranged from 84 cents an hour for instrument repairmen to 15 cents for janitors; typically, the differences fell between 45 and 75 cents an hour.

Earnings of individual workers also varied greatly within the same job and industry. In many instances, hourly earnings of the highest paid workers exceeded those of the lowest paid in the same job by \$1 or more in cellulose and by \$1.50 or more in noncellulose. Thus, some workers in comparatively low-paid jobs (as measured by the average for all workers) earned more than some workers in jobs for which higher averages were recorded. For example, the following tabulation indicates a considerable overlap of individual rates for tow

⁹ The straight-time average hourly earnings in this bulletin differ in concept from the gross average hourly earnings published in the Bureau's monthly hours and earnings series (\$3.44 in December 1970). Unlike the latter, the estimates presented here exclude premium pay for overtime and for work on weekends, holidays, and late or other shifts. Average earnings were calculated by summing individual hourly earnings and dividing by the number of individuals; in the monthly series, the sum of the man-hour totals reported by establishments in the industry was divided into the reported payroll totals.

The estimate of the number of production workers within the scope of the study is intended only as a general guide to the size and composition of the labor force included in the survey. It differs from the number published in the monthly series (77,900 in December 1970) mainly because the advance planning necessary to make the survey required the use of lists of establishments assembled considerably in advance of data collection. Thus, establishments new to the industries are omitted, as are establishments originally classified in the synthetic fibers industries but found to be in other industries at the time of the survey.

¹⁰ Op. cit., BLS Bulletin 1540.

¹¹ The \$3.01 figure was obtained by weighting the December 1970 average wage level for each industry by the corresponding 1958 employment figures.

operators and chemical operators in noncellulosic fibers plants, despite a 45-cent difference in their average hourly earnings:

Hourly earnings	Chemical operators	Tow operators
Average hourly earnings	\$3.69	\$3.24
Total number of workers	3,130	1,964
Under \$3.00	235	359
\$3.00 and under \$3.20	369	388
\$3.20 and under \$3.40	277	803
\$3.40 and under \$3.60	217	24
\$3.60 and under \$3.80	374	348
\$3.80 and under \$4.00	508	42
\$4.00 and over	1,150	-

Much of the earnings dispersion within individual jobs reflects differences in establishment pay levels.

Establishment practices and supplementary wage provisions

Data were also obtained for production and office-workers on certain establishment practices, including work schedules and selected supplementary wage benefits such as paid holidays, paid vacations, and health, insurance, and retirement plans.

Scheduled weekly hours and shift practices. Over nine-tenths of the survey's production workers were in plants predominantly scheduling day-shift employees 40 hours a week. (See table 10.) Forty-hour schedules were in effect for all of the office workers.

Shift work is widely used because of the continuous nature of synthetic fibers manufacturing operations. Rotating shifts, whereby individuals periodically worked day, evening, and night schedules, accounted for slightly over one-half of the production workers in cellulosic plants and about four-fifths in noncellulosic plants at the time of the survey. Shift differentials for these workers varied considerably by establishment and schedule of work. (See tables 11-13.) Workers assigned to day schedules of rotating shifts were frequently provided a paid lunch period not given to workers on fixed day shifts or in some cases received a cents-per-hour or percentage differential above fixed day-shift rates.¹² When assigned to evening or night schedules, workers on rotating shifts usually received differential pay and, in many instances, a paid lunch period as well. Twelve percent of the workers in cellulosic fibers plants and less than 2 percent in non-cellulosic plants were assigned to either oscillating¹³ or

fixed evening and night schedules. Fixed day-shift schedules accounted for one-third of the workers in cellulosic plants and slightly less than one-fifth in noncellulosic plants.

Paid holidays. All of the workers covered by the survey were in establishments providing paid holidays. (See table 14.) In cellulosic plants, three-fourths of the production workers and slightly over one-half of the office-workers received 8 days annually. Holiday provisions were somewhat more liberal in noncellulosic plants, where seven-tenths of the production workers and nearly four-fifths of the officeworkers received 9 paid holidays a year.

Paid vacations. Paid vacations, after qualifying periods of service, were also provided to all workers. (See table 15.) For production workers in cellulosic plants, vacation payments were usually based on a stipulated percentage of the employee's earnings, which were converted to an equivalent time basis for this survey.¹⁴ Vacation payments for a large majority of the production workers in noncellulosic plants, and for all of the officeworkers in both industries, were determined on the basis of the employee's regular pay for a specified length of time.

Typical provisions for production workers in cellulosic plants were 1 week of vacation pay after 1 year of service, 2 weeks after 3 years, 3 weeks after 10 years, 4 weeks after 20 years, and 5 weeks after 25 years. Similar provisions applied to officeworkers, except that after 1 year of service, 2 weeks were usually provided and after 25 years, 4 weeks. In the noncellulosic industry, the usual provisions for both production and officeworkers were 2 weeks of vacation pay after 1 year of service, 3 weeks after 5 years, 4 weeks after 10 years, and 5 weeks after 20 years.

Health, insurance, and retirement plans. Life, hospitalization, and surgical insurance were provided for all workers. (See table 16.) In addition, accidental death and dismemberment insurance, sickness and accident insurance, basic medical, and major medical insurance were widespread; the incidence of these plans, however, varied substantially between the two industries. Major medical insurance, for example, applied to all production workers in cellulosic fibers manufacturing, compared with about three-fifths of the production workers in noncellulosic. Employers in both industries typically paid the total cost of most of the benefit plans previously mentioned. Hospitalization, surgical, basic medical, and major medical benefits usually covered employees and their dependents. Formal sick leave plans were available

¹² In 6 of the 13 cellulosic plants visited and 6 of the 26 non-cellulosic plants visited, fixed day-shift workers also received a paid lunch period (usually 30 minutes).

¹³ Workers assigned to oscillating shifts were of two groups: Those alternating between day and evening schedules, and those alternating between evening and night schedules.

¹⁴ For example, a payment of 2 percent of annual earnings was considered the equivalent of 1 week's pay.

to one-half of the officeworkers in cellulosic plants, but to none of the production workers. Corresponding proportions in noncellulosic plants were slightly more than four-fifths and nearly three-fifths.

Retirement pensions, in addition to Federal social security, were available to nine-tenths or more of the production and officeworkers in both industries. Such plans were nearly always financed entirely by the employers. Plans for retirement severance pay were virtually nonexistent.

Other selected benefits. Provisions for paid leave while

attending funerals of family members and while serving as a juror covered nearly all of the workers in the survey. (See table 17.) Technological severance pay plans, providing payments to workers permanently separated from employment because of a technological change or plant closing, were available to two-thirds of the production workers in the cellulosic industry and to nearly two-fifths of those in the noncellulosic industry. The proportions of officeworkers covered by such provisions were nearly two-fifths in cellulosic plants and three-tenths in noncellulosic plants.

Table 1. Average hourly earnings: By selected characteristics

(Number and average straight-time hourly earnings¹ of production workers in synthetic fibers manufacturing establishments by selected characteristics, United States and South, December 1970)

Item	United States ²		South	
	Number of workers	Average hourly earnings	Number of workers	Average hourly earnings
All production workers	67,428	\$3.19	62,110	\$3.20
Men	47,657	3.31	43,871	3.33
Women	19,771	2.89	18,239	2.89
Cellulosic fibers establishments ...	19,551	2.88	16,602	2.86
Men	14,458	2.96	12,408	2.93
Women	5,093	2.66	4,194	2.63
Noncellulosic fibers establishments.....	47,877	3.31	45,508	3.33
Men	33,199	3.46	31,463	3.49
Women	14,678	2.97	14,045	2.97

¹ Excludes premium pay for overtime and for work on weekends, holidays, and late or other shifts.

² Includes data for regions in addition to the South.

Table 2. Earnings distribution: All establishments

(Percent distribution of production workers in synthetic fibers manufacturing establishments by average straight-time hourly earnings,¹ United States and South, December 1970)

Average hourly earnings ¹	United States ²			South		
	All workers	Men	Women	All workers	Men	Women
Under \$2.00	0.3	0.3	0.3	0.3	0.3	0.3
\$2.00 and under \$2.10 .....	.4	.2	.8	.4	.2	.8
\$2.10 and under \$2.20	1.1	.1	3.5	1.2	.1	3.7
\$2.20 and under \$2.30	2.2	.9	5.2	2.3	1.0	5.6
\$2.30 and under \$2.40	3.6	2.0	7.4	3.4	2.2	6.2
\$2.40 and under \$2.50	2.9	3.4	1.8	3.0	3.6	1.3
\$2.50 and under \$2.60	2.6	3.0	1.7	2.6	3.1	1.3
\$2.60 and under \$2.70	4.6	3.8	6.7	4.9	4.0	7.1
\$2.70 and under \$2.80	8.2	5.9	13.9	8.6	6.0	14.9
\$2.80 and under \$2.90	4.4	3.3	7.1	4.2	3.0	7.0
\$2.90 and under \$3.00	8.9	9.4	7.7	7.9	8.1	7.3
\$3.00 and under \$3.10	9.6	12.0	3.9	8.5	10.5	3.7
\$3.10 and under \$3.20	8.9	5.3	17.7	9.2	5.1	18.8
\$3.20 and under \$3.30	4.9	5.5	3.5	5.0	5.6	3.4
\$3.30 and under \$3.40	7.5	4.7	14.3	8.0	5.0	15.2
\$3.40 and under \$3.50	2.9	3.9	.6	2.5	3.3	.4
\$3.50 and under \$3.60	3.3	4.4	.6	3.4	4.7	.4
\$3.60 and under \$3.70	8.3	10.9	2.1	8.9	11.7	2.1
\$3.70 and under \$3.80	1.1	1.4	.3	1.0	1.4	.2
\$3.80 and under \$3.90 .....	.8	1.1	.2	.8	1.1	.1
\$3.90 and under \$4.00	2.3	3.3	.1	2.5	3.5	(³)
\$4.00 and under \$4.10	1.6	2.2	.1	1.7	2.3	.1
\$4.10 and under \$4.20 .....	.9	1.2	(³)	.9	1.3	(³)
\$4.20 and under \$4.30	1.9	2.6	.1	2.0	2.8	(³)
\$4.30 and under \$4.40	1.1	1.6	(³)	1.2	1.7	-
\$4.40 and under \$4.50	4.9	6.9	(³)	5.3	7.5	(³)
\$4.50 and over .....	.5	.6	.1	.5	.7	.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number of workers	67,428	47,657	19,771	62,110	43,871	18,239
Average hourly earnings ¹	\$3.19	\$3.31	\$2.89	\$3.20	\$3.33	\$2.89

¹ Excludes premium pay for overtime and for work on weekends, holidays, and late or other shifts.

² Includes data for regions in addition to the South.

³ Less than 0.05 percent.

NOTE: Because of rounding, sums of individual items may not equal 100.

Table 3. Earnings distribution: Cellulosic fibers

(Percent distribution of production workers in cellulosic fibers manufacturing establishments by average straight-time hourly earnings, ¹ United States and South, December 1970)

Average hourly earnings ¹	United States ²			South		
	All workers	Men	Women	All workers	Men	Women
Under \$2.00	0.6	0.6	0.6	0.7	0.7	0.6
\$2.00 and under \$2.10 .....	.4	.2	.7	.3	.3	.4
\$2.10 and under \$2.20	2.2	(³)	8.6	2.6	-	10.3
\$2.20 and under \$2.30	3.1	.8	9.5	3.6	1.0	11.5
\$2.30 and under \$2.40	4.5	2.7	9.7	3.4	3.1	4.3
\$2.40 and under \$2.50	5.3	6.1	3.1	5.7	7.0	2.1
\$2.50 and under \$2.60	6.0	7.0	3.0	6.2	7.4	2.8
\$2.60 and under \$2.70	10.5	7.2	19.8	12.0	7.9	23.8
\$2.70 and under \$2.80	11.7	7.8	22.7	13.2	8.5	27.3
\$2.80 and under \$2.90	7.4	7.0	8.5	6.4	6.1	7.6
\$2.90 and under \$3.00	12.1	15.3	3.0	12.9	16.3	2.8
\$3.00 and under \$3.10	13.3	17.2	2.3	11.6	15.0	1.5
\$3.10 and under \$3.20	5.3	6.5	2.0	5.1	6.3	1.4
\$3.20 and under \$3.30	3.6	4.3	1.5	3.1	3.9	.6
\$3.30 and under \$3.40	1.8	2.1	1.2	1.8	2.2	.5
\$3.40 and under \$3.50	6.9	9.0	.8	6.7	8.8	.2
\$3.50 and under \$3.60	1.6	1.9	.8	1.5	1.9	.4
\$3.60 and under \$3.70 .....	.6	.6	.6	.4	.4	.4
\$3.70 and under \$3.80 .....	.7	.7	.5	.4	.4	.5
\$3.80 and under \$3.90 .....	.3	.3	.4	.2	.1	.3
\$3.90 and under \$4.00	1.7	2.3	.2	1.9	2.5	.2
\$4.00 and over .....	.3	.3	.4	.2	.1	.4
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number of workers	19,551	14,458	5,093	16,602	12,408	4,194
Average hourly earnings ¹	\$2.88	\$2.96	\$2.66	\$2.86	\$2.93	\$2.63

¹ Excludes premium pay for overtime and for work on weekends, holidays, and late or other shifts.

² Includes data for regions in addition to the South.

³ Less than 0.05 percent.

NOTE: Because of rounding, sums of individual items may not equal 100.

Table 4. Earnings distribution: Noncellulosic fibers

(Percent distribution of production workers in noncellulosic fibers manufacturing establishments by average straight-time hourly earnings, ¹ United States and South, December 1970)

Average hourly earnings ¹	United States ²			South		
	All workers	Men	Women	All workers	Men	Women
\$1.90 and under	0.2	0.2	0.2	0.2	0.2	0.2
\$2.00 and under \$2.10 .....	.4	.2	.9	.4	.2	.9
\$2.10 and under \$2.20 .....	.7	.2	1.7	.7	.2	1.7
\$2.20 and under \$2.30	1.8	.9	3.7	1.9	1.0	3.8
\$2.30 and under \$2.40	3.2	1.8	6.6	3.4	1.8	6.8
\$2.40 and under \$2.50	2.0	2.2	1.4	1.9	2.3	1.1
\$2.50 and under \$2.60	1.3	1.3	1.2	1.2	1.4	.9
\$2.60 and under \$2.70	2.3	2.3	2.2	2.3	2.4	2.1
\$2.70 and under \$2.80	6.9	5.1	10.9	6.9	5.0	11.2
\$2.80 and under \$2.90	3.2	1.7	6.6	3.3	1.8	6.8
\$2.90 and under \$3.00	7.6	6.8	9.3	6.0	4.9	8.6
\$3.00 and under \$3.10	8.1	9.7	4.5	7.4	8.7	4.4
\$3.10 and under \$3.20	10.4	4.7	23.2	10.6	4.7	24.0
\$3.20 and under \$3.30	5.5	6.0	4.2	5.6	6.3	4.2
\$3.30 and under \$3.40	9.8	5.8	18.9	10.2	6.1	19.6
\$3.40 and under \$3.50	1.3	1.7	.6	.9	1.2	.4
\$3.50 and under \$3.60	4.0	5.5	.6	4.1	5.8	.4
\$3.60 and under \$3.70	11.4	15.3	2.5	12.0	16.2	2.6
\$3.70 and under \$3.80	1.3	1.7	.3	1.3	1.8	.1
\$3.80 and under \$3.90	1.0	1.5	.1	1.1	1.5	(³)
\$3.90 and under \$4.00	2.6	3.7	.1	2.7	3.9	(³)
\$4.00 and under \$4.10	2.2	3.1	.1	2.3	3.3	(³)
\$4.10 and under \$4.20	1.2	1.8	(³)	1.3	1.9	-
\$4.20 and under \$4.30	2.6	3.7	.1	2.7	3.9	(³)
\$4.30 and under \$4.40	1.6	2.2	(³)	1.6	2.4	-
\$4.40 and under \$4.50	6.9	9.9	(³)	7.2	10.4	(³)
\$4.50 and over .....	.7	.9	.1	.7	.9	.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number of workers	47,877	33,199	14,678	45,508	31,463	14,045
Average hourly earnings ¹	\$3.31	\$3.46	\$2.97	\$3.33	\$3.49	\$2.97

¹ Excludes premium pay for overtime and for work on weekends, holidays, and late or other shifts.

² Includes data for regions in addition to the South.

³ Less than 0.05 percent.

NOTE: Because of rounding, sums of individual items may not equal 100.

Table 5. Occupational earnings: Cellulosic fibers—United States

(Number and average straight-time hourly earnings, ¹ of workers in selected occupations in cellulosic fibers manufacturing establishments, United States, December 1970)

Department, occupation, and sex	Number of workers	Average hourly earnings ¹	Number of workers receiving straight-time hourly earnings of—																											
			Under \$2.10	\$2.10 and under \$2.20	\$2.20	\$2.30	\$2.40	\$2.50	\$2.60	\$2.70	\$2.80	\$2.90	\$3.00	\$3.10	\$3.20	\$3.30	\$3.40	\$3.50	\$3.60	\$3.70	\$3.80	\$3.90	\$4.00 and over							
<u>Maintenance</u>																														
Carpenters (all men) -----	113	\$ 3.35	-	-	-	-	-	-	12	1	-	-	7	23	-	-	38	15	2	1	-	-	14	-	-	-	-	-		
Electricians (all men) -----	285	3.39	-	-	-	-	2	-	1	-	20	3	27	46	-	-	121	16	11	2	2	29	5	-	-	-	-	-		
Helpers, trades (all men) -----	332	2.87	-	-	-	11	40	-	31	44	78	64	4	12	9	2	32	-	-	-	-	1	1	3	-	-	-	-		
Instrument repairmen (all men) -----	133	3.44	-	-	-	-	-	-	-	-	7	-	-	31	-	-	62	10	3	-	-	20	-	-	-	-	-	-		
Machinists (all men) -----	264	3.40	-	-	-	-	-	-	-	-	15	5	12	29	1	-	161	16	-	4	-	21	-	-	-	-	-	-		
Mechanics, general (all men) -----	609	3.36	-	-	-	-	-	-	-	69	16	23	59	11	7	173	98	4	11	23	5	103	7	-	-	-	-	-		
Millwrights (all men) -----	425	3.36	-	-	-	-	-	-	-	3	26	5	9	69	22	1	220	70	-	-	-	-	-	-	-	-	-	-		
Pipefitters (all men) -----	328	3.52	-	-	-	-	-	-	-	2	13	2	13	-	-	-	189	19	19	4	5	61	1	-	-	-	-	-		
<u>Processing</u>																														
Chemical operators, cellulosic fiber (all men) -----	1,756	2.97	-	1	-	8	10	185	141	79	10	389	484	145	251	52	1	-	-	-	-	-	-	-	-	-	-	-	-	
Creel tenders -----	496	2.65	8	35	-	154	16	41	4	114	22	14	24	25	27	3	3	2	1	2	1	-	-	-	-	-	-	-	-	
Men -----	124	2.63	-	-	-	11	16	41	4	37	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Women -----	372	2.66	8	35	-	143	-	-	-	77	7	14	24	25	27	3	3	2	1	2	1	-	-	-	-	-	-	-	-	
Jetmen -----	150	2.73	-	-	14	13	5	13	27	18	9	1	42	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Men -----	76	2.89	-	-	-	-	4	13	-	1	7	1	42	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Spinners, dry-process -----	1,452	2.95	-	-	-	-	-	40	-	-	209	620	583	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Men -----	1,107	2.96	-	-	-	-	-	40	-	-	528	539	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Spinners, wet-process (1,376 men, 63 women) -----	1,439	2.83	-	-	-	-	103	6	87	339	408	20	404	72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Warper operators -----	739	2.62	-	-	120	55	96	9	60	357	3	8	7	5	6	3	5	2	2	-	-	1	-	-	-	-	-	-	-	
Women -----	695	2.62	-	-	120	44	96	9	44	340	3	8	7	5	6	3	5	2	2	-	-	1	-	-	-	-	-	-	-	
Washer operators (all men) -----	250	2.69	-	-	-	-	101	38	17	-	2	56	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Winders, yarn -----	1,487	2.66	-	187	182	157	8	64	410	165	73	19	19	22	23	43	20	25	17	19	12	8	14	-	-	-	-	-	-	
Women -----	1,425	2.67	-	187	182	136	8	39	394	165	73	19	19	22	23	43	20	25	17	19	12	8	14	-	-	-	-	-	-	
<u>Inspection and testing</u>																														
Laboratory assistants -----	154	2.90	-	-	3	7	6	6	10	3	40	33	13	6	13	8	1	2	2	-	-	1	-	-	-	-	-	-	-	
Men -----	119	2.88	-	-	3	7	6	5	9	2	31	22	9	-	13	7	1	1	2	-	-	1	-	-	-	-	-	-	-	
Women -----	35	2.96	-	-	-	-	-	1	1	1	9	11	4	6	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	
Physical test operators -----	324	2.55	10	19	61	37	12	27	11	66	77	2	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Women -----	248	2.46	10	19	61	37	11	27	-	66	13	2	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<u>Miscellaneous</u>																														
Guards (all men) -----	47	2.70	-	-	3	3	15	4	2	3	4	4	-	-	6	1	1	-	1	-	-	-	-	-	-	-	-	-	-	-
Janitors -----	383	2.49	4	-	86	31	56	112	56	27	7	1	2	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Men -----	339	2.49	4	-	79	26	55	96	41	27	7	1	2	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Women -----	44	2.52	-	-	7	5	1	16	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Laborers, material handling (all men) -----	282	2.75	1	-	4	24	32	30	16	79	24	30	11	4	9	4	5	3	1	1	1	1	2	1	-	-	-	-	-	
Stock clerks (all men) -----	108	2.88	-	-	-	3	6	8	2	13	20	19	27	-	-	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truckers, power ² (522 men, 7 women) -----	529	2.82	-	-	-	3	77	7	36	54	89	203	49	6	2	-	1	1	-	1	-	-	-	-	-	-	-	-	-	
Forklift -----	355	2.89	-	-	-	-	30	5	8	23	35	194	49	6	2	-	1	1	-	1	-	-	-	-	-	-	-	-	-	-

¹ Excludes premium pay for overtime and for work on weekends, holidays, and late or other shifts.
² Includes data for other power truck operators in addition to those shown separately.

Table 6. Occupational earnings: Cellulosic fibers—South

(Number and average straight-time hourly earnings¹ of workers in selected occupations in cellulosic fibers manufacturing establishments, South, December 1970)

Department, occupation, and sex	Number of workers	Average hourly earnings ¹	Number of workers receiving straight-time hourly earnings of—																			
			\$2.10 and under	\$2.20	\$2.30	\$2.40	\$2.50	\$2.60	\$2.70	\$2.80	\$2.90	\$3.00	\$3.10	\$3.20	\$3.30	\$3.40	\$3.50	\$3.60	\$3.70	\$3.80	\$3.90	\$4.00 and over
			\$2.20	\$2.30	\$2.40	\$2.50	\$2.60	\$2.70	\$2.80	\$2.90	\$3.00	\$3.10	\$3.20	\$3.30	\$3.40	\$3.50	\$3.60	\$3.70	\$3.80	\$3.90	\$4.00	over
<u>Maintenance</u>																						
Carpenters (all men)	103	\$3.34	-	-	-	-	-	12	1	-	-	7	23	-	-	32	14	-	-	14	-	
Electricians (all men)	254	3.36	-	-	2	-	1	-	20	3	27	46	-	-	100	16	10	-	-	28	-	
Helpers, trades (all men)	277	2.81	-	11	40	-	29	44	78	45	-	-	-	-	30	-	-	-	-	-	-	
Instrument repairmen (all men)	130	3.44	-	-	-	-	-	-	7	-	-	31	-	-	59	10	3	-	-	20	-	
Machinists (all men)	245	3.39	-	-	-	-	-	-	15	5	12	29	1	-	143	16	-	4	-	20	-	
Mechanics, general (all men)	504	3.31	-	-	-	-	-	69	16	23	59	11	-	173	51	-	-	-	-	102	-	
Millwrights (all men)	425	3.36	-	-	-	-	-	3	26	5	9	69	22	1	220	70	-	-	-	-	-	
Pipefitters (all men)	287	3.52	-	-	-	-	-	2	13	2	13	-	-	-	162	19	14	2	-	60	-	
<u>Processing</u>																						
Chemical operators, cellulosic fiber (all men)	1,512	2.95	-	-	8	9	180	138	78	6	320	436	116	177	44	-	-	-	-	-	-	
Creel tenders	250	2.55	35	-	48	16	40	-	111	-	-	-	-	-	-	-	-	-	-	-	-	
Men	103	2.60	-	-	11	16	40	-	36	-	-	-	-	-	-	-	-	-	-	-	-	
Women	147	2.52	35	-	37	-	-	-	75	-	-	-	-	-	-	-	-	-	-	-	-	
Jetmen	128	2.69	-	14	13	5	13	27	17	3	-	28	8	-	-	-	-	-	-	-	-	
Men	54	2.87	-	-	-	4	13	-	1	-	28	8	-	-	-	-	-	-	-	-	-	
Spinners, wet-process (all men)	1,251	2.82	-	-	-	103	-	85	332	256	-	403	72	-	-	-	-	-	-	-	-	
Warper operators	608	2.61	-	120	19	45	9	60	355	-	-	-	-	-	-	-	-	-	-	-	-	
Women	564	2.61	-	120	8	45	9	44	338	-	-	-	-	-	-	-	-	-	-	-	-	
Washer operators (all men)	250	2.69	-	-	-	101	38	17	-	2	56	36	-	-	-	-	-	-	-	-	-	
Winders, yarn	1,307	2.64	187	182	49	8	62	409	165	72	18	12	17	16	21	9	13	15	19	12	7	
Women	1,245	2.65	187	182	28	8	37	393	165	72	18	12	17	16	21	9	13	15	19	12	7	
<u>Inspection and testing</u>																						
Laboratory assistants	111	2.87	-	3	7	6	6	8	3	28	16	13	6	1	8	1	2	2	-	-	1	
Men	84	2.84	-	3	7	6	5	7	2	19	13	9	-	1	7	1	2	-	-	1	-	
Women	27	2.97	-	-	-	1	1	1	9	3	4	6	-	1	-	1	-	-	-	-	-	
Physical test operators	249	2.49	19	61	35	12	27	11	66	14	2	-	2	-	-	-	-	-	-	-	-	
Women	236	2.48	19	61	35	11	27	-	66	13	2	-	2	-	-	-	-	-	-	-	-	
<u>Miscellaneous</u>																						
Guards (all men)	44	2.68	-	3	3	15	4	2	3	4	1	-	-	6	1	1	-	1	-	-	-	
Janitors	317	2.47	4	85	28	52	67	56	16	7	1	-	-	-	-	1	-	-	-	-	-	
Men	283	2.47	4	79	26	51	57	41	16	7	1	-	-	-	-	1	-	-	-	-	-	
Women	34	2.53	-	6	2	1	10	15	-	-	-	-	-	-	-	-	-	-	-	-	-	
Laborers, material handling (all men)	209	2.63	-	4	24	31	30	11	64	22	23	-	-	-	-	-	-	-	-	-	-	
Stock clerks (all men)	92	2.88	-	-	3	6	8	2	13	9	19	22	-	-	10	-	-	-	-	-	-	
Truckers, power ² (469 men, 7 women)	476	2.81	-	-	3	76	6	35	42	85	183	46	-	-	-	-	-	-	-	-	-	
Forklift	302	2.88	-	-	-	29	4	7	11	31	174	46	-	-	-	-	-	-	-	-	-	

¹ Excludes premium pay for overtime and for work on weekends, holidays, and late or other shifts.
² Includes data for other power truck operators in addition to those shown separately.

Table 7. Occupational earnings: Noncellulosic fibers—United States

(Number and average straight-time hourly earnings¹ of workers in selected occupations in noncellulosic fibers manufacturing establishments, United States, December 1970)

Department, occupation, and sex	Number of workers	Average hourly earnings ²	Number of workers receiving straight-time hourly earnings of—																								
			Under \$2.30	\$2.30 and under \$2.40	\$2.40	\$2.50	\$2.60	\$2.70	\$2.80	\$2.90	\$3.00	\$3.10	\$3.20	\$3.30	\$3.40	\$3.50	\$3.60	\$3.70	\$3.80	\$3.90	\$4.00	\$4.10	\$4.20	\$4.30	\$4.40	\$4.50 and over	
Maintenance																											
Carpenters (all men) -----	120	\$4.00	-	-	-	-	5	-	1	-	6	-	2	6	7	-	-	1	-	24	4	7	3	-	54	-	-
Electricians (all men) -----	703	4.11	-	-	-	1	-	21	3	16	-	-	16	34	10	-	31	36	26	55	45	48	-	361	-	-	-
Helpers, trades (all men) -----	175	3.48	-	4	-	2	2	-	-	5	4	45	-	2	-	40	-	-	37	9	-	-	-	-	-	-	-
Instrument repairmen (all men) -----	436	4.28	-	-	-	-	-	-	-	-	3	-	-	8	12	-	1	11	6	4	25	41	32	2	289	2	
Machinists (all men) -----	387	4.20	-	-	-	-	-	-	-	12	7	-	-	9	8	-	7	24	22	15	14	17	30	218	-	-	
Mechanics (all men) -----	2,686	4.12	-	-	-	-	76	23	26	65	8	-	82	5	157	59	72	93	180	53	88	67	372	260	-	-	
Millwrights (all men) -----	642	3.95	-	-	-	-	3	2	4	10	59	35	-	77	-	-	-	2	-	12	154	164	-	120	-	-	
Processing																											
Chemical operators, noncellulosic fiber (3,089 men, 41 women) -----	3,130	3.69	14	-	72	52	27	69	1	-	341	28	195	82	-	217	374	-	34	474	526	-	624	-	-	-	-
Creel tenders -----	1,919	2.97	53	46	9	44	3	317	172	397	316	468	44	1	1	-	-	-	-	-	-	-	-	-	-	-	48
Men -----	943	2.92	36	44	-	41	-	286	8	81	293	81	43	-	-	-	-	-	-	-	-	-	-	-	-	-	30
Women -----	976	3.01	17	2	9	3	3	164	316	23	387	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	18
Drawtwist operators -----	7,354	3.00	329	475	163	11	29	916	311	803	180	2,143	216	1,508	5	54	122	-	6	5	3	3	72	-	-	-	-
Men -----	1,440	3.08	23	130	117	-	3	11	16	334	91	88	182	192	2	49	122	-	2	3	1	2	72	-	-	-	-
Women -----	5,914	2.98	306	345	46	11	26	905	295	469	89	2,055	34	1,316	3	5	-	4	2	2	1	2	-	-	-	-	-
Jetmen -----	358	3.32	1	-	14	3	-	-	3	12	72	20	48	35	28	5	97	8	-	12	-	-	-	-	-	-	-
Men -----	324	3.34	-	-	14	3	-	-	3	6	64	19	33	32	28	5	97	8	-	12	-	-	-	-	-	-	-
Spinners, dry-process (6,046 men, 219 women) -----	6,265	3.40	62	94	107	-	60	220	127	311	385	340	135	363	190	898	2,775	191	4	3	-	-	-	-	-	-	-
Spinners, wet-process (633 men, 9 women) -----	642	3.26	-	-	8	-	-	11	-	-	288	21	130	-	7	7	133	5	-	40	-	-	-	-	-	-	-
Tow operators -----	1,964	3.24	-	-	8	-	18	100	24	209	385	3	626	177	7	17	333	15	-	42	-	-	-	-	-	-	-
Men -----	1,749	3.25	-	-	8	-	18	96	24	142	341	3	541	167	7	17	328	15	-	42	-	-	-	-	-	-	-
Warper operators -----	1,455	3.08	38	75	1	20	13	3	218	65	133	411	138	272	23	9	3	11	2	1	1	-	-	-	-	-	18
Men -----	292	3.24	-	21	-	-	-	-	6	-	32	80	125	-	9	1	-	-	-	-	-	-	-	-	-	-	18
Women -----	1,163	3.04	38	54	1	20	13	3	212	65	101	331	13	272	14	8	3	11	2	1	1	-	-	-	-	-	-
Winders, yarn -----	723	2.84	24	267	60	3	4	5	9	8	44	14	13	221	7	6	4	9	5	4	5	2	5	3	1	-	-
Women -----	559	2.77	23	255	40	3	4	5	9	4	15	11	13	126	7	6	4	9	5	4	5	2	5	3	1	-	-
Inspection and testing																											
Laboratory assistants -----	1,234	3.56	42	33	24	7	10	47	23	31	16	54	110	94	35	48	324	41	33	24	38	17	17	14	24	2128	-
Men -----	855	3.65	39	29	23	3	10	1	20	28	6	26	45	70	21	35	174	31	33	23	38	17	17	14	24	128	-
Women -----	379	3.36	3	4	1	4	-	46	3	10	28	65	24	14	13	150	10	-	1	-	-	-	-	-	-	-	-
Physical test operators -----	1,522	3.05	57	27	41	34	59	224	26	97	71	290	211	282	18	4	60	11	4	-	1	1	2	-	2	-	-
Men -----	274	3.18	8	-	40	1	10	3	1	3	15	14	72	38	5	3	47	7	3	-	1	1	1	-	1	-	-
Women -----	1,248	3.02	49	27	1	33	49	221	25	94	56	276	139	244	13	1	13	4	1	-	-	-	1	-	1	-	-
Miscellaneous																											
Guards (all men) -----	167	3.52	2	2	2	1	3	3	19	17	13	7	-	3	3	-	-	29	3	2	3	55	-	-	-	-	-
Janitors -----	515	2.64	359	16	17	30	128	156	47	62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Men -----	478	2.63	56	16	16	30	128	139	36	57	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Women -----	37	2.73	3	-	1	-	17	11	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Laborers, material handling -----	798	2.71	24	22	106	22	20	322	198	75	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Men -----	738	2.71	24	22	106	22	20	267	198	70	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stock clerks (all men) -----	227	3.51	4	-	6	6	-	-	2	2	18	-	-	6	21	7	7	91	38	10	1	2	4	2	-	-	-
Truckers, power ⁴ (709 men, 10 women) -----	719	3.04	6	7	65	30	-	78	-	215	87	62	-	20	-	-	142	-	-	7	-	-	-	-	-	-	-
Forklift -----	434	3.07	6	4	37	16	-	78	-	100	13	62	-	-	-	-	111	-	-	7	-	-	-	-	-	-	-

¹ Excludes premium pay for overtime and for work on weekends, holidays, and late or other shifts.

² Workers were distributed as follows: 19 at \$4.50 to \$4.60; 28 at \$4.60 to \$4.70; 36 at \$4.70 to \$4.80; 11 at \$4.80 to \$4.90; 13 at \$4.90 to \$5; and 21 at \$5 and over.

³ Workers were distributed as follows: 32 at \$1.90 to \$2; 3 at \$2 to \$2.10; and 24 at \$2.20 to \$2.30.

⁴ Includes data for other power truck operators in addition to those shown separately.

Table 8. Occupational earnings: Noncellulosic fibers—South

(Number and average straight-time hourly earnings¹ of workers in selected occupations in noncellulosic fibers manufacturing establishments, South, December 1970)

Department, occupation, and sex	Number of workers	Average hourly earnings ¹	Number of workers receiving straight-time hourly earnings of—																									
			Under \$2.30	\$2.30 and under \$2.40	\$2.40	\$2.50	\$2.60	\$2.70	\$2.80	\$2.90	\$3.00	\$3.10	\$3.20	\$3.30	\$3.40	\$3.50	\$3.60	\$3.70	\$3.80	\$3.90	\$4.00	\$4.10	\$4.20	\$4.30	\$4.40	\$4.50		
																												and over
<u>Maintenance</u>																												
Carpenters (all men) -----	113	\$4.04	-	-	-	-	5	-	1	-	6	-	2	6	-	-	-	1	-	24	4	7	3	-	54	-	-	-
Electricians (all men) -----	671	4.15	-	-	-	1	-	21	3	16	-	16	2	10	-	31	36	26	55	45	48	-	361	-	-	-	-	-
Helpers, trades (all men) -----	170	3.49	-	4	-	2	-	-	-	4	45	-	2	40	25	-	-	37	9	-	-	-	-	-	-	-	-	
Instrument repairmen (all men) -----	432	4.28	-	-	-	-	-	-	-	3	-	-	8	8	-	11	6	4	25	41	32	2	289	2	-	-	-	
Machinists (all men) -----	380	4.21	-	-	-	-	-	-	4	12	7	-	2	8	-	7	24	22	15	14	17	30	218	-	-	-	-	
Mechanics (all men) -----	2,682	4.12	-	-	-	-	76	23	26	65	8	-	82	5	153	59	72	93	180	53	88	67	372	1,260	-	-	-	
Millwrights (all men) -----	565	4.02	-	-	-	-	3	2	4	10	59	35	-	-	-	-	2	-	12	154	164	-	120	-	-	-	-	
<u>Processing</u>																												
Chemical operators, noncellulosic fiber (3,068 men, 41 women) -----	3,109	3.69	14	-	72	52	27	69	-	-	341	8	195	82	-	217	374	-	34	474	526	-	624	-	-	-	-	-
Creel tenders -----	1,835	2.98	36	44	-	41	-	309	164	391	300	458	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48
Men -----	943	2.92	36	44	-	41	-	286	8	81	293	81	43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30
Women -----	892	3.04	-	-	-	-	-	23	156	310	7	377	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18
Drawtwist operators -----	6,883	3.00	329	475	161	11	28	898	311	391	178	2,141	214	1,506	-	48	120	-	-	-	-	-	-	-	-	-	-	72
Men -----	1,132	3.12	23	130	115	-	2	-	16	56	90	87	182	191	-	48	120	-	-	-	-	-	-	-	-	-	-	72
Women -----	5,751	2.98	306	345	46	11	26	898	295	335	88	2,054	32	1,315	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jetmen -----	356	3.32	1	-	14	3	-	-	3	12	70	20	48	35	28	5	97	8	-	12	-	-	-	-	-	-	-	-
Men -----	322	3.34	-	-	14	3	-	-	3	6	62	19	33	32	28	5	97	8	-	12	-	-	-	-	-	-	-	-
Spinners, dry-process (5,939 men, 214 women) -----	6,153	3.41	62	94	107	-	60	220	126	200	385	340	135	363	190	898	2,775	191	4	3	-	-	-	-	-	-	-	-
Spinners, wet-process (384 men, 9 women) -----	393	3.43	-	-	-	-	-	-	-	-	50	21	130	-	7	7	133	5	-	40	-	-	-	-	-	-	-	-
Tow operators -----	1,954	3.24	-	-	8	-	18	100	24	199	385	3	626	177	7	17	333	15	-	42	-	-	-	-	-	-	-	-
Men -----	1,739	3.25	-	-	8	-	18	96	24	132	341	3	541	167	7	17	328	15	-	42	-	-	-	-	-	-	-	-
Warper operators -----	1,357	3.07	38	75	1	6	1	218	60	122	408	132	262	9	-	-	-	-	-	6	-	-	-	-	-	-	-	-
Men -----	291	3.24	-	21	-	-	-	6	-	32	80	125	-	9	-	-	-	-	-	18	-	-	-	-	-	-	-	-
Women -----	1,066	3.03	38	54	1	6	1	212	60	90	328	7	262	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-
Winders, yarn -----	591	2.75	24	267	31	-	-	4	5	39	8	2	211	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Women -----	427	2.63	23	255	11	-	-	4	1	10	5	2	116	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<u>Inspection and testing</u>																												
Laboratory assistants -----	1,212	3.56	42	33	24	7	10	47	22	31	10	54	110	81	35	48	324	41	33	24	36	17	17	14	24	2	128	-
Men -----	836	3.65	39	29	23	3	10	1	20	28	2	26	45	57	21	35	174	31	33	23	36	17	17	14	24	2	128	-
Women -----	376	3.36	3	4	1	4	-	46	2	3	8	28	65	24	14	13	150	10	-	1	-	-	-	-	-	-	-	-
Physical test operators -----	1,470	3.07	55	18	41	6	56	216	26	97	71	289	211	282	18	3	60	11	4	-	1	1	2	-	2	-	-	-
Men -----	269	3.19	8	-	40	-	10	1	1	3	15	13	72	38	5	2	47	7	3	-	1	1	1	7	-	1	-	-
Women -----	1,201	3.04	47	18	1	6	46	215	25	94	56	276	139	244	13	1	13	4	1	-	-	-	-	1	-	1	-	-
<u>Miscellaneous</u>																												
Guards (all men) -----	163	3.52	2	2	2	1	3	19	17	13	7	-	2	3	-	-	-	28	2	2	2	55	-	-	-	-	-	-
Janitors -----	512	2.64	59	16	17	30	128	153	47	62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Men -----	475	2.63	56	16	16	30	128	136	36	57	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Women -----	37	2.73	3	-	1	-	-	17	11	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Laborers, material handling -----	736	2.70	24	22	106	22	20	295	198	40	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Men -----	676	2.70	24	22	106	22	20	240	198	35	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stock clerks (all men) -----	214	3.54	4	-	6	6	-	2	2	5	-	6	21	7	7	91	38	10	1	2	4	2	-	-	-	-	-	-
Truckers, power ⁴ (693 men, 10 women) -----	703	3.04	6	7	65	30	-	78	-	199	87	62	-	20	-	-	142	-	-	7	-	-	-	-	-	-	-	-
Forklift -----	418	3.07	6	4	37	16	-	78	-	84	13	62	-	-	-	-	111	-	-	7	-	-	-	-	-	-	-	-

¹ Excludes premium pay for overtime and for work on weekends, holidays, and late or other shifts.
² Workers were distributed as follows: 19 at \$4.50 to \$4.60; 28 at \$4.60 to \$4.70; 36 at \$4.70 to \$4.80; 11 at \$4.80 to \$4.90; 13 at \$4.90 to \$5; and 21 at \$5 and over.
³ Workers were distributed as follows: 32 at \$1.90 to \$2; 3 at \$2 to \$2.10; and 24 at \$2.20 to \$2.30.
⁴ Includes data for other power truck operators in addition to those shown separately.

Table 9. Method of wage payment

(Percent of production workers in synthetic fibers manufacturing establishments by method of wage payment, United States and South, December 1970)

Method of wage payment ¹	All establishments		Cellulosic fibers		Noncellulosic fibers	
	United States ²	South	United States ²	South	United States ²	South
All workers	100	100	100	100	100	100
Time-rated workers	95	97	89	94	97	98
Formal plans	95	97	88	93	97	98
Single rates	70	75	50	58	78	82
Range of rates	25	21	39	36	19	16
Individual rates	(³)	(³)	1	1	(³)	-
Incentive workers	5	3	11	6	3	2
Individual piecework	4	3	7	6	3	2
Group piecework	(³)	-	1	-	(³)	-
Individual bonus	1	-	2	-	-	-
Group bonus	1	-	2	-	-	-

¹ For definition of method of wage payment see appendix A.

² Includes data for regions in addition to the South.

³ Less than 0.5 percent.

NOTE: Because of rounding, sums of individual items may not equal totals.

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Table 10. Scheduled weekly hours

(Percent of production and officeworkers in synthetic fibers manufacturing establishments by scheduled weekly hours of day-shift workers, ¹ United States and South, December 1970)

Scheduled weekly hours	Production workers						Officeworkers					
	All establishments		Cellulosic fibers		Noncellulosic fibers		All establishments		Cellulosic fibers		Noncellulosic fibers	
	United States ²	South										
All workers	100	100	100	100	100	100	100	100	100	100	100	100
40 hours	94	94	100	100	92	91	100	100	100	100	100	100
42 hours	6	6	-	-	8	9	-	-	-	-	-	-

¹ Data relate to the predominant work schedule in each establishment for full-time day-shift workers.

² Includes data for regions in addition to the South.

Table 11. Shift differential practices—All establishments

(Percent of production workers assigned to selected shifts in synthetic fibers manufacturing establishments by type of shift and amount of shift differential, United States and South, December 1970)

Shift differential	United States ¹						South					
	Rotating shifts ²			Oscillating shifts ³	Fixed shifts		Rotating shifts ²			Oscillating shifts ³	Fixed shifts	
	Day schedules (1st)	Evening schedules (2nd)	Night schedules (3rd)	First or second group	Evening schedules (2nd)	Night schedules (3rd)	Day schedules (1st)	Evening schedules (2nd)	Night schedules (3rd)	First or second group	Evening schedules (2nd)	Night schedules (3rd)
Workers assigned to selected shifts.....	25.5	23.9	23.8	1.3	1.6	1.5	26.0	25.0	24.9	1.4	0.8	0.7
Receiving shift differential	12.7	22.5	22.4	1.3	1.2	1.3	13.8	23.5	23.4	1.4	.4	.5
Uniform cents per hour	3.8	5.8	5.7	1.1	.8	.9	4.1	6.3	6.2	1.2	.3	.5
3 cents	-	.9	-	.2	-	-	-	.9	-	-	-	-
4 cents	-	.5	.9	-	.4	-	-	.5	.9	-	-	-
5 cents	-	.6	-	.6	.2	-	-	.7	-	.6	.2	-
6 cents	-	1.2	.3	-	-	-	-	1.3	.4	-	-	-
7 cents	-	1.1	-	(⁴)	.1	-	-	1.2	-	.1	.1	-
8 cents	-	1.2	-	-	(⁴)	-	-	1.3	-	-	(⁴)	-
9 cents	-	.3	.1	-	.1	.4	-	.3	-	.3	-	-
10 cents	-	-	.4	.3	(⁴)	.4	-	-	.4	.3	(⁴)	.5
11 cents	3.4	-	1.4	-	(⁴)	-	3.7	-	1.5	-	(⁴)	-
12 cents .....	.4	-	1.2	-	-	(⁴)	.4	-	1.3	-	-	-
14 cents	-	-	-	-	-	-	-	-	-	-	-	-
15 cents	-	-	.1	-	-	-	-	-	.1	-	-	-
16 cents	-	-	1.1	-	-	-	-	-	1.2	-	-	-
18 cents	-	-	.2	-	-	-	-	-	.3	-	-	-
20 cents	-	-	-	-	-	-	-	-	-	-	-	-
Uniform percentage	3.0	5.8	5.8	.2	.4	.4	3.2	5.3	5.3	.2	-	-
5 percent	-	-	-	.2	-	-	-	-	.2	-	-	-
7 percent	-	1.7	-	-	.4	-	-	.8	-	-	-	-
10 percent	3.0	4.1	5.8	-	-	.4	3.2	4.5	5.3	-	-	-
Uniform cents per hour plus paid lunch period not provided fixed day-shift workers .....	.6	10.4	10.3	(⁴)	(⁴)	-	.7	11.3	11.2	(⁴)	(⁴)	-
5 cents	-	1.6	-	-	-	-	-	1.7	-	-	-	-
7 cents	-	.8	-	-	-	-	-	.9	-	-	-	-
10 cents	-	2.9	1.6	-	-	-	-	3.1	1.7	-	-	-
12 cents	-	4.1	-	(⁴)	(⁴)	-	-	4.5	-	(⁴)	(⁴)	-
14 cents	-	.4	2.0	-	-	-	-	.4	2.2	-	-	-
16 cents .....	.6	.6	4.0	-	-	-	.7	.7	4.3	-	-	-
18 cents	-	-	.7	-	-	-	-	.8	-	-	-	-
20 cents	-	-	2.0	-	-	-	-	2.2	-	-	-	-
Paid lunch period not provided fixed day-shift workers	5.4	.6	.6	(⁴)	-	-	5.8	.7	.7	(⁴)	-	-
Receiving no shift differential	12.8	1.4	1.4	-	.4	.2	12.2	1.5	1.5	-	.4	.2

¹ Includes data for regions in addition to the South.

² Workers assigned to rotating shifts alternately worked on the day, evening, and night schedules.

³ Workers assigned to oscillating shifts were of 2 groups: Those alternating between day and evening schedules, and those alternating between evening and night schedules.

⁴ Less than 0.05 percent.

NOTE: Because of rounding, sums of individual items may not equal totals.

Table 12. Shift differential practices—Cellulosic fibers

(Percent of production workers assigned to selected shifts in cellulosic fibers manufacturing establishments by type of shift and amount of shift differential, United States and South, December 1970)

Shift differential	United States ¹						South					
	Rotating shifts ²			Oscillating shifts ³	Fixed shifts		Rotating shifts ²			Oscillating shifts ³	Fixed shifts	
	Day schedules (1st)	Evening schedules (2nd)	Night schedules (3rd)	First or second group	Evening schedules (2nd)	Night schedules (3rd)	Day schedules (1st)	Evening schedules (2nd)	Night schedules (3rd)	First or second group	Evening schedules (2nd)	Night schedules (3rd)
Workers assigned to selected shifts-----	19.9	17.4	17.3	3.7	3.6	4.3	23.5	20.5	20.4	4.3	0.8	1.8
Receiving shift differential -----	7.3	17.4	17.3	3.7	3.6	4.3	8.6	20.5	20.4	4.3	.8	1.8
Uniform cents per hour -----	1.4	7.5	7.5	3.7	2.2	3.0	1.6	8.8	8.8	4.3	.8	1.8
3 cents -----	-	1.9	-	-	-	-	-	2.3	-	1.0	-	-
4 cents -----	-	-	-	.8	-	-	-	-	-	-	-	-
5 cents -----	1.4	.5	1.9	-	1.5	-	1.6	2.6	2.3	-	-	-
6 cents -----	-	1.3	-	1.9	.6	-	-	1.5	-	2.3	.7	-
7 cents -----	-	3.7	-	-	-	-	-	4.4	-	-	-	-
10 cents -----	-	-	.5	-	-	1.5	-	-	.6	-	-	-
11 cents -----	-	-	1.3	.9	.1	1.5	-	-	1.5	1.1	.1	1.8
12 cents -----	-	-	3.7	-	-	-	-	-	4.4	-	-	-
Uniform percentage -----	-	2.7	2.5	-	1.4	1.2	-	3.1	3.0	-	-	-
7 percent -----	-	2.7	-	-	1.4	-	-	3.1	-	-	-	-
10 percent -----	-	-	2.5	-	-	1.2	-	-	3.0	-	-	-
Uniform cents per hour plus paid lunch period not provided fixed day-shift workers -----	2.1	5.3	5.3	-	-	-	2.5	6.1	6.1	-	-	-
5 cents -----	-	1.8	-	-	-	-	-	2.1	-	-	-	-
10 cents -----	-	-	1.8	-	-	-	-	-	2.1	-	-	-
14 cents -----	-	1.4	1.4	-	-	-	-	1.6	1.6	-	-	-
16 cents -----	2.1	2.1	2.1	-	-	-	2.5	2.4	2.4	-	-	-
Paid lunch period not provided fixed day-shift workers -----	3.9	2.1	2.1	-	-	-	4.6	2.4	2.4	-	-	-
Receiving no shift differential -----	12.6	-	-	-	-	-	14.9	-	-	-	-	-

¹ Includes data for regions in addition to the South.

² Workers assigned to rotating shifts alternately worked on the day, evening, and night schedules.

³ Workers assigned to oscillating shifts were of 2 groups: Those alternating between day and evening schedules, and those alternating between evening and night schedules.

NOTE: Because of rounding, sums of individual items may not equal totals.

Table 13. Shift differential practices— Noncellulosic fibers

(Percent of production workers assigned to selected shifts in noncellulosic fibers manufacturing establishments by type of shift and amount of shift differential, United States¹ and South, December 1970)

Shift differential	United States						South					
	Rotating shifts ²			Oscillating shifts ³	Fixed shifts		Rotating shifts ²			Oscillating shifts ³	Fixed shifts	
	Day schedules (1st)	Evening schedules (2nd)	Night schedules (3rd)	First or second group	Evening schedules (2nd)	Night schedules (3rd)	Day schedules (1st)	Evening schedules (2nd)	Night schedules (3rd)	First or second group	Evening schedules (2nd)	Night schedules (3rd)
Workers assigned to selected shifts-----	27.8	26.5	26.4	0.3	0.8	0.4	26.9	26.6	26.5	0.3	0.8	0.3
Receiving shift differential-----	14.9	24.6	24.5	.3	.3	.1	15.7	24.6	24.5	.3	.2	-
Uniform cents per hour-----	4.8	5.1	4.9	.1	.2	.1	5.0	5.3	5.2	.1	.2	-
3 cents-----	-	.4	-	-	-	-	-	.4	-	-	-	-
5 cents-----	-	.5	.4	-	-	-	-	.5	.4	-	-	-
6 cents-----	-	.4	-	-	-	-	-	.4	-	-	-	-
7 cents-----	-	.2	.5	-	-	-	-	.2	.5	-	-	-
8 cents-----	-	1.5	-	.1	.1	-	-	1.6	-	.1	.1	-
9 cents-----	-	1.7	-	-	(⁴)	-	-	1.8	-	-	(⁴)	-
10 cents-----	-	.4	-	-	.1	-	-	.4	-	-	-	-
12 cents-----	4.8	-	.4	-	(⁴)	-	5.0	-	.4	-	(⁴)	-
14 cents-----	-	-	1.6	-	-	-	-	-	1.7	-	-	-
15 cents-----	-	-	-	-	-	.1	-	-	-	-	-	-
16 cents-----	-	-	.1	-	-	-	-	-	.1	-	-	-
18 cents-----	-	-	1.6	-	-	-	-	-	1.7	-	-	-
20 cents-----	-	-	.3	-	-	-	-	-	.4	-	-	-
Uniform percentage-----	4.2	7.1	7.1	.3	-	-	4.4	6.1	6.2	.3	-	-
5 percent-----	-	-	-	.3	-	-	-	-	.3	-	-	-
7 percent-----	-	1.2	-	-	-	-	-	-	-	-	-	-
10 percent-----	4.2	5.8	7.1	-	-	-	4.4	6.1	6.2	-	-	-
Uniform cents per hour plus paid lunch period not provided fixed day-shift workers-----	-	12.4	12.5	(⁴)	.1	-	-	13.1	13.1	(⁴)	.1	-
5 cents-----	-	1.5	-	-	-	-	-	1.6	-	-	-	-
7 cents-----	-	1.1	-	-	-	-	-	1.2	-	-	-	-
10 cents-----	-	4.0	1.5	-	-	-	-	4.2	1.6	-	-	-
12 cents-----	-	5.8	-	(⁴)	.1	-	-	6.1	-	(⁴)	.1	-
14 cents-----	-	-	2.3	-	-	-	-	-	2.4	-	-	-
16 cents-----	-	-	4.8	-	-	-	-	-	5.0	-	-	-
18 cents-----	-	-	1.0	-	-	-	-	-	1.1	-	-	-
20 cents-----	-	-	2.9	-	-	-	-	-	3.0	-	-	-
Paid lunch period not provided fixed day-shift workers-----	6.0	-	-	(⁴)	-	-	6.3	-	-	(⁴)	-	-
Receiving no shift differential-----	12.8	1.9	1.9	-	.5	.3	11.2	2.0	2.0	-	.6	.3

¹ Includes data for regions in addition to the South.

² Workers assigned to rotating shifts alternately worked on the day, evening, and night schedules.

³ Workers assigned to oscillating shifts were of 2 groups: Those alternating between day and evening schedules, and those alternating between evening and night schedules.

⁴ Less than 0.05 percent.

NOTE: Because of rounding, sums of individual items may not equal totals.

Table 14. Paid holidays

(Percent of production and officeworkers in synthetic fibers manufacturing establishments with formal provisions for paid holidays, United States and South, December 1970)

Number of paid holidays	Production workers						Officeworkers					
	All establishments		Cellulosic fibers		Noncellulosic fibers		All establishments		Cellulosic fibers		Noncellulosic fibers	
	United States ¹	South	United States ¹	South	United States^{1}	South	United States^{1}	South	United States^{1}	South	United States ¹	South
All workers	100	100	100	100	100	100	100	100	100	100	100	100
Workers in establishments providing paid holidays	100	100	100	100	100	100	100	100	100	100	100	100
5 days	1	1	-	-	1	1	(²)	(²)	-	-	(²)	(²)
7 days	11	11	19	22	7	7	13	14	23	30	10	10
8 days	36	31	74	69	20	17	22	17	54	42	12	11
9 days	53	57	7	8	71	75	65	69	22	29	78	79

¹ Includes data for regions in addition to the South.

² Less than 0.5 percent.

NOTE: Because of rounding, sums of individual items may not equal 100.

Table 15. Paid vacations

(Percent of production and officeworkers in synthetic fibers manufacturing establishments with formal provisions for paid vacations after selected periods of service, United States and South, December 1970)

Vacation policy ¹	Production workers						Officeworkers					
	All establishments		Cellulosic fibers		Noncellulosic fibers		All establishments		Cellulosic fibers		Noncellulosic fibers	
	United States ²	South	United States ²	South	United States ²	South	United States^{2}	South	United States^{2}	South	United States^{2}	South
All workers	100	100	100	100	100	100	100	100	100	100	100	100
<u>Method of payment</u>												
Workers in establishments providing paid vacations	100	100	100	100	100	100	100	100	100	100	100	100
Length-of-time payment	67	70	23	18	85	89	100	100	100	100	100	100
Percentage payment	24	20	61	62	9	5	-	-	-	-	-	-
Other	9	10	16	19	6	6	-	-	-	-	-	-
<u>Amount of vacation pay³</u>												
After 1 year of service:												
1 week	54	50	93	92	38	35	8	8	1	2	10	10
2 weeks	46	50	7	8	62	65	92	92	99	98	90	90
After 2 years of service:												
1 week	29	26	56	48	18	18	(⁴)	(⁴)	-	-	(⁴)	(⁴)
Over 1 and under 2 weeks	2	2	-	-	3	3	-	-	-	-	-	-
2 weeks	69	71	44	52	79	78	98	97	100	100	97	97
Over 2 and under 3 weeks	-	-	-	-	-	-	2	2	-	-	3	3
After 3 years of service:												
1 week	12	8	35	23	3	3	(⁴)	(⁴)	-	-	(⁴)	(⁴)
Over 1 and under 2 weeks	2	2	-	-	3	3	-	-	-	-	-	-
2 weeks	86	90	65	77	94	94	98	97	100	100	97	97
Over 2 and under 3 weeks	-	-	-	-	-	-	2	2	-	-	3	3
After 4 years of service:												
1 week	3	1	7	-	1	1	(⁴)	(⁴)	-	-	(⁴)	(⁴)
2 weeks	97	99	93	100	99	99	98	97	100	100	97	97
Over 2 and under 3 weeks	-	-	-	-	-	-	2	2	-	-	3	3

See footnotes at end of table.

Table 15. Paid vacations—Continued

(Percent of production and officeworkers in synthetic fibers manufacturing establishments with formal provisions for paid vacations after selected periods of service, United States and South, December 1970)

Vacation policy ¹	Production workers						Officeworkers					
	All establishments		Cellulosic fibers		Noncellulosic fibers		All establishments		Cellulosic fibers		Noncellulosic fibers	
	United States ²	South	United States ²	South	United States^{2}	South	United States^{2}	South	United States^{2}	South	United States ²	South
<u>Amount of vacation pay³—Continued</u>												
After 5 years of service:												
2 weeks -----	41	36	100	100	17	13	27	23	80	75	11	10
Over 2 and under 3 weeks -----	2	2	-	-	3	3	-	-	-	-	-	-
3 weeks -----	57	62	-	-	80	84	73	77	20	25	89	90
After 10 years of service:												
2 weeks -----	9	7	16	10	6	6	5	1	18	2	1	1
3 weeks -----	32	29	84	90	11	7	23	21	62	73	11	9
Over 3 and under 4 weeks -----	2	2	-	-	3	3	2	2	-	-	3	3
4 weeks -----	57	62	-	-	80	84	70	75	20	25	85	87
After 15 years of service:												
2 weeks -----	2	2	-	-	3	3	(⁴)	(⁴)	-	-	(⁴)	(⁴)
3 weeks -----	27	21	60	52	14	10	23	17	58	46	12	10
Over 3 and under 4 weeks -----	2	2	-	-	3	3	-	-	-	-	-	-
4 weeks -----	69	74	40	48	80	84	77	83	42	54	88	90
After 20 years of service:												
2 weeks -----	2	2	-	-	3	3	(⁴)	(⁴)	-	-	(⁴)	(⁴)
3 weeks -----	2	2	-	-	3	2	1	(⁴)	-	-	1	(⁴)
Over 3 and under 4 weeks -----	2	2	-	-	3	-	-	-	-	-	-	-
4 weeks -----	44	40	100	100	21	18	36	32	80	75	23	22
Over 4 and under 5 weeks -----	-	-	-	-	-	3	2	2	-	-	3	3
5 weeks -----	50	54	-	-	71	74	61	65	20	25	73	75
After 25 years of service:												
2 weeks -----	2	2	-	-	3	3	(⁴)	(⁴)	-	-	(⁴)	(⁴)
3 weeks -----	2	2	-	-	3	2	1	(⁴)	-	-	1	(⁴)
4 weeks -----	26	26	47	47	17	18	27	25	61	56	17	18
Over 4 and under 5 weeks -----	2	2	-	-	3	3	2	2	-	-	3	3
5 weeks -----	69	69	53	53	75	74	69	72	39	44	78	78
After 30 years of service: ⁵												
2 weeks -----	2	2	-	-	3	3	(⁴)	(⁴)	-	-	(⁴)	(⁴)
3 weeks -----	2	2	-	-	3	2	1	(⁴)	-	-	1	(⁴)
4 weeks -----	15	16	24	28	11	12	16	13	41	30	9	9
Over 4 and under 5 weeks -----	2	2	-	-	3	3	-	-	-	-	-	-
5 weeks -----	74	72	76	72	73	72	77	80	59	70	82	83
6 weeks -----	5	6	-	-	8	8	5	6	-	-	7	7

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¹ Includes basic plans only. Plans such as vacation-savings and those plans which offer "extended" or "sabbatical" benefits beyond basic plans to workers with qualifying lengths of service are excluded.

² Includes data for regions in addition to the South.

³ Vacation payments such as percent of annual earnings were converted to an equivalent time basis. Periods of service were arbitrarily chosen and do not necessarily reflect individual establishment provisions for progression. For example, the changes in proportions indicated at 10 years may include changes in provisions between 5 and 10 years.

⁴ Less than 0.5 percent.

⁵ Vacation periods were virtually the same after longer periods of time.

NOTE: Because of rounding, sums of individual items may not equal totals.

Table 16. Health, insurance, and retirement plans

(Percent of production and officeworkers in synthetic fibers manufacturing establishments with specified health, insurance, and retirement plans, ¹ United States and South, December 1970)

Type of plan	Production workers						Officeworkers					
	All establishments		Cellulosic fibers		Noncellulosic fibers		All establishments		Cellulosic fibers		Noncellulosic fibers	
	United States ²	South	United States ²	South	United States ²	South	United States ²	South	United States ²	South	United States ²	South
All workers	100	100	100	100	100	100	100	100	100	100	100	100
Workers in establishments providing:												
Life insurance	100	100	100	100	100	100	100	100	100	100	100	100
Contributory plans	5	3	7	100	4	4	3	3	-	100	4	4
Noncontributory plans	95	97	93	-	96	96	97	97	100	-	96	96
Accidental death and dismemberment insurance	63	63	93	100	51	49	62	63	83	100	55	54
Contributory plans	(³)	(³)	-	-	1	1	1	1	-	-	1	1
Noncontributory plans	63	62	93	100	51	48	61	62	83	100	54	53
Sickness and accident insurance or sick leave or both ⁴	94	94	91	90	96	96	98	97	100	100	97	97
Sickness and accident insurance	77	75	91	90	72	70	58	55	70	61	55	53
Contributory plans	29	30	14	8	36	38	31	34	22	29	34	35
Noncontributory plans	48	46	77	82	36	33	27	21	47	33	20	18
Sick leave (full pay, no waiting period)	25	27	-	-	35	37	75	78	52	60	82	83
Sick leave (partial pay or waiting period)	17	19	-	-	24	25	-	-	-	-	-	-
Hospitalization insurance	100	100	100	100	100	100	100	100	100	100	100	100
Contributory plans	7	5	14	8	4	4	8	9	22	29	4	4
Covering employees only	-	-	-	-	-	-	-	-	-	-	-	-
Covering employees and their dependents	7	5	14	8	4	4	8	9	22	29	4	4
Noncontributory plans	93	95	86	92	96	96	92	91	78	71	96	96
Covering employees only	6	6	9	10	5	4	1	1	2	2	1	1
Covering employees and their dependents	81	82	77	82	83	82	80	79	76	70	81	81
Noncontributory plans for employees; contributory for dependents	7	7	-	-	9	10	10	11	-	-	13	13
Surgical insurance	100	100	100	100	100	100	100	100	100	100	100	100
Contributory plans	7	5	14	8	4	4	8	9	22	29	4	4
Covering employees only	-	-	-	-	-	-	-	-	-	-	-	-
Covering employees and their dependents	7	5	14	8	4	4	8	9	22	29	4	4
Noncontributory plans	93	95	86	92	96	96	92	91	78	71	96	96
Covering employees only	6	6	9	10	5	4	2	1	2	2	2	1
Covering employees and their dependents	81	82	77	82	83	82	80	79	76	70	81	81
Noncontributory plans for employees; contributory for dependents	7	7	-	-	9	10	10	11	-	-	13	13
Medical insurance	85	90	73	77	90	95	93	94	86	88	95	96
Contributory plans	7	5	14	8	4	4	9	10	27	35	4	4
Covering employees only	-	-	-	-	-	-	-	-	-	-	-	-
Covering employees and their dependents	7	5	14	8	4	4	9	10	27	35	4	4
Noncontributory plans	78	85	58	69	87	91	82	84	58	53	91	92
Covering employees only	6	6	9	10	4	4	2	1	2	2	2	1
Covering employees and their dependents	65	70	60	59	71	75	70	71	57	51	74	76
Noncontributory plans for employees; contributory for dependents	8	9	-	-	11	12	11	12	-	-	15	15

See footnotes at end of table.

Table 16. Health, insurance, and retirement plans—Continued

(Percent of production and officeworkers in synthetic fibers manufacturing establishments with specified health, insurance, and retirement plans, ¹ United States and South, December 1970)

Type of plan	Production workers						Officeworkers					
	All establishments		Cellulosic fibers		Noncellulosic fibers		All establishments		Cellulosic fibers		Noncellulosic fibers	
	United States ²	South	United States ²	South	United States ²	South	United States^{2}	South	United States^{2}	South	United States^{2}	South
Workers in establishments providing—Continued												
Major medical insurance	70	67	100	100	57	55	72	70	100	100	63	62
Contributory plans	44	40	91	90	25	22	39	39	82	98	26	25
Covering employees only	-	-	-	-	-	-	-	-	-	-	-	-
Covering employees and their dependents	44	40	91	90	25	22	39	39	82	98	26	25
Noncontributory plans	25	28	9	10	32	34	33	31	18	2	37	38
Covering employees only	6	6	9	10	4	4	2	1	1	2	2	1
Covering employees and their dependents	14	15	-	-	20	21	21	18	17	-	22	23
Noncontributory plans for employees; contributory for dependents	6	6	-	-	8	8	10	11	-	-	13	13
Retirement plans ⁵	97	97	100	100	96	96	94	93	100	100	92	91
Pensions	96	95	100	100	94	94	92	92	100	100	90	90
Contributory plans	-	-	-	-	-	-	(³)	(³)	-	-	(³)	(³)
Noncontributory plans	96	95	100	100	94	94	92	91	100	100	90	89
Severance pay	2	2	-	-	2	2	1	1	-	-	2	2

¹ Includes only those plans for which at least part of the cost is borne by the employer. Legally required plans such as workmen's compensation and social security are excluded; plans required by State temporary disability insurance laws are included if the employer contributes more than is legally required or the employees receive benefits in excess of legal requirements. "Noncontributory plans" include only those plans financed entirely by the employer.

² Includes data for regions in addition to the South.

³ Less than 0.5 percent.

⁴ Unduplicated total of workers receiving sick leave or sickness and accident insurance shown separately.

⁵ Unduplicated total of workers in plants having provisions for pensions and severance pay shown separately.

NOTE: Because of rounding, sums of individual items may not equal totals.

Table 17. Other selected benefits

(Percent of production and officeworkers in synthetic fibers manufacturing establishments with formal provisions for funeral leave pay, jury duty pay, and technological severance pay. United States and South, December 1970)

Type of benefit ¹	Production workers						Officeworkers					
	All establishments		Cellulosic fibers		Noncellulosic fibers		All establishments		Cellulosic fibers		Noncellulosic fibers	
	United States ²	South	United States^{2}	South	United States^{2}	South	United States^{2}	South	United States^{2}	South	United States^{2}	South
Workers in establishments with provisions for:												
Funeral leave pay	99	99	100	100	99	99	96	95	94	93	96	96
Jury duty pay	99	100	100	100	100	100	99	100	100	100	99	100
Technological severance pay	46	41	68	62	37	34	32	30	37	25	31	31

¹ For definition of items, see appendix A.

² Includes data for regions in addition to the South.

Appendix A. Scope and Method of Survey

Scope of survey

The survey included establishments primarily engaged in the manufacture of cellulosic man-made fibers and other synthetic organic fibers (noncellulosic) in the form of monofilament, yarn, staple, or tow suitable for further manufacturing on textile processing equipment (industries 2823 and 2824 as defined in the 1967 edition of the *Standard Industrial Classification Manual*, prepared by the U.S. Office of Management and Budget, formerly the Bureau of the Budget). The classification of establishments by industry was determined on the basis of the value of the principal fiber manufactured. Separate auxiliary units, such as central offices and research laboratories, were excluded. Also excluded from the survey were establishments primarily engaged in manufacturing glass fibers.

The number of establishments and workers actually studied by the Bureau, as well as the number estimated to be within the scope of the survey during the payroll period studied, are shown in table A-1.

Method of study

Data were obtained by personal visits of the Bureau's field staff. The survey was conducted on a sample basis. To obtain appropriate accuracy at minimum cost, a greater proportion of large than of small establishments was studied. In combining the data, however, all establishments were given their appropriate weight. *All estimates are presented, therefore, as relating to all establishments in the industry, excluding only those below the minimum size at the time of reference of the universe data.*

Establishment definition

An establishment, for purposes of this study, is defined as a single physical location where industrial operations are performed. An establishment is not necessarily identical with the company, which may consist of one or more establishments.

Employment

The estimates of the number of workers within the scope of the study are intended as a general guide to the size and composition of the labor force included in the survey. The advance planning necessary to make a wage survey requires the use of lists of establishments assembled considerably in advance of the payroll period studied.

Production and officeworkers

The term "production workers," as used in this bulletin, includes working foremen and all nonsupervisory workers engaged in nonoffice functions. Administrative, executive, professional, and technical personnel, and force-account construction employees, who were utilized as a separate work force on the firm's own properties, were excluded.

The term "officeworkers" includes all nonsupervisory officeworkers and excludes administrative, executive, professional, and technical employees.

Occupations selected for study

The occupational classification was based on a uniform set of job descriptions designed to take account of interestablishment and interarea variations in duties within the same job. (See appendix B for these descriptions.) The occupations were chosen for their numerical importance, their usefulness in collective bargaining, or their representativeness of the entire job scale in the industry. Working supervisors, apprentices, learners, beginners, trainees, and handicapped, part-time, temporary, and probationary workers were not reported in the data for selected occupations but were included in the data for all production workers.

Wage data

The wage information relates to average straight-time hourly earnings, excluding premium pay for overtime

Table A-1. Estimated number of establishments and workers within scope of survey and number studied, synthetic fibers manufacturing, December 1970

Industry branch and region	Number of establishments		Workers in establishments			
	Within scope of study	Actually studied	Within scope of study			Actually studied
			Total ¹	Production workers	Office-workers	Total ¹
All establishments:						
United States ²	49	39	86,004	67,428	5,376	70,025
South ³	44	35	79,735	62,110	5,006	63,851
Cellulosic fibers establishments:						
United States ²	14	13	23,369	19,551	1,252	22,398
South ³	12	11	19,773	16,602	979	18,802
Noncellulosic fibers establishments:						
United States ²	35	26	62,635	47,877	4,124	47,627
South ³	32	24	59,962	45,508	4,027	45,049

¹ Includes executive, professional, and other workers excluded from the production and officeworker categories.

² Includes data for regions in addition to the South.

³ The South as used in this study includes: Alabama, Delaware, District of Columbia, Florida, Georgia, Kentucky, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia.

and for work on weekends, holidays, and late or other shifts. Incentive payments, such as those resulting from piecework or production bonus systems, and cost-of-living bonuses were included as part of the workers' regular pay; but nonproduction bonus payments, such as Christmas or yearend bonuses, were excluded.

Average (mean) hourly rates or earnings for each occupation or other group of workers, such as men, women, or production workers, were calculated by weighting each rate (or hourly earnings) by the number of workers receiving the rate, totaling, and dividing by the number of individuals. The hourly earnings of salaried workers were obtained by dividing straight-time salary by normal rather than actual hours.

The median designates position; that is, one-half of the employees surveyed received more than this rate and one-half received less. The middle range is defined by two rates of pay; one-fourth of the employees earned less than the lower of these rates and one-fourth earned more than the higher rate.

Method of wage payment

Tabulations by method of wage payment relate to the number of workers paid under the various time and incentive wage systems. Formal rate structures for time-rated workers provide single rates or a range of rates for individual job categories. In the absence of a formal rate structure, pay rates are determined primarily with reference to the qualifications of the individual worker. A single rate structure is one in which the same rate is

paid to all experienced workers in the same job classification. Learners, apprentices, or probationary workers may be paid according to rate schedules which start below the single rate and permit the workers to achieve the full job rate over a period of time. Individual experienced workers may occasionally be paid above or below the single rate for special reasons, but such payments are regarded as exceptions. Range-of-rate plans are those in which the minimum and/or maximum rates paid experienced workers for the same job are specified. Specific rates of individual workers within the range may be determined by merit, length of service, or a combination of various concepts of merit and length of service. Incentive workers are classified under piecework or bonus plans. Piecework is work for which a predetermined rate is paid for each unit of output. Production bonuses are based on production in excess of a quota or for completion of a job in less than standard time.

Scheduled weekly hours

Data on weekly hours refer to the predominant work schedule for full-time production workers (or office-workers) employed on the day shift.

Shift practices

Data relate to shift practices of establishments during the payroll period studied and are presented in terms of the proportion of production workers actually employed under the conditions specified. Workers assigned to

rotating shifts variously work on day, evening, and night shifts, and workers assigned to fixed shifts regularly work on their assigned shift. Workers assigned to oscillating shifts were of two groups: Those alternating between day and evening schedules, and those alternating between evening and night schedules.

Supplementary wage provisions

Supplementary benefits were treated statistically on the basis that if formal provisions for supplementary benefits were applicable to one-half or more of the production workers (or officeworkers) in an establishment, the benefits were considered applicable to all such workers. Similarly, if fewer than one-half of the workers were covered, the benefit was considered nonexistent in the establishment. Because of length-of-service and other eligibility requirements, the proportion of workers receiving the benefits may be smaller than estimated.

Paid holidays. Paid holiday provisions relate to full-day and half-day holidays provided annually.

Paid vacations. The summaries of vacation plans are limited to formal arrangements, excluding informal plans whereby time off with pay is granted at the discretion of the employer or the supervisor. Payments not on a time basis were converted; for example, a payment of 2 percent of annual earnings was considered the equivalent of 1 week's pay. The periods of service for which data are presented were selected as representative of the most common practices but they do not necessarily reflect individual establishment provisions for progression. For example, the changes in proportions indicated at 10 years of service may include changes which occurred between 5 and 10 years.

Health, insurance, and retirement plans. Data are presented for health, insurance, and pension plans for which all or a part of the cost is borne by the employer, excluding only programs required by law, such as workmen's compensation and social security. Among the plans included are those underwritten by a commercial insurance company and those paid directly by the employer from his current operating funds or from a fund set aside for this purpose.

Death benefits are included as a form of life insurance. Sickness and accident insurance is limited to that type of insurance under which predetermined cash payments are made directly to the insured on a weekly or monthly basis during illness or accident disability. Information is

presented for all such plans to which the employer contributes at least part of the cost. However, in New York and New Jersey, where temporary disability insurance laws require employer contributions,¹ plans were included only if the employer (1) contributed more than is legally required, or (2) provided the employees with benefits which exceeded the requirements of the law.

Tabulations of paid sick leave plans are limited to formal plans which provide full pay or a proportion of the worker's pay during absence from work because of illness; informal arrangements have been omitted. Separate tabulations are provided according to (1) plans which provide full pay and no waiting period, and (2) plans providing either partial pay or a waiting period.

Medical insurance refers to plans providing for complete or partial payment of doctors' fees. Such plans may be underwritten by a commercial insurance company or a nonprofit organization, or they may be a form of self-insurance.

Major medical insurance, sometimes referred to as extended medical insurance, includes the plans designed to cover employees in case of sickness or injury involving an expense which goes beyond the normal coverage of hospitalization, medical, and surgical plans.

Tabulations of retirement pensions are limited to plans which provide regular payments for the remainder of the retiree's life. Data are presented separately for lump-sum retirement pay (one payment or several over a period of time) made to employees upon retirement. Establishments providing both lump-sum payments and pensions to employees upon retirement were considered as having both retirement pension and lump-sum retirement pay. Establishments having optional plans which provide employees a choice of either lump-sum retirement payments or pensions were considered as having only retirement pension benefits.

Paid funeral and jury-duty leave. Data for paid funeral and jury-duty leave relate to formal provisions for at least partial payment for time lost as a result of attending funerals of specified family members or serving as a juror.

Technological severance pay. Data relate to formal plans providing for payment to employees permanently separated from the company because of a technological change or plant closing.

¹ The temporary disability insurance laws in California and Rhode Island do not require employer contributions.

Appendix B. Occupational Descriptions

The primary purpose of preparing job descriptions for the Bureau's wage surveys is to assist its field staff in classifying into appropriate occupations workers who are employed under a variety of payroll titles and different work arrangements from establishment to establishment and from area to area. This classification permits the grouping of occupational wage rates representing comparable job content. Because of the emphasis on interestablishment and interarea comparability of occupational content, the Bureau's job descriptions may differ significantly from those in use in individual establishments, or those prepared for other purposes. In applying these job descriptions, the Bureau's field staff are instructed to exclude working supervisors, apprentices, learners, beginners, trainees, and handicapped, part-time, temporary, and probationary workers.

Maintenance

Carpenter, maintenance

Performs the carpentry duties necessary to construct and maintain in good repair building woodwork and equipment such as bins, cribs, counters, benches, partitions, doors, floors, stairs, casings, and trim made of wood in an establishment. Work involves *most of the following*: Planning and laying out of work from blueprints, drawings, models, or verbal instructions; using a variety of carpenter's handtools, portable power tools, and standard measuring instruments; making standard shop computations relating to dimensions of work; selecting materials necessary for the work. In general, the work of the maintenance carpenter requires rounded training and experience usually acquired through a formal apprenticeship or equivalent training and experience.

Electrician, maintenance

Performs a variety of electrical trade functions such as the installation, maintenance, or repair of equipment for the generation, distribution, or utilization of electric energy in an establishment. Work involves *most of the*

following: Installing or repairing any of a variety of electrical equipment such as generators, transformers, switchboards, controllers, circuit breakers, motors, heating units, conduit systems, or other transmission equipment; working from blueprints, drawings, layout, or other specifications; locating and diagnosing trouble in the electrical system or equipment; working standard computations relating to load requirements of wiring or electrical equipment; using a variety of electrician's handtools and measuring and testing instruments. In general, the work of the maintenance electrician requires rounded training and experience usually acquired through a formal apprenticeship or equivalent training and experience.

Helper, maintenance trades

Assists one or more workers in the skilled maintenance trades, by performing specific or general duties of lesser skill, such as keeping a worker supplied with materials and tools; cleaning working areas, machine, and equipment; assisting worker by holding materials or tools;

performing other unskilled tasks as directed by journeyman. The kind of work the helper is permitted to perform varies from trade to trade. In some trades, the helper is confined to supplying, lifting, and holding materials and tools and cleaning working areas; and in others, he is permitted to perform specialized machine operations, or parts of a trade that are also performed by workers on a full-time basis.

Instrument repairman

Installs, maintains, adjusts, and repairs manual, pneumatic, electric, and/or electronic measuring, recording, and regulating instruments in a chemical plant. Work involves *most of the following*: Inspecting, testing, and adjusting instruments periodically, determining cause of trouble in instruments not functioning properly and making necessary repairs or adjustments; disconnecting inaccurate or damaged instruments and replacing them; examining mechanism and cleaning parts; replacing worn or broken parts; assembling instruments and installing them on testing apparatus; and calibrating instruments to established standard.

Machinist, maintenance

Produces replacement parts and new parts in making repairs of metal parts of mechanical equipment operated in an establishment. Work involves *most of the following*: Interpreting written instructions and specifications; planning and laying out of work; using a variety of machinist's handtools and precision measuring instruments; setting up and operating standard machine tools; shaping of metal parts to close tolerances; making standard shop computations relating to dimensions of work, tooling, feeds and speeds of machining; knowledge of the working properties of the common metals; selecting standard materials, parts, and equipment required for his work; fitting and assembling parts. In general, the machinist's work normally requires a rounded training in machine shop practice usually acquired through a formal apprenticeship or equivalent training and experience.

Mechanic, general

Performs the work of two or more maintenance trades rather than specializing in only one trade or one type of maintenance work. In general, the work of a general mechanic requires rounded training and experience usually acquired through a formal apprenticeship or equivalent training and experience.

The classification includes workers who regularly perform two or more types of skilled maintenance work within a section or department of a large establishment, such as pipefitting, millwrighting, welding, machining, machine and equipment repairing, and carpentry, among others. It also includes workers who maintain and repair machines, mechanical and electrical equipment, and/or the structure of a small establishment where specialization in maintenance work is impractical. It *does not*, however, include workers who only make minor repairs or adjustments.

Millwright

Installs new machines or heavy equipment, and dismantles and installs machines or heavy equipment when changes in the plant layout are required. Work involves *most of the following*: Planning and laying out of the work; interpreting blueprints or other specifications; using a variety of handtools and rigging; making standard shop computations relating to stresses, strength of materials, and centers of gravity; alining and balancing of equipment; selecting standard tools, equipment, and parts to be used; installing and maintaining in good order power transmission equipment such as drives and speed reducers. In general, the millwright's work normally requires a rounded training and experience in the trade acquired through a formal apprenticeship or equivalent training and experience.

Pipefitter, maintenance

Installs or repairs water, steam, gas, or other types of pipe and pipe fittings in an establishment. Work involves *most of the following*: Laying out of work and measuring to locate position of pipe from drawings or other written specifications; cutting various sizes of pipe to correct lengths with chisel and hammer or oxyacetylene torch or pipe-cutting machine; threading pipe with stocks and dies; bending pipe by hand-driven or power-driven machines; assembling pipe with couplings and fastening pipe to hangers; making standard shop computations relating to pressures, flow, and size of pipe required; making standard tests to determine whether finished pipes meet specifications. In general, the work of the maintenance pipefitter requires rounded training and experience usually acquired through a formal apprenticeship or equivalent training and experience. *Workers primarily engaged in installing and repairing building sanitation or heating systems are excluded.*

Chemical Preparation

Chemical operator, cellulosic fiber

Operates equipment in which raw materials are treated chemically to produce a solution from which rayon or acetate fibers are spun. Work consists of *most of the following*: Regulates the flow of materials by turning valves; observes and controls temperatures and time elements as prescribed; tends pumps, tanks, vessels, and other related equipment. May take batch samples for the testing laboratory.

Workers in this classification are usually designated according to their specific function, such as: Acid mixer, barratte operator, churn man, correction man, and steeping-press operator.

Chemical operator, noncellulosic fiber

Controls the conversion of chemical intermediates to produce a solution for spinning noncellulosic fibers by

operating one of several types of equipment such as autoclaves, reactors, retorts, etc. Observes a control board to determine the proper functioning of the chemical process as prescribed; recognizes and reports off-standard conditions, taking necessary corrective action if due to elements under his control. Maintains proper flow of the intermediates and product by opening and closing valves, observes, records and controls temperature and time elements, operates pumps, tanks, vessels, and other related equipment. May obtain samples for testing laboratory and keep prescribed records of production.

Workers in this classification are usually designated according to their specific functions, such as: Polymer preparation operator, solution operator, and salthouse operator.

Spinning

Jetman

(Spinneret man; spinneret cleaner; jet handler)

Cleans from spinnerets any gummy residue (left by spinning solution) to prevent clogging of the tiny holes through which solution is forced. Dismounts spinnerets from holders, and washes in acid bath; blows holes clean with compressed air, examines spinnerets for defects; and remounts spinneret in holder.

Spinner, dry process

Tends spinning machine that converts a liquid spinning solution into a solid filament by the dry-process method of spinning. Work involves *one or more of the following*: Correcting off-standard conditions as the spinning solution is forced through the spinneret and coagulated into a filament by warm air; wiping and spraying spinnerets regularly to insure an even flow of the solution; stringing up and establishing proper threadline by passing fila-

ments through guides and attaching to the winding device; and doffing (removing) full spinning packages from the machine. Worker may also keep records and take samples for laboratory analysis. Where filaments are passed directly from spinnerets on one floor to draw (stretching) machines on floor below, workers on both floors (topmen and bottom men) are to be classified in this occupation.

Spinner, wet process

Tends spinning machine that forces liquid solution through tiny holes in the spinneret (metal disc) into a solidifying acid bath, and forms the resulting filaments into a thread. Duties include *most of the following*: Collects ends of filaments from the solidifying bath to form an untwisted thread which is passed over a wheel, through guides, and attached to a winding device; removes (doffs) full spinning boxes; makes periodic inspections, repairing breaks as necessary.

Finishing

Creel tender

Tends creel mechanism of drawtwist machines or warpers by replacing empty packages of yarn or tow with full ones. Assists in stringing yarn from creel through guides to the drawtwist machine or warper; ties end of yarn on new package to end of yarn from exhausted package; inspects product as it is drawn from creel, and reports off-standard conditions. May take samples and keep production records.

Drawtwist operator

(Drawwind operator)

Operates a drawtwist machine that draws and twists noncellulosic yarn from a spinning package. Work includes *most of the following*: Stocks machines with spinning bobbins; strings up positions by threading guides, wrapping rolls, and following standard procedures and practices; repairs breaks and inspects for off-standard positions; patrols assignment for threadline breaks and improper alinement; starts and doffs machines according to schedule. May keep production records.

Tow operator

Operates any of several types of machines processing tow (a rope-like collection of filaments) immediately after spinning and just before packing. Typical of such operations are the following: (1) *Take-up operator*—operates machine that takes tow from the conveyor belt of the spinning machine; (2) *crimper operator*—operates machine that places a crimp in the tow to enable the fibers to be twisted into yarn; (3) *piddler machine operator*—operates a machine whose mechanism swings back and forth, lapping the tow into transport cans; and (4) *cutter operator*—operates machine that cuts crimped tow into specified lengths.

Warper operator

(Beamer)

Operates machine that draws yarn from many individual packages, and winds the strands parallel onto beams to form a warp. Work involves *most of the following*: Threads ends of individual strands of yarn through guides, drop wires, and comb of machine, following directions of a drawing to obtain a prescribed arrangement; fastens ends of all strands to the beam mounted in the machine; operates the powered winding mechanism to draw the yarn from the packages and wind it on the beam; and pieces together broken ends of yarn by twisting or tying the ends together. May also tend creel mechanism of machine.

Washer operator

Places packages of synthetic yarn in a washing machine to remove the acid used in the spinning process. Receives full packages from the spinning machine and places on racks of the washing machine; starts machine which forces water through the packages, washing the acid from the thread; removes cleaned packages and places on racks for drying.

Winder, yarn

Tends the operation of one or more of the various type machines used to wind twisted yarn from one form to another for shipment, or to facilitate handling in later processing. Work involves: Placing packages of yarn on reels or spindles of machine; threading yarn through the various guides; piecing-up broken ends by twisting or tying the two ends together; removing fully wound packages and replacing with empty bobbins, cones, tubes, or quills.

Inspection and Testing

Laboratory assistant

(Technician; laboratorian; chemical control operator)

Performs standard and routine chemical laboratory tests or special analytical control work under the direction of a chemist or foreman. Among the types of tests

that may be carried on by the laboratory assistant to determine properties of materials are viscosity tests, specific gravity tests, volumetric analysis, and colorimetric analysis. Keeps accurate records of test observations and reports to supervisor. Classification does not include workers performing physical tests. See *Physical-test operator*.

Physical-test operator

Performs standard and routine *physical* tests to determine the specific characteristics of continuous filament yarn, staple yarn, or tow. Uses instruments and speci-

fically designed machines, under the supervision of the laboratory foreman, to make the following types of tests: Denier, tenacity, twist determination, staple fiber length, crimp count on tow and staple, tare weight, moisture analysis, filament count, and abrasion resistance.

Material Movement and Handling

Laborer, material handling

(Loader and unloader; handler and stacker; shelver; trucker; stockman or warehouseman or warehouse helper)

A worker employed in a warehouse or manufacturing plant whose duties involve *one or more of the following*: Loading and unloading various materials and merchandise on or from freight cars, trucks, or other transporting devices; unpacking, shelving, or placing materials or merchandise in proper storage location; transporting materials or merchandise by handtruck, car, or wheelbarrow to proper location. *Longshoremen, who load and unload ships, are excluded.* If primary duty is to operate power truck, classify as truckers, power.

Stock clerk

Receives, stores, and issues equipment, materials, merchandise, or tools in a stockroom or storeroom. Work

involves a combination of the following: Checking incoming orders; storing supplies; applying identifications to articles; issuing supplies; taking periodic inventory or keeping perpetual inventory; making up necessary reports; requesting or ordering supplies when needed. *Stockroom laborers, tool crib attendants, and employees who supervise stock clerks and laborers are excluded.*

Trucker, power

Operates a manually-controlled gasoline- or electric-powered truck or tractor to transport goods and materials of all kinds about a warehouse, manufacturing plant, or other establishment.

For wage study purposes, workers are classified by type of truck as follows:

Forklift

Other than forklift

Custodial

Guard

Performs routine police duties, either at fixed post or on tour, maintaining order, using arms or force where necessary. *Includes gatemen, who are stationed at gate and check on identity of employees and other persons entering.*

Janitor

(Day porter; sweeper; charwoman; janitress)

Cleans and keeps in an orderly condition factory

working areas and washrooms, *or* premises in an office, apartment house, or commercial or other establishment. Duties involve *a combination of the following*: Sweeping, mopping, and/or scrubbing and polishing floors; removing chips, trash, and other refuse; dusting equipment, furniture, or fixtures; polishing metal fixtures or trimmings; providing supplies and minor maintenance services; cleaning lavatories, showers, and restrooms. *Workers who specialize in window washing are excluded.*

Industry Wage Studies

The most recent reports for industries included in the Bureau's program of industry wage surveys since January 1960 are listed below. Copies are available from the Superintendent of Documents, U.S. Government

Printing Office, Washington, D.C., 20402, or any of its regional sales offices, and from the Bureau of Labor Statistics, Washington, D.C., 20212, or from any of its regional offices shown on the inside back cover.

I. Occupational Wage Studies

Manufacturing

	Price
Basic Iron and Steel, 1967. BLS Bulletin 1602	\$0.55
Candy and Other Confectionery Products, 1970. BLS Bulletin 1732 .....	.45
Cigar Manufacturing, 1967. BLS Bulletin 1581 .....	.25
Cigarette Manufacturing, 1965. BLS Bulletin 1472 .....	.20
Cotton and Man-Made Fiber Textiles, 1968. BLS Bulletin 1637	1.00
Fabricated Structural Steel, 1969. BLS Bulletin 1695 .....	.50
Fertilizer Manufacturing, 1966. BLS Bulletin 1531 .....	.30
Flour and Other Grain Mill Products, 1967. BLS Bulletin 1576 .....	.25
Fluid Milk Industry, 1964. BLS Bulletin 1464 .....	.30
Footwear, 1968. BLS Bulletin 1634 .....	.75
Hosiery, 1967. BLS Bulletin 1562 .....	.70
Industrial Chemicals, 1965. BLS Bulletin 1529 .....	.40
Iron and Steel Foundries, 1967. BLS Bulletin 1626	1.00
Leather Tanning and Finishing, 1968. BLS Bulletin 1618 .....	.55
Machinery Manufacturing, 1968. BLS Bulletin 1664 .....	.65
Meat Products, 1969. BLS Bulletin 1677	1.00
Men's and Boys' Shirts (Except Work Shirts) and Nightwear, 1968. BLS Bulletin 1659 .....	.65
Men's and Boys' Suits and Coats, 1970. BLS Bulletin 1716	1.00
Miscellaneous Plastics Products, 1969. BLS Bulletin 1690 .....	.60
Motor Vehicles and Parts, 1969. BLS Bulletin 1679 .....	.75
Nonferrous Foundries, 1970. BLS Bulletin 1726 .....	.50
Paints and Varnishes, 1965. BLS Bulletin 1524 .....	.40
Paperboard Containers and Boxes, 1970. BLS Bulletin 1719	1.25
Petroleum Refining, 1965. BLS Bulletin 1526 .....	.30
Pressed or Blown Glass and Glassware, 1970. BLS Bulletin 1713 .....	.50
Pulp, Paper, and Paperboard Mills, 1967. BLS Bulletin 1608 .....	.60
Southern Sawmills and Planing Mills, 1969. BLS Bulletin 1694 .....	.50
Structural Clay Products, 1969. BLS Bulletin 1697 .....	.65
Synthetic Fibers, 1966. BLS Bulletin 1540 .....	.30
Synthetic Textiles, 1965. BLS Bulletin 1509 .....	.40
Textile Dyeing and Finishing, 1965-66. BLS Bulletin 1527 .....	.45
West Coast Sawmilling, 1969. BLS Bulletin 1704 .....	.45
Women's and Misses' Coats and Suits, 1965. BLS Bulletin 1508 .....	.25
Women's and Misses' Dresses, 1968. BLS Bulletin 1649 .....	.45
Wood Household Furniture, Except Upholstered, 1968. BLS Bulletin 1651 .....	.60
Wool Textiles, 1966. BLS Bulletin 1551 .....	.45
Work Clothing, 1968. BLS Bulletin 1624 .....	.50

I. Occupational Wage Studies—Continued

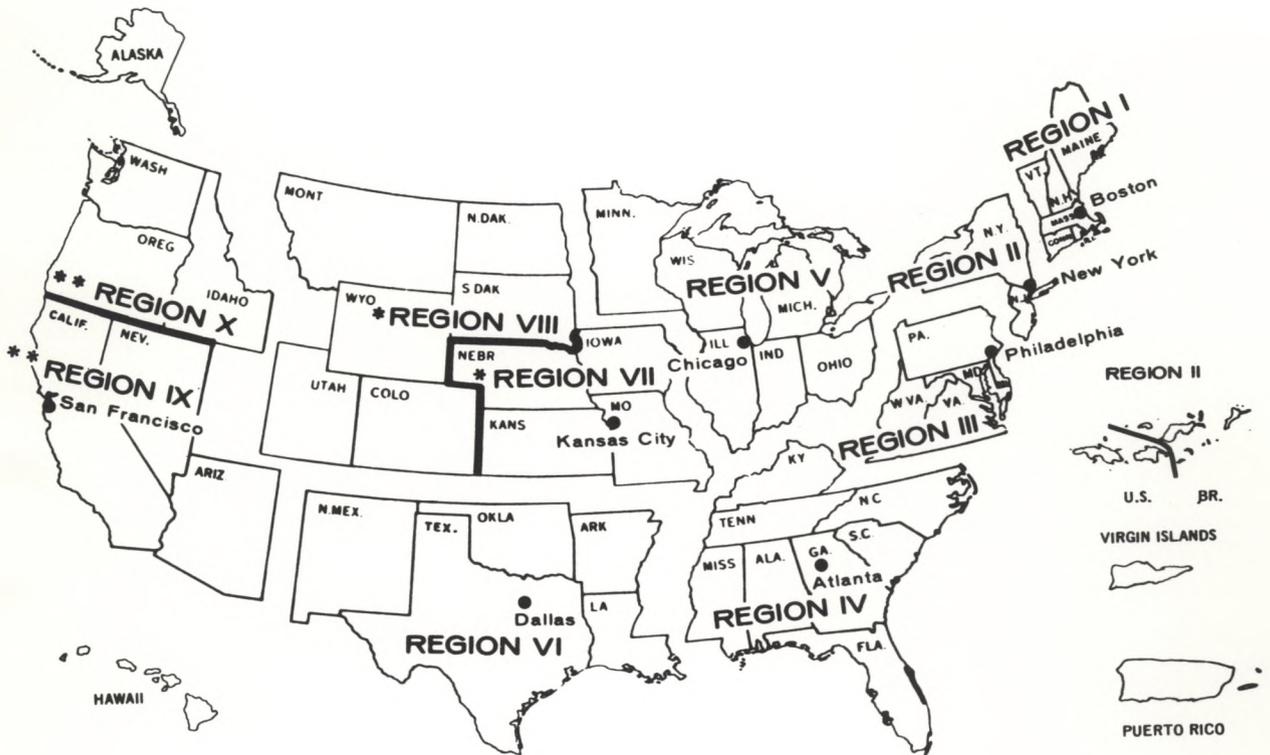
Nonmanufacturing

Auto Dealer Repair Shops, 1969. BLS Bulletin 1689	\$0.50
Banking, 1969. BLS Bulletin 1703 .....	.65
Bituminous Coal Mining, 1967. BLS Bulletin 1583 .....	.50
Communications, 1969. BLS Bulletin 1696 .....	.30
Contract Cleaning Services, 1968. BLS Bulletin 1644 .....	.55
Crude Petroleum and Natural Gas Production, 1967. BLS Bulletin 1566 .....	.30
Eating and Drinking Places, 1966–67. BLS Bulletin 1588 .....	.40
Educational Institutions: Nonteaching Employees, 1968–69. BLS Bulletin 1671 .....	.50
Electric and Gas Utilities, 1967. BLS Bulletin 1614 .....	.70
Hospitals, 1969. BLS Bulletin 1688	1.00
Hotels and Motels, 1966–67. BLS Bulletin 1587 .....	.40
Laundry and Cleaning Services, 1968. BLS Bulletin 1645 .....	.75
Life Insurance, 1966. BLS Bulletin 1569 .....	.30
Motion Picture Theaters, 1966. BLS Bulletin 1542 .....	.35
Nursing Homes and Related Facilities, 1967–68. BLS Bulletin 1638 .....	.75

II. Other Industry Wage Studies

Employee Earnings and Hours in Nonmetropolitan Areas of the South and North Central Regions, 1965. BLS Bulletin 1552 .....	.50
Employee Earnings and Hours in Eight Metropolitan Areas of the South, 1965. BLS Bulletin 1533 .....	.40
Employee Earnings and Hours in Retail Trade, June 1966— Retail Trade (Overall Summary). BLS Bulletin 1584	1.00
Building Materials, Hardware, and Farm Equipment Dealers. BLS Bulletin 1584-1 .....	.30
General Merchandise Stores. BLS Bulletin 1584-2 .....	.55
Food Stores. BLS Bulletin 1584-3 .....	.60
Automotive Dealers and Gasoline Service Stations. BLS Bulletin 1584-4 .....	.50
Apparel and Accessory Stores. BLS Bulletin 1584-5 .....	.55
Furniture, Home Furnishings, and Household Appliance Stores. BLS Bulletin 1584-650
Miscellaneous Retail Stores. BLS Bulletin 1584-765

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