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ABSTRACT

This report covers the major agricultural handling and processing industries qualifying for partial overtime exemption under the Fair Labor Standards Act and evaluates the need for such exemptions. Questionnaires which were sent to firms in various processing industries provide data on nearly 4,000 processors. The results show that existing exemptions are not fully utilized. Many firms are paying premium rates for overtime, and there was a large drop in man-hours over 40 a week during the periods when exemptions were most likely to be claimed, usually occurring before the end of the exemption period. The report concludes that the favored position held for three decades by agricultural processors should be reexamined, since the findings indicate that the exemption period could be reduced gradually to provide an orderly adjustment to the standards applicable to other industries. The appendix to this report is available as VT 012 248 (BH)

PREFACE

This is a full report of a two-part study of the major agricultural handling and processing industries qualifying for partial overtime exemption under section 7(c) and/or section 7(d) of the Fair Labor Standards Act, as amended by the Fair Labor Standards Amendments of 1966.

This study, which is part of a continuing research program of the Wage and Hour and Public Contracts Divisions relating to the labor standards prescribed by the Fair Labor Standards Act of 1938, as amended, provides a basis for evaluating the need for overtime exemptions available to agricultural processing industries.

This study was prepared in the Office of Research and Legislative Analysis, Wage and Hour and Public Contracts Divisions under the direction of Jack I. Karlin.

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All Industries

STATUS OF AGRICULTURAL HANDLING AND PROCESSING
INDUSTRIES UNDER THE FAIR LABOR STANDARDS ACT

Generally, the minimum wage and overtime provisions of the Fair Labor Standards Act apply to any employee in the agricultural processing industries who is individually engaged in interstate commerce or in the production of goods for interstate commerce or to employees of any enterprise which has an annual gross volume of sales of $250,000 and which has some employees who are so engaged.

The Fair Labor Standards Amendments of 1966 made major revisions in the complex and overlapping partial and complete overtime exemptions applicable to certain employees engaged in the processing of agricultural commodities--especially the old sections 7(b)(3), 7(c), and 13(a)(10). The amendments replaced section 7(b)(3) with a new section 7(c), replaced section 7(c) with a new section 7(d), and repealed section 13(a)(10).

The new section 7(c) of the amended act exempts from the overtime requirement of section 7(a) for an aggregate of 14 weeks in the calendar year any employee employed by an employer in an industry found by the Secretary of Labor to be of a "seasonal nature" provided the employee is paid one and one-half times his regular rate of pay for all hours worked in excess of 10 hours in a workday or 50 hours in a workweek. The basis of exemption in section 7(c) as in the old section 7(b)(3) rests on an administrative finding that the particular industry is of a seasonal nature. Agricultural processing industries qualifying for exemption under old section 7(b)(3) have been found to qualify for the new section 7(c) exemption. The new section 7(c) is the exemption of most general application for industries engaged in the processing of agricultural or horticultural commodities. As provided by Part 526 of the Code of Federal Regulations the following industries, or segments of industries, engaged in the handling and processing of agricultural commodities as well as a number of nonagricultural industries have been found to be "seasonal in nature" and thus qualifying for the exemption under section 7(c):

Alfalfa and coastal bermuda grass
Almond hulling
Beet sugar
Cane sugar (Louisiana)
Citrus pulp and waste dehydrating in Texas
Cotton ginning
Cotton storing and compressing
Flax straw
Grain
Grass, clover, and other forage seed crops
Meat curing and packing (Virginia-Smithfield)

Peanuts
Pecan packing
Seed
Sorgo sirup (Iowa)
Soybeans
Tobacco
Tung nuts
Walnuts and filberts
Raw shorn fleece wool
Wool and mohair (Texas)

The major difference between the new section 7(c) exemption provision and the old 7(b)(3) is that a stricter standard was established for the payment of overtime compensation during the exempt period. Formerly, overtime hours worked during the exemption period were compensable at premium overtime rates only if they exceeded 12 hours in any workday or 56 hours in any workweek.

The new section 7(d) exempts from the overtime requirements of section 7(a) for an aggregate of 14 weeks in the calendar year any employee of an employer in an industry engaged in handling, packing, preparing, storing, first processing, or canning of any perishable agricultural or horticultural commodities in their raw or natural state if the employee--

(1) is employed in an enterprise which is in an industry found by the Secretary of Labor to be either (a) "characterized by marked annually recurring seasonal peaks of operation at the places of first marketing or first processing of agricultural or horticultural commodities from farms if such industry is engaged in the handling, packing, preparing, storing, first processing, or canning of any perishable agricultural or horticultural commodities in their raw or natural state," or (b) "of a seasonal nature and engaged in the handling, packing, storing, preparing, first processing, or canning of any perishable agricultural or horticultural commodities in their raw or natural state," and

(2) is paid one and one-half times his regular rate of pay for all hours worked in excess of ten hours in any workday or 48 hours in any workweek during the exemption period.

The new section 7(d) made major changes in the old section 7(c). The old section 7(c) contained both year-round and 14-week overtime pay exemptions. None of these exemptions depended upon an administrative finding concerning the seasonal character of the particular industry. The overtime pay exemptions that were afforded by old section 7(c) were as follows:

(1) A year-round exemption for employees of an employer in any place of employment where the employer is engaged in--

(a) the first processing of milk, buttermilk, whey, skimmed milk, or cream into dairy products,

(b) the ginning and compressing of cotton, or the processing of cottonseed, or

(c) the processing of sugar beets, sugar-beet molasses, sugarcane, maple sap into sugar (but not refined sugar) or into syrup;

(2) An exemption for an aggregate of 14 weeks in any calendar year for employees of an employer in any place of employment where the employer is engaged in--

(a) the first processing, canning, or packing of perishable or seasonal fresh fruits and vegetables,

(b) the first processing, within the area of production, of any agricultural or horticultural commodity during seasonal operations, or

(c) handling, slaughtering, or dressing poultry or livestock.

The dairy products and cottonseed processing industries have been found to qualify for the partial 14-week overtime exemption under the new section 7(d).

Some agricultural processing industries have been found to be seasonal in nature and engaged in certain operations on perishable agricultural or horticultural commodities in their raw or natural state so that both the new sections 7(c) and 7(d) apply to them. These industries can claim an aggregate of 10 weeks of exemption under each new section or an aggregate of 20 exempt weeks during the calendar year. The following industries have been found to qualify for both the section 7(c) and section 7(d) exemptions:

Sugar cane processing and milling (Florida and Puerto Rico)
Fresh fruits and vegetables
Nursery stock storing and packing
Hop drying
Mint oil distilling
Field grown cut and potted flower industry

An employer in any of the above industries qualifying for exemptions under both new sections 7(c) and 7(d) is required to compensate employees at one and one-half times their regular rates for hours worked in excess of 10 hours in any workday or 50 hours in any workweek under the 10-week exemption period claimed under section 7(c) and for hours worked in

excess of 10 in any workday or 48 in any workweek during the 10-week exemption period claimed under section 7(d). Under the Act prior to the 1966 amendments, an employer qualifying for limited exemption under the old sections 7(b)(3) and 7(c) could claim an aggregate of 28 exempt workweeks.

For all workweeks in which sections 7(c) or 7(d) have not been applied, one and one-half times the regular rate must be paid for all hours worked in the workweek in excess of 40 hours.

The 1966 amendments also made further modifications in the agricultural processing exemptions by moving the following exemptions from section 13(a) to section 13(b) thereby continuing them as complete year-round overtime exemptions while repealing the exemption from the minimum wage requirements.

> "13(b)(14) - any employee employed within the area of production. . .by an establishment commonly recognized as a country elevator, including such an establishment which sells products and services used in the operation of a farm, if no more than five employees are employed in the establishment in such operations;
>
> "13(b)(15) - any employee engaged in ginning of cotton for market, in any place of employment located in a county where cotton is grown in commercial quantities, or in the processing of sugar beets, sugar-beet molasses, sugarcane, or maple sap, into sugar (other than refined sugar) or syrup;
>
> "13(b)(16) - any employee engaged (A) in the transportation and preparation for transportation of fruits or vegetables, whether or not performed by the farmer, from the farm to a place of first processing or first marketing within the same State, or (B) in transportation, whether or not performed by the farmer, between the farm and any point within the same State of persons employed or to be employed in the harvesting of fruits or vegetables;"

The portion of the overtime exemption in section 13(b)(15) relating to the processing of sugar beets, sugar-beet molasses, sugarcane, or maple sap, into sugar (other than refined sugar) or syrup was moved by the amendments from the old section 7(c) to section 13(b) thereby continuing the complete year-round exemption; however, the scope of the exemption was narrowed somewhat since it applied formerly to any employee in any place of employment where the employer was engaged in the stated operations. Generally, the effect is to limit the exemption to production workers while extending overtime protection to clerical and other office workers.

For those agricultural processing workers subject to the minimum wage requirements of the law prior to the 1966 amendments, the minimum wage was increased to $1.60 an hour on February 1, 1968. For those workers subject to the minimum wage for the first time as a result of the repeal of section 13(a)(10) or the transfer of the other agricultural processing exemptions from section 13(a) to section 13(b), the applicable minimum wage became $1.30 an hour on February 1, 1969. This minimum will be increased to $1.45 an hour on February 1, 1970, and to $1.60 an hour on February 1, 1971.

SPECIAL SURVEY

The 1966 amendments to the Fair Labor Standards Act cut back the overtime exemptions available to industries engaged in the processing and handling of agricultural products. The possibility of repealing such exemptions entirely was indicated in the following statement included in the Conference Report on the Fair Labor Standards Amendments of 1966:

> It was the declared intention of the conferees to give notice that the days of overtime exemptions for employees in the agricultural processing industry are rapidly drawing to a close, because advances in technology are making the continuation of such exemption unjustifiable.

The Wage and Hour and Public Contracts Divisions initiated a two-part study to provide information on the need for the partial overtime exemptions available to agricultural processing industries under section 7(c) and/or section 7(d) of the Fair Labor Standards Act. Each of these sections provides an exemption from the overtime provisions of the Act for 14 workweeks in any calendar year. If both sections 7(c) and 7(d) apply, the exemption period is limited to 20 workweeks, 10 weeks under each exemption. The exemptions are partial in that they are for limited periods of time and during exempt workweeks employees must be paid not less than one and one-half times their regular rate for daily hours worked in excess of 10 or for weekly hours worked in excess of 50 (section 7(c)) or 48 (section 7(d)).

Because of the complexity of the survey procedure, the study was confined to hours of work in the major agricultural processing industries qualifying for partial overtime exemption which deal with perishable agricultural commodities and have been found by the Secretary of Labor to be of a seasonal nature (section 7(c)); or to be characterized by marked annually recurring peaks of operation at the places of first marketing or first processing of agricultural or horticultural commodities or to be of a seasonal nature (section 7(d)).

The first part of the study included eight agricultural processing industries that qualify for 14 weeks of partial overtime exemption either under section 7(c) or section 7(d) of the Act. As indicated below, six of the industries qualify for exemption under section 7(c) and two qualify under section 7(d). Data were tabulated separately for each of the eight industries and for fluid milk processing, the major segment of the milk and cream industry. All eight industry surveys were nationwide in scope (the survey of the tobacco warehousing industry included Puerto Rico).

Industries exempt under section 7(c)

Tobacco warehousing
Tobacco stemming and redrying

Grain storage facilities
Sugar beet processing
Cotton ginning
Cotton storing and compressing

Industries exempt under section 7(d)

Cottonseed processing
Milk and cream processing and handling
  Fluid milk processing

The second part of the study included the major agricultural processing industries that qualify for 20 weeks of partial overtime exemption--10 weeks under section 7(c) and 10 weeks under section 7(d). It covered the fresh fruit and vegetable processing industry and sugar cane processing in Puerto Rico, Florida, Louisiana, and Hawaii. For each of the four segments of the fresh fruit and vegetable industry listed below, data were tabulated relating to region and area. For sugar cane processing, data were tabulated for each of the three States and Puerto Rico since the applicability of sections 7(c) and 7(d) varies among these areas. In Florida and Puerto Rico, sugar cane processing may qualify for partial overtime exemption under both sections 7(c) and 7(d); in Louisiana, the processing of sugar cane qualifies for exemption only under section 7(c) and in Hawaii, neither section 7(c) nor section 7(d) applies.

Industries exempt under both section 7(c) and section 7(d)

Fresh fruit and vegetable processing and handling:

Canning, drying, and other processing, except freezing, of fresh noncitrus fruits and vegetables
Freezing of fresh noncitrus fruits and vegetables
Processing of fresh citrus fruits
Handling of fresh fruits and vegetables

Sugar cane processing:

Puerto Rico
Florida
Louisiana 1/
Hawaii 2/

1/ Only section 7(c) applies to sugar cane processing in Louisiana.

2/ Neither section 7(c) nor section 7(d) applies in Hawaii.

The field surveys were conducted for the Wage and Hour and Public Contracts Divisions by the U.S. Department of Agriculture. The surveys provide data for calendar year 1967 or 1968 on number of establishments, nonsupervisory employment, nonsupervisory man-hours, the extent of collective bargaining, and the overtime standards in labor-management agreements. Data on nonsupervisory employment and man-hours were collected for each workweek of the calendar year. For each establishment, the workweeks were then ranked by weekly man-hours to provide an indication of the length of the processing season, the changes in the intensity of processing activity, and the proportion of annual man-hours worked during any specified number of the most active workweeks.

Additional data on man-hours, weekly hours of work, premium payments for overtime hours, and shift operations were collected from each establishment for five or six selected workweeks. For the industries surveyed in phase one of the study, the selected weeks included the peak week, the seventh highest week, the tenth highest week, the fourteenth highest week, and the twentieth highest week in terms of aggregate weekly hours worked by nonsupervisory employees. For the industries surveyed in the second phase, data for an additional workweek, the seventeenth highest, were also collected.

The data for the selected workweeks yielded distributions of man-hours by individual employee-weekly hours of work and distributions of employees by weekly and daily hours of work. These tabulations provide data on hours of work, overtime man-hours, and premium payments for overtime hours during periods in which establishments are most likely to utilize the partial overtime exemptions available under section 7(c) or section 7(d). Tabulations were also developed to ascertain the relationship between shift operations and establishment size and the prevalence of overtime work.

The industry classifications used in these surveys should not be construed as legal definitions provided by determinations of seasonality or marked seasonal peaks of operation issued by the Secretary of Labor, but rather as general descriptions used for survey purposes. A more detailed account of the scope and method of the survey and copies of the relevant portions of the schedules used are contained in Appendix I of this report. The legal definitions of the industries studied are presented in Appendix II of this report.

FINDINGS AND RECOMMENDATIONS

The survey findings clearly indicate that consideration should be given to the phasing out of the overtime exemptions currently available to the agricultural handling and processing industries under sections 7(c) and 7(d) of the Fair Labor Standards Act even though this would affect a significant proportion of man-hours in two of the industries studied. Although focusing primarily on sections 7(c) and 7(d) of the Act, the survey data also indicate that there is no sound basis for the continuation of the year-round exemptions available under sections 13(b)(14), (15), and (16) of the Act nor for the overlap that presently exists between the exemptions under sections 7(c) and/or 7(d) and those under section 13(b).

The favored position held for three decades by agricultural handlers and processors because of full and partial exemption from the 40-hour weekly overtime standard applicable to most industries covered by the FLSA needs reexamination:

1. Existing exemptions are not fully utilized. The degree of utilization varies among the industries; it is markedly higher in sugar cane processing in Louisiana and cotton ginning than in the other industries studied.

2. Many establishments are presently paying premium rates of not less than one and one-half times the regular rate for hours worked in excess of 40 a week. Consequently, the continued existence of seasonal variations or the prevalence of long employee workweeks is not necessarily a conclusive indicator of the need for an overtime exemption.

3. Under the current exemption provisions, some industries that qualify for 20 weeks of exemption under sections 7(c) and 7(d) appear to be less seasonal than others that qualify for only 14 weeks of exemption either under section 7(c) or section 7(d).

4. A universal 40-hour workweek standard would remove intra-industry inequities which currently exist for employers who pay premium rates for hours over 40 because such rates are required in labor management agreements, or to maintain a competitive position in a specific labor market area or simply because they believe in fair labor standards.

5. The use of second and third shifts could be increased in some industries. This is one adjustment that could be made to ease the pressure of intensive deliveries of raw materials in relatively short periods of time while at the same time reducing the need for employee workweeks in excess of 40 hours.

6. In some of the agricultural processing industries, the processing period has been lengthened as a result of technological advances in methods of extending the storage life of perishable products through temporary treatment such as fast freezing, cold storage, waxing and the use of chemicals. Control over the length of the processing season is also exerted through the grower-processor contract which often permits the processor to specify the precise time for planting, harvesting and delivery.

7. There was a sharp drop in man-hours over 40 a week during the periods the exemptions were most likely to be claimed. The drop in man-hours over 40 a week generally occurred before the expiration of the exemption period. Thus, over the exemption period presently provided--14 weeks or 20 weeks--the exemptions declined in importance to handlers and processors as man-hours over 40 a week diminished. This indicates that a gradual annual cut back in the length of the exemption period would provide for orderly adjustment to the standard applied in other industries 30 years ago.

INTER-INDUSTRY SUMMARY

This summary provides a comparative analysis of the survey findings for all of the agricultural processing industries selected for study. The data are useful in ascertaining the relative importance of the partial overtime exemption under section 7(c) and/or section 7(d) of the Fair Labor Standards Act and in assessing the relevance of selected factors which are often used to justify the continuation of these exemptions. In addition, the data provide some indication of the need for and use of the year-round exemptions available under sections 13(b)(14), 13(b)(15), or 13(b)(16) to segments of the grain storage, sugar beet processing, cotton ginning, sugar cane processing and fresh fruit and vegetable industries.

The surveys provide data relating either to calendar year 1967 or 1968 for a total of 25,886 establishments employing 806,500 nonsupervisory workers during the peak week of operation in each establishment during the year for which data were collected (Table 1). All told, the surveyed industries used a total of 908.6 million man-hours in calendar year 1967 or 1968. A fourth of these hours were accounted for by milk and cream processors and a sixth by canners and dryers of noncitrus fresh fruits and vegetables. The grain storage industry and fresh fruit and vegetable handlers each accounted for a tenth and the remaining industries accounted for less than 3 percent each.

In this summary, the four segments of the fresh fruits and vegetables industry and the four sugar cane processing areas for which separate data were collected are treated as separate industries.

Length of Active Season

There were substantial variations among the industries in the degree of seasonality as measured by the concentration of man-hours within limited periods of time.

Industries exempt under section 7(c) or 7(d)

In 3 of the 8 industries--tobacco stemming and redrying, tobacco warehousing and cotton ginning--more than three-fourths of the annual man-hours in 1967 were accounted for by the 14 most active weeks--weeks in which the partial overtime exemption would most likely be claimed (Table 2). For the same period in the other five industries, the proportions ranged downward from 53 percent in the sugar beet processing industry to 29 percent in the milk and cream processing industry.

Ninety-five percent of the establishments in the tobacco warehousing industry used three-fourths of annual man-hours in the 14 most active weeks (Table 3). At the other extreme, no more than 3 percent of the sugar beet, cottonseed processing, and milk and cream processing establishments used three-fourths of annual man-hours in the 14 most active weeks.

Industries exempt under both sections 7(c) and 7(d)

Fresh fruits and vegetables--The four fresh fruits and vegetables industries, which qualify for 20 weeks of partial overtime exemption, are less seasonal than three of the industries which qualify for only 14 weeks of exemption. Of the four industries, processors of fresh citrus fruits were the least seasonal, using 57 percent of 1968 annual man-hours in the 20 most active weeks and handlers of fresh fruits and vegetables, using 75 percent, were the most seasonal. About two-thirds of the annual man-hours were used during this period in the other two industries--canning and drying of fresh noncitrus fruits and vegetables and freezing of fresh noncitrus fruits and vegetables.

On an establishment basis, a similar pattern prevailed with regard to seasonality. For example, the proportion of establishments using 75 percent of annual man-hours in 20 weeks or less was largest in the fresh fruit and vegetable handling industry, 59 percent, and the smallest in the citrus processing industry, 9 percent. In the other two industries about half of the establishments used 75 percent of annual man-hours during the peak 20 weeks.

Sugar cane processing--The sugar cane processing industries in Florida and Puerto Rico--the areas in which processors qualify for 20 weeks of partial overtime exemption under sections 7(c) and 7(d)--showed an almost identical pattern of seasonality. In both areas, the proportions of annual man-hours used in the 7, 10 and 20 most active weeks were a fourth, a third and three-fifths, respectively. Sugar cane processing in Louisiana is characterized by a very short processing season, as reflected by the use of two-thirds of annual man-hours in the 14 most active weeks--the period in which the 14 weeks of exemption available under section 7(c) would most likely be utilized. In Hawaii, where neither exemption (section 7(c) or 7(d)) applies and cane is processed throughout most of the year, only 45 percent of the annual man-hours were used in the 20 most active workweeks.

In two-fifths of the sugar cane processing plants in Louisiana, 75 percent of the man-hours were used in 20 weeks or less. None of the plants in Florida and only a ninth of the plants in Puerto Rico fell within this category.

Multiple Shift Operations and Seasonality

The use of multiple shifts may also be an indication of seasonality since shift operations, when feasible, make possible a large volume of production during a limited number of weeks. Shift operations can also reduce overtime costs through shorter workweeks for individual employees and at the same time permit a more intensive use of processing facilities. In each of the industries studied, some establishments operated with more than one shift. The prevalence of multiple shift operations, however, appeared to be more dependent upon the nature of the processing activities rather than upon the degree of seasonality.

Industries exempt under section 7(c) or 7(d)

In the three most seasonal industries--tobacco warehousing, tobacco stemming and redrying, and cotton ginning--from a fourth to over two-fifths of the establishments operated with multiple shifts at some time during the processing season (Table 4). In contrast, all of the sugar beet processing plants and virtually all of the cottonseed processing plants operated with multiple shifts. In the other three industries, no more than a tenth of the establishments operated with more than one shift.

Industries exempt under both sections 7(c) and 7(d)

Fresh fruits and vegetables--The proportions of fresh fruits and vegetables processing establishments using multiple shifts in the industries ranged from 45 to 62 percent. Although handlers are far more seasonal, all but 2 percent of the establishments in the industry used only one shift throughout the entire 1968 season.

Sugar cane processing--Virtually all of the sugar cane processors used multiple shifts. The length of time during which multiple shifts were in use reflected the variance in seasonality of operations among the areas. Thus, while multiple shifts were used for 9-14 weeks in 86 percent of the Louisiana plants, all of the processors in Hawaii, where the industry is not seasonal, operated with multiple shifts for 29 weeks or more.

Weekly Hours of Work

Variations among the industries in the proportions of employees working over 40 hours a week--the overtime standard applicable in the absence of an exemption--generally did not reflect the degree of seasonality or the prevalence of multiple shift operations. The proportions of employees working over 40 hours declined when selected workweeks were ranked in descending order of weekly hours worked. However, the declines in the importance of long workweeks tended to be greater in the more seasonal industries.

Industries exempt under section 7(c) or 7(d)

In the three industries with the greatest concentration of man-hours in a relatively short period--tobacco warehousing, tobacco stemming and redrying, and cotton ginning--the proportions of employees working over 40 hours in the peak week ranged from over a third to four-fifths (Table 5). In the other five industries, the proportion working such hours in the peak week ranged from over two-fifths in sugar beet processing to four-fifths in grain storage, one of the least seasonal industries. By the fourteenth highest week, only a tenth to a third of

the employees in the three most seasonal industries were working over 40 hours whereas more than a third were working such hours in 4 of the other 5 industries.

Industries exempt under both sections 7(c) and 7(d)

Fresh fruits and vegetables--The proportions of employees in the fresh fruit and vegetable industries working over 40 hours in the peak week ranged from three-fifths in the freezing industry to over seven-tenths in the citrus processing industry. In the twentieth week, the proportion working such hours was still large in citrus processing--56 percent--but had declined substantially in the other three industries, ranging from 30 to 35 percent.

Sugar cane processing--Very large proportions of the sugar cane processing employees worked over 40 hours in the peak week--nine-tenths or more in Florida and Louisiana, over half in Puerto Rico, and almost two-thirds in the least seasonal area--Hawaii. Declines in long hours of work were closely tied to seasonality of operation. By the fourteenth week, for example, only 32 percent of the employees in Louisiana were working over 40 hours compared with 85 percent in Florida. By the twentieth week, the proportion working long hours was highest in Hawaii--59 percent--and lowest in Louisiana--22 percent. The fact that over a fifth of the employees in Louisiana were working over 40 hours after the processing season was completed in virtually all Louisiana plants indicates that long workweeks, in part, reflect an industry practice rather than a need for an overtime exemption.

Relationship Between Daily and Weekly Hours of Work

In the peak week, daily hours in excess of 10--the daily overtime standard during weeks in which the exemption under sections 7(c) and 7(d) may be claimed--were in great measure confined to employees working over 40 hours a week and primarily to employees working in excess of the applicable weekly overtime standard--50 hours under section 7(c) and 48 hours under section 7(d). As weekly man-hour requirements diminished, however, the frequency with which long daily hours were worked in conjunction with long weekly hours diminished.

Industries exempt under section 7(c) or 7(d)

In six of the industries, over nine-tenths of the employees working over 10 hours at least one day in the peak week also worked over 40 hours and over four-fifths worked beyond the applicable weekly standard--50 hours under section 7(c) and 48 hours under section 7(d) (Table 6). In the other two industries--tobacco warehousing and tobacco stemming and redrying--over half of the employees working long daily hours in the peak week worked weekly hours in excess of 50.

Industries exempt under both sections 7(c) and 7(d)

Fresh fruits and vegetables--About nine-tenths or more of the employees working daily hours in excess of 10 also worked over 40 hours in the peak week in each of the four fresh fruit and vegetable industries. The proportions remained large in each of the selected weeks studied and by the twentieth highest week still ranged from 72 percent in the handling industry to 88 percent in the citrus fruit processing industry.

Sugar cane processing--In each of the sugar cane processing areas except Louisiana, all of the employees working over 10 hours at least one day in the peak week worked over 40 hours. This was also true for the tenth, fourteenth and twentieth highest weeks. In Louisiana, the most seasonal area, 98 percent of the employees working long daily hours worked over 40 hours in the peak week, but by the fourteenth week only half of the 400 employees working over 10 hours at least one day worked weekly hours in excess of 40.

Industry Use of Overtime Exemptions

With the exception of sugar cane processors in Louisiana, none of the industries fully utilized the overtime exemptions provided by the Fair Labor Standards Act. This was evidenced by the payment of premium rates of not less than one and one-half times the regular rate for a substantial proportion of the hours worked over 40, but within any applicable exemption limits, during the height of the processing season when the exemption(s) would most likely be utilized. 1/ Utilization of the exemptions varied substantially among the industries studied, but tended to be somewhat greater in the more seasonal industries. Also, as weekly man-hour requirements declined, the utilization of the exemptions diminished.

Industries exempt under section 7(c) or 7(d)

In tobacco warehousing, cotton ginning and tobacco stemming and redrying--the three most seasonal industries in this group--the proportion of peak week man-hours over 40 in workweeks of over 40 but not more than 50 hours paid for at premium rates was 6, 11 and 26 percent, respectively (Table 7). By the fourteenth highest week the proportions had increased, ranging from 29 to 40 percent. In the other five industries, the proportions of man-hours within the exemption limits under section 7(c) or 7(d) paid for at premium rates exceeded a third in the peak week and ranged upwards to 97 percent in sugar beet processing. By the fourteenth week, such proportions were well over half in all five industries.

1/ The proportions paid for at premium rates may include some premium pay for hours other than those in excess of 40.

Industries exempt under both sections 7(c) and 7(d)

Fresh fruits and vegetables--It would appear that processors of fresh citrus fruits, the least seasonal of the four fruits and vegetables industries, used the 20 weeks of partial overtime exemption to a lesser degree than employers in the other three industries. In the citrus industry, two-thirds of the man-hours over 40 in workweeks of over 40 but not more than 50 hours were paid for at premium rates in the peak week, four-fifths in the tenth week and almost all in the fourteenth and twentieth highest weeks. In contrast, in the handling of fresh fruits and vegetables only a fifth of the hours worked within the exemption limits were paid for at premium rates in the peak week and only three-tenths in the tenth and fourteenth weeks. The proportions were also low for noncitrus freezers--18 and 30 percent in the peak and tenth weeks, respectively--while those for noncitrus canners and dryers ranged from a third in the peak week to four-fifths in the twentieth week.

Sugar cane processing--Because of the very few man-hours accounted for by workweeks of over 40 but not more than 50 hours in Louisiana and Florida and the complete year-round exemption under section 13(b)(15) that may be claimed by processors in all four areas, the most meaningful indication of the utilization of the exemptions available to sugar cane processors is provided by the proportion of man-hours over 40 paid for at premium rates. It is evident that Louisiana processors were making almost full use of the exemptions available under section 13(b)(15) and section 7(c) as virtually all of the man-hours over 40 in the peak, seventh and tenth weeks were paid for at straight-time rates. At the other extreme, processors in Hawaii made no use of the unlimited exemption under section 13(b)(15) apparently because their collective bargaining agreements provide for the payment of premium rates for hours over 40 a week and 8 a day. The exemptions available to processors in Puerto Rico and Florida--sections 7(c), 7(d) and 13(b)(15)--were also markedly underutilized. In Puerto Rico, from 65 to 87 percent of the man-hours over 40 were paid for at premium rates during the selected weeks studied and in Florida, the range was from 53 to 88 percent.

	Percent of man-hours over 40 paid for at premium rates					
Area	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week
Florida	56	56	56	59	53	88
Puerto Rico	76	68	70	67	65	87
Louisiana	1/	1/	1/	100	67	100
Hawaii	100	100	102	100	100	100

1/ Less than 1 percent.

Note: The proportions may include some pay for daily overtime hours.

Implications of a 40-hour Overtime Standard

In considering the implications of eliminating the overtime exemptions under sections 7(c) and 7(d), it is necessary to focus on the relationship between man-hours in excess of 40 a week and man-hours paid for at premium rates in workweeks of over 40 hours. The figure obtained by subtracting man-hours paid for at premium rates in workweeks of over 40 hours from man-hours over 40 a week provides a good indication of the additional man-hours which would have to be compensated for at premium rates if the overtime exemptions were no longer available. 1/ Among the industries studied, there was no significant correlation between the impact of a 40-hour standard and seasonality or the specific exemption section(s) under which the industries fall. In the peak week of 1967 or 1968, the ratio of man-hours in excess of 40 paid for at straight-time rates to aggregate man-hours ranged from 0 to 14 percent in 14 of the 16 industries (Table 8). The highest ratio (50 percent) occurred in sugar cane processing plants in Louisiana followed by 37 percent in cotton ginning. At the other extreme, only 3 percent of the man-hours in the Puerto Rico sugar cane industry and the milk and cream processing industry would be affected by a 40-hour standard. In Hawaii, collective bargaining agreements covering practically all workers provide for premium overtime pay for all hours over 8 per day and 40 per week.

The ratios for the peak week present the maximum impact of a 40-hour standard for each industry since man-hour requirements diminish as the processing season progresses. By the fourteenth week, for example, the proportions of man-hours in excess of 40 paid for at straight-time rates comprised less than 6 percent of the weekly man-hours in all but two of the industries. The highest ratios were 10 percent in the sugar cane processing industry in Florida and 7 percent in cottonseed processing establishments.

Unionization

Collective bargaining agreements were nonexistent in 2 of the industries studied--tobacco warehousing and cotton ginning. All sugar beet processors, all sugar cane processors in Hawaii, and over nine-tenths of the sugar cane processors in Puerto Rico were unionized (Table 9). The next largest proportion--56 percent--was for the sugar cane processing in Florida. In the other surveyed industries, the proportions of establishments with union contracts ranged from a third in cottonseed processing to 3 percent in grain storage. In most establishments, the collective bargaining agreement provided for premium overtime pay.

1/ Since wage data were not collected in the surveys, the increase in the wage bill resulting from a 40-hour overtime standard could not be estimated.

In the three industries in which collective bargaining was most prevalent, the proportion of employees in the peak week covered by agreements with premium pay provisions ranged from 78 to 99 percent. The lowest proportions--less than 6 percent--were found in the Louisiana sugar cane processing and the fruit and vegetable handling industries. In the other industries, the proportion of employees covered by premium pay provisions ranged from 10 to 44 percent of peak week employment.

The most common overtime standard in collective bargaining agreements was for premium pay for hours over 40 a week and 8 a day. In three industries, this provision applied to virtually all of the employees covered by agreements requiring premium pay. In six others, at least half of the covered employees were subject to such a provision. Most of the employees not covered by both the "over 40 hours a week and 8 hours a day" premium pay provisions were covered by either one or the other. Covered employees of sugar cane processors in Florida and Puerto Rico were the major exceptions to this pattern as about seven-tenths or more of these employees were under agreements providing premium pay for hours over 48 a week and in the case of Puerto Rico, 8 hours a day as well.

Data were also collected to determine the extent to which waivers of contractual premium overtime provisions allowed establishments to utilize the overtime exemptions available to them under the Fair Labor Standards Act. Waiver provisions were important in four industries--tobacco stemming and redrying, canning and drying of fresh fruits and vegetables, freezing of fresh fruits and vegetables, and sugar cane processing in Louisiana--affecting seven-tenths or more of the employees covered by contracts with premium pay provisions. The waiver periods for the two fresh fruit and vegetable industries generally did not exceed 20 weeks while those for the other two industries did not exceed 14 weeks. Some establishments in the fresh fruit and vegetable handling, citrus processing, cottonseed processing, sugar beet processing, and cotton storing and compressing industries also had contracts with waiver provisions but relatively few workers were covered by these agreements.

Table 1. Number and percent distribution of establishments, nonsupervisory employment in peak week and annual man-hours, by selected industry, 1967 or 1968

Industry	Establishments in peak week		Nonsupervisory employment in peak week		Annual man-hours	
	Number	Percent	Number (in thousands)	Percent	Number (in thousands)	Percent
All industries	25,886	100.0	806.5	100.0	908,611	100.0
Industries exempt under section 7(c)						
Tobacco warehousing	641	2.5	29.5	3.7	8,164	0.9
Tobacco stemming and redrying	69	0.3	18.4	2.3	10,032	1.1
Grain storage	7,817	30.2	54.5	6.8	88,548	9.7
Sugar beet processing	58	0.2	21.5	2.7	20,586	2.3
Cotton ginning	3,753	14.5	49.5	6.1	24,166	2.7
Cotton storing and compressing	895	3.5	17.1	2.1	18,409	2.0
Industries exempt under section 7(d)						
Cottonseed processing	132	0.5	7.2	0.9	9,528	1.0
Milk and cream processing and handling	4,936	19.1	120.3	14.9	237,595	26.1
Fluid milk processing	3,135	12.1	83.6	10.4	166,973	18.4

Table 1. Number and percent distribution of establishments, nonsupervisory employment in peak week and annual man-hours, by selected industry, 1967 or 1968 (Concluded)

Industry	Establishments in peak week		Nonsupervisory employment in peak week		Annual man-hours	
	Number	Percent	Number (in thousands)	Percent	Number (in thousands)	Percent
Industries exempt under sections 7(c) and 7(d)						
Fresh fruits and vegetables:						
Canning, drying, and other processing, except freezing, of fresh noncitrus fruits and vegetables	1,196	4.6	204.1	25.3	158,709	17.5
Freezing of fresh noncitrus fruits and vegetables	196	0.8	27.0	3.3	21,858	2.4
Processing of fresh citrus fruits	65	0.3	18.1	2.2	25,206	2.8
Handling of fresh fruits and vegetables	2,900	11.2	134.5	16.7	86,539	9.5
Sugar cane processing:						
Florida 1/	9	*	1.8	0.2	2,775	0.3
Puerto Rico 1/	18	0.1	5.4	0.7	6,566	0.7
Louisiana 2/	43	0.2	5.0	0.6	5,894	0.6
Hawaii 3/	23	0.1	9.0	1.1	17,063	1.9

1/ Establishments may claim 20 weeks of exemption; 10 weeks under section 7(c) and 10 weeks under section 7(d).
2/ Establishments may claim 14 weeks of exemption only under section 7(c).
3/ Establishments may not claim exemption under either section 7(c) or 7(d).

*Less than 0.05 percent.

Note: Details may not add to 100 percent due to rounding.

Source: Surveys conducted by the U. S. Department of Agriculture for WHPC.

Table 2. Percent of annual man-hours worked during specified periods, selected industries, 1967 or 1968

Industry	Annual man-hours (in thousands)	Percent of man-hours worked in 7 most active weeks	10 most active weeks	14 most active weeks	20 most active weeks
Industries exempt under section 7(c)					
Tobacco warehousing	8,164	64.6	78.6	89.0	93.9
Tobacco stemming and redrying	10,032	48.5	63.6	77.1	85.6
Grain storage	88,548	20.7	27.7	36.4	48.2
Sugar beet processing	20,586	28.7	39.5	53.0	66.7
Cotton ginning	24,166	61.3	72.7	79.6	85.8
Cotton storing and compressing	18,409	25.1	33.5	43.4	55.9
Industries exempt under section 7(d)					
Cottonseed processing	9,528	23.5	32.5	43.6	58.2
Milk and cream processing and handling	237,595	15.0	21.2	29.3	41.2
Fluid milk processing	166,973	14.8	20.9	28.9	40.8

Table 2. Percent of annual man-hours worked during specified periods, selected industries, 1967 or 1968 (Concluded)

Industry	Annual man-hours (in thousands)	Percent of man-hours worked in 7 most active weeks	10 most active weeks	14 most active weeks	20 most active weeks
Industries exempt under sections 7(c) and 7(d)					
Fresh fruits and vegetables:					
Canning, drying, and other processing, except freezing, of fresh noncitrus fruits and vegetables	158,709	35.5	45.7	56.4	67.1
Freezing of fresh noncitrus fruits and vegetables	21,858	30.4	40.0	50.8	63.9
Processing of fresh citrus fruits	25,206	22.5	31.2	42.0	56.6
Handling of fresh fruits and vegetables	86,539	39.2	49.7	61.0	74.7
Sugar cane processing:					
Florida 1/	2,775	24.6	34.3	46.6	61.8
Puerto Rico 1/	6,566	23.6	33.3	45.8	61.2
Louisiana 2/	5,894	44.1	58.5	66.2	72.5
Hawaii 3/	17,063	16.3	23.1	32.0	44.9

1/ Establishments may claim 20 weeks of exemption; 10 weeks under section 7(c) and 10 weeks under section 7(d).
2/ Establishments may claim 14 weeks of exemption only under section 7(c).
3/ Establishments may not claim exemption under either section 7(c) or 7(d).

Source: Surveys conducted by the U. S. Department of Agriculture for WHPC.

Table 3. Percent of establishments using 50 and 75 percent of annual man-hours within specified periods, selected industries, 1967 or 1968

Industry	Number of establishments	Percent of establishments with 50 percent of man-hours worked in: 8 most active weeks or less	9-14 most active weeks	15-20 most active weeks	Percent of establishments with 75 percent of man-hours worked in: 8 most active weeks or less	9-14 most active weeks	15-20 most active weeks
Industries exempt under section 7(c)							
Tobacco warehousing	641	95.5	2.3	0.8	64.9	30.4	0.9
Tobacco stemming	69	65.2	24.6	1.4	21.7	50.7	13.0
Grain storage	7,817	13.2	7.8	21.4	8.6	3.4	2.8
Sugar beet processing	58	-	75.9	24.1	-	3.4	13.8
Cotton ginning	3,753	87.4	8.2	3.3	45.4	33.9	7.6
Cotton storing and compressing	895	17.7	16.9	34.9	5.5	10.9	8.2
Industries exempt under section 7(d)							
Cottonseed processing	132	8.3	28.0	45.5	0.8	1.5	18.2
Milk and cream processing and handling	4,936	0.2	1.3	2.8	-	0.7	0.3
Fluid milk processing	3,135	0.3	1.2	1.1	-	1.1	0.4

Table 3. Percent of establishments using 50 and 75 percent of annual man-hours within specified periods, selected industries, 1967 or 1968 (Concluded)

Industry	Number of establishments	Percent of establishments with 50 percent of man-hours worked in			Percent of establishments with 75 percent of man-hours worked in		
		8 most active weeks or less	9-14 most active weeks	15-20 most active weeks	8 most active weeks or less	9-14 most active weeks	15-20 most active weeks
Industries exempt under sections 7(c) and 7(d)							
Fresh fruits and vegetables:							
Canning, drying, and other processing, except freezing, of fresh noncitrus fruits and vegetables	1,196	42.6	18.2	13.5	19.6	15.3	13.0
Freezing of fresh noncitrus fruits and vegetables	196	39.3	24.5	26.5	24.5	12.2	15.3
Processing of fresh citrus fruits	65	1.5	21.5	50.8	1.5	-	7.7
Handling of fresh fruits and vegetables	2,900	43.3	31.0	11.0	32.3	13.3	13.3
Sugar cane processing:							
Florida 1/	9	11.1	11.1	77.8	-	-	11.1
[illegible] 2/	18	[illegible]	[illegible]	[illegible]	-	11.1	-
[illegible]					-	18.6	20.9
					-	-	-

1/ Establishments may claim 20 weeks of exemption; 10 weeks under section 7(c) and 10 weeks under section 7(d).
2/ Establishments may claim 14 weeks of exemption only under section 7(c).
3/ Establishments may not claim exemption under either section 7(c) or 7(d).

Source: Surveys conducted by the U. S. Department of Agriculture for WHPC.

Table 4. Distribution of establishments by single and multiple shift operations, selected industries, 1967 or 1968

Industry	Number of establishments	Percent of establishments operating						
		Single shift in all weeks	Multiple shifts for specified number of weeks					
			Total	1-8 weeks	9-14 weeks	15-20 weeks	21-28 weeks	29 weeks or more
Industries exempt under section 7(c)								
Tobacco warehousing	641	71.3	28.7	9.3	18.9	0.5	-	-
Tobacco stemming and redrying	69	56.5	43.5	4.3	26.1	13.1	-	-
Grain storage	7,817	93.1	6.9	3.9	1.4	0.3	0.1	1.2
Sugar beet processing	58	-	100.0	-	5.2	67.2	13.8	13.8
Cotton ginning	3,753	76.3	23.7	22.1	1.6	-	-	-
Cotton storing and compressing	895	99.4	0.6	0.2	0.2	0.2	-	-
Industries exempt under section 7(d)								
Cottonseed processing	132	1.5	98.5	3.8	11.4	21.2	18.9	43.2
Milk and cream processing and handling	4,936	89.7	10.3	-	-	0.5	0.2	9.6
Fluid milk processing	3,135	92.3	7.7	-	-	-	-	7.7

Table 4. Distribution of establishments by single and multiple shift operations, selected industries, 1967 or 1968 (Concluded)

Industry	Number of establishments	Percent of establishments operating						
		Single shift in all weeks	Multiple shifts for specified number of weeks					
			Total	1-8 weeks	9-14 weeks	15-20 weeks	21-28 weeks	29 weeks or more
Industries exempt under sections 7(c) and 7(d)								
Fresh fruits and vegetables:								
Canning, drying, and other processing, except freezing, of fresh noncitrus fruits and vegetables	1,196	55.4	44.6	12.7	12.1	7.7	4.1	8.0
Freezing of fresh noncitrus fruits and vegetables	196	46.9	53.1	10.2	14.8	11.7	3.6	12.8
Processing of fresh citrus fruits	65	38.5	61.5	3.1	4.6	4.6	10.8	38.5
Handling of fresh fruits and vegetables	2,900	97.8	2.2	1.1	0.2	0.3	-	0.6
Sugar cane processing:								
Florida 1/	9	-	100.0	-	11.1	88.9	-	-
Puerto Rico 1/	18	-	100.0	-	11.1	44.4	44.4	-
Louisiana 2/	43	2.3	97.7	9.3	86.0	2.3	-	-
Hawaii 3/	23	-	100.0	-	-	-	-	100.0

1/ Establishments may claim 20 weeks of exemption; 10 weeks under section 7(c) and 10 weeks under section 7(d).
2/ Establishments may claim 14 weeks of exemption only under section 7(c).
3/ Establishments may not claim exemption under either section 7(c) or 7(d).

Source: Surveys conducted by the U. S. Department of Agriculture for WHPC.

Table 5. Number of nonsupervisory employees and percent working over 40 hours in the peak week, tenth, fourteenth, and twentieth highest weeks of 1967 or 1968, selected industries

Industry	Total number of employees (in thousands)				Percent working over 40 hours			
	Peak week	10th highest week	14th highest week	20th highest week	Peak week	10th highest week	14th highest week	20th highest week
Industries exempt under section 7(c)								
Tobacco warehousing	29.5	11.3	4.7	1.9	35.9	23.9	10.8	4.1
Tobacco stemming and redrying	18.4	13.0	8.0	3.3	65.0	46.0	33.1	16.2
Grain storage	54.5	42.0	39.3	36.8	79.6	74.9	72.9	70.6
Sugar beet processing	21.5	17.6	16.7	9.0	44.8	35.0	29.9	22.8
Cotton ginning	49.5	18.3	11.1	5.7	80.3	42.3	27.8	26.5
Cotton storing and compressing	17.1	12.7	11.6	9.8	57.7	39.2	34.4	27.9
Industries exempt under section 7(d)								
Cottonseed processing	7.2	6.2	5.9	5.0	65.3	63.3	52.0	52.0
Milk and cream processing and handling	120.3	117.2	115.1	113.6	60.7	53.1	51.4	54.2
Fluid milk processing	83.6	81.9	80.3	79.8	56.6	51.2	50.2	52.0

Table 5. Number of nonsupervisory employees and percent working over 40 hours in the peak week, tenth, fourteenth, and twentieth highest weeks of 1967 or 1968, selected industries (Concluded)

Industry	Total number of employees (in thousands)				Percent working over 40 hours			
	Peak week	10th highest week	14th highest week	20th highest week	Peak week	10th highest week	14th highest week	20th highest week
Industries exempt under sections 7(c) and 7(d)								
Fresh fruits and vegetables:								
Canning, drying, and other processing, except freezing, of fresh noncitrus fruits and vegetables	204.1	126.4	97.7	65.5	61.8	48.6	49.1	29.5
Freezing of fresh noncitrus fruits and vegetables	27.0	18.3	15.4	12.3	59.8	37.8	37.5	34.8
Processing of fresh citrus fruits	18.1	17.0	15.9	14.3	71.5	58.0	56.6	56.0
Handling of fresh fruits and vegetables	134.5	77.6	66.7	49.4	64.1	41.9	35.7	30.8
Sugar cane processing:								
Florida 1/	1.8	1.6	1.6	1.4	89.8	88.3	84.8	54.8
Puerto Rico 1/	5.4	5.3	5.2	3.7	54.3	50.3	44.3	31.8
Louisiana 2/	5.0	4.0	1.8	1.5	93.7	68.6	32.0	22.4
Hawaii 3/	9.0	8.9	8.5	8.5	64.8	62.6	62.8	58.9

1/ Establishments may claim 20 weeks of exemption; 10 weeks under section 7(c) and 10 weeks under section 7(d).
2/ Establishments may claim 14 weeks of exemption only under section 7(c).
3/ Establishments may not claim exemption under either section 7(c) or 7(d).

Source: Surveys conducted by the U. S. Department of Agriculture for WHPC.

Table 6. Number of nonsupervisory employees working over 10 hours at least one day and percent of these employees working specified weekly hours in the peak week, tenth, fourteenth, and twentieth highest weeks of 1967 or 1968, selected industries

Industry	Employees working over 10 hours at least one day of the workweek											
	Number (in thousands)				Percent working over 40 hours a week				Percent working over applicable maximum weekly hours standard (50 or 48) 1/			
	Peak week	10th highest week	14th highest week	20th highest week	Peak week	10th highest week	14th highest week	20th highest week	Peak week	10th highest week	14th highest week	20th highest week
Industries exempt under section 7(c)												
Tobacco warehousing	2.3	0.5	0.1	-	78.3	60.0	*	-	56.5	20.0	*	-
Tobacco stemming and redrying	7.6	3.4	1.7	0.2	81.6	82.4	76.5	50.0	52.6	41.2	23.5	50.0
Grain storage	28.2	12.8	9.6	7.7	97.5	96.9	97.9	98.7	91.5	84.4	82.3	77.9
Sugar beet processing	2.8	1.1	0.9	0.5	92.9	91.0	88.9	80.0	82.1	63.6	66.7	60.0
Cotton ginning	34.5	4.2	0.9	0.3	93.3	78.6	55.6	*	89.9	61.9	44.4	66.7
Cotton storing and compressing	4.5	1.7	1.4	0.9	93.3	88.2	78.6	77.8	82.2	70.6	57.1	44.4
Industries exempt under section 7(d)												
Cottonseed processing	1.6	1.0	1.0	0.7	93.8	90.0	80.0	85.7	87.5	80.0	70.0	71.4
Milk and cream processing and handling	20.7	14.9	14.5	13.1	99.0	97.3	96.6	99.2	81.6	75.2	71.0	73.3
Fluid milk processing	13.6	9.6	9.4	8.8	99.3	97.9	96.8	98.9	80.1	77.1	73.4	75.0

See footnotes at end of table.

Table 6. Number of nonsupervisory employees working over 10 hours at least one day and percent of these employees working specified weekly hours in the peak week, tenth, fourteenth, and twentieth highest weeks of 1967 or 1968, selected industries (Concluded)

Industry	Employees working over 10 hours at least one day of the workweek											
	Number (in thousands)				Percent working over 40 hours a week				Percent working over applicable maximum weekly hours standard (50 or 48) 1/			
	Peak week	10th highest week	14th highest week	20th highest week	Peak week	10th highest week	14th highest week	20th highest week	Peak week	10th highest week	14th highest week	20th highest week
Industries exempt under sections 7(c) and 7(d)												
Fresh fruits and vegetables:												
Canning, drying, and other processing, except freezing, of fresh noncitrus fruits and vegetables	61.8	24.5	14.2	8.6	90.8	86.5	85.9	75.6	76.4	63.7	51.4	37.2
Freezing of fresh noncitrus fruits and vegetables	5.5	2.1	1.6	1.2	92.7	85.7	81.2	75.0	81.8	71.4	56.2	50.0
Processing of fresh citrus fruits	8.1	6.4	6.1	5.2	95.1	90.6	91.8	88.5	75.3	48.4	47.5	42.3
Handling of fresh fruits and vegetables	38.8	8.8	7.3	4.6	89.2	79.5	71.2	71.7	72.2	53.4	50.7	50.0
Sugar cane processing:												
Florida 2/	0.2	0.3	0.2	0.2	100.0	100.0	100.0	100.0	100.0	100.0	100.0	50.0
Puerto Rico 2/	0.5	0.4	0.4	0.4	100.0	100.0	100.0	100.0	80.0	75.0	75.0	75.0
Louisiana 3/	4.6	3.2	0.4	0.1	97.8	78.1	50.0	*	93.5	71.9	*	*
Hawaii 4/	2.3	2.3	2.0	1.9	100.0	100.0	100.0	100.0	82.6	82.6	90.0	84.2

1/ The maximum weekly hours standard after which overtime must be paid during weeks in which the 14-week exemption is used is 50 hours under section 7(c) and 48 hours under section 7(d). For industries exempt under both sections 7(c) and 7(d), the proportions are based on the 50 hour standard.

2/ Establishments may claim 20 weeks of exemption; 10 weeks under section 7(c) and 10 weeks under section 7(d).

3/ Establishments may claim 14 weeks of exemption only under section 7(c).

4/ Establishments may not claim exemption under either section 7(c) or 7(d).

* Numerical data were not shown for less than 50 employees.

Source: Surveys conducted by the U.S. Department of Agriculture for WHPC.

Table 7. Extent of premium payments for weekly overtime hours (hours over 40) for which an exemption is available under sections 7(c) and/or 7(d) of the Fair Labor Standards Act, selected work-weeks of 1967 or 1968, selected industries

Industry	Weekly hours over 40 and up to and including 50 (7c) or 48 (7d) paid for at premium rates 1/									
	Number (in thousands)					Percent				
	Peak week	7th highest week	10th highest week	14th highest week	20th highest week	Peak week	7th highest week	10th highest week	14th highest week	20th highest week
Industries exempt under section 7(c)										
Tobacco warehousing	3	2	1	1	*	6.0	9.5	6.7	33.3	*
Tobacco stemming and redrying	10	8	8	2	1	26.3	32.0	47.1	40.0	100.0
Grain storage	51	60	63	63	63	67.1	72.3	73.3	76.8	72.4
Sugar beet processing	32	28	26	23	9	97.0	100.0	100.0	104.5	100.0
Cotton ginning	4	3	2	4	3	11.1	10.3	8.7	28.6	50.0
Cotton storing and compressing	9	10	9	10	6	34.6	58.8	60.0	71.4	66.7
Industries exempt under section 7(d)										
Cottonseed processing	3	5	5	5	4	37.5	55.6	55.6	55.6	66.7
Milk and cream processing and handling	113	118	118	114	109	58.2	69.0	71.5	69.1	68.6
Fluid milk processing	66	68	68	68	63	46.8	60.7	61.8	61.8	58.9

See footnotes at end of table.

Table 7. Extent of premium payments for weekly overtime hours (hours over 40) for which an exemption is available under sections 7(c) and/or 7(d) of the Fair Labor Standards Act, selected work-weeks of 1967 or 1968, selected industries (Continued)

Industry	Weekly hours over 40 and up to and including 50 (7c) or 48 (7d) paid for at premium rates 1/									
	Number (in thousands)					Percent				
	Peak week	7th highest week	10th highest week	14th highest week	20th highest week	Peak week	7th highest week	10th highest week	14th highest week	20th highest week
Industries exempt under sections 7(c) and 7(d)										
Fresh fruits and vegetables:										
Canning, drying, and other processing, except freezing, of fresh noncitrus fruits and vegetables	124	124	82	85	48	34.5	42.6	36.6	43.1	81.4
Freezing of fresh noncitrus fruits and vegetables	7	8	7	10	6	17.5	38.1	30.4	62.5	50.0
Processing of fresh citrus fruits	16	24	21	21	19	66.7	72.7	80.8	100.0	100.0
Handling of fresh fruits and vegetables	60	41	33	23	21	20.5	21.0	29.2	29.1	40.4

See footnote at end of table.

Table 7. Extent of premium payments for weekly overtime hours (hours over 40) for which an exemption is available under sections 7(c) and/or 7(d) of the Fair Labor Standards Act, selected work-weeks of 1967 or 1968, selected industries (Concluded)

Industry	Weekly hours over 40 and up to and including 50 (7c) or 48 (7d) paid for at premium rates 1/									
	Number (in thousands)					Percent				
	Peak week	7th highest week	10th highest week	14th highest week	20th highest week	Peak week	7th highest week	10th highest week	14th highest week	20th highest week
Industries exempt under sections 7(c) and 7(d) (continued)										
Sugar cane processing:										
Florida 2/	*	*	*	*	2	*	*	*	*	66.7
Puerto Rico 2/	10	9	8	7	3	71.4	60.0	61.5	58.3	75.0
Louisiana 3/	*	*	*	2	1	*	*	*	100.0	100.0
Hawaii 4/	14	13	13	13	13	100.0	100.0	108.3	100.0	100.0

1/ The maximum weekly hours standards after which overtime must be paid during weeks in which the 14-day exemption is used is 50 hours under section 7(c) and 48 hours under section 7(d). For industries exempt under both sections 7(c) and 7(d), the proportions are based on the 50-hour standard.
2/ Establishments may claim 20 weeks of exemption; 10 weeks under section 7(c) and 10 weeks under section 7(d).
3/ Establishments may claim 14 weeks of exemption only under section 7(c).
4/ Establishments may not claim exemption under either section 7(c) or 7(d).
*Less than 500 man-hours

Note: The proportions may include some premium pay for daily overtime hours.
Source: Surveys conducted by the U. S. Department of Agriculture for WHPC.

Table 8. Percent of total man-hours represented by man-hours in excess of 40 paid for at straight-time rates in the peak week, tenth, fourteenth, and twentieth highest weeks of 1967 or 1968, selected industries

Industry	Percent of total man-hours							
	Total hours worked over 40 per week				Hours over 40 per week worked and paid for at straight-time rates 1/			
	Peak week	10th highest week	14th highest week	20th highest week	Peak week	10th highest week	14th highest week	20th highest week
Industries exempt under section 7(c)								
Tobacco warehousing	10.0	6.5	3.1	2.0	8.1	5.3	2.3	-
Tobacco stemming and redrying	16.1	10.2	5.2	4.4	10.0	4.3	3.2	2.2
Grain storage	34.2	22.1	20.2	17.7	8.4	4.6	4.3	3.9
Sugar beet processing	12.7	8.6	8.0	5.5	4.8	3.7	3.2	0.9
Cotton ginning	42.3	16.5	8.4	6.7	37.0	14.5	5.4	3.6
Cotton storing and compressing	20.7	10.8	9.3	6.2	7.9	4.2	2.8	2.5
Industries exempt under section 7(d)								
Cottonseed processing	20.6	14.9	13.6	11.0	11.9	6.4	6.6	5.2
Milk and cream processing and handling	12.8	9.6	9.6	8.9	3.1	1.9	1.9	1.8
Fluid milk processing	12.4	8.8	8.8	8.4	3.5	2.0	1.8	2.0

See footnote at end of table.

Table 8. Percent of total man-hours represented by man-hours in excess of 40 paid for at straight-time rates in the peak week, tenth, fourteenth, and twentieth highest weeks of 1967 or 1968, selected industries (Concluded)

Industry	Percent of total man-hours							
	Total hours worked over 40 per week				Hours over 40 per week worked and paid for at straight-time rates 1/			
	Peak week	10th highest week	14th highest week	20th highest week	Peak week	10th highest week	14th highest week	20th highest week
Industries exempt under sections 7(c) and 7(d)								
Fresh fruits and vegetables:								
Canning, drying, and other processing, except freezing, of fresh noncitrus fruits and vegetables	21.0	13.1	10.9	6.4	8.6	6.1	4.8	1.8
Freezing of fresh noncitrus fruits and vegetables	18.2	9.3	7.8	6.7	9.7	5.2	3.8	3.5
Processing of fresh citrus fruits	21.5	14.7	14.4	13.5	7.5	3.6	2.6	1.6
Handling of fresh fruits and vegetables	19.9	9.4	8.3	7.4	11.0	5.6	4.8	3.7
Sugar cane processing:								
Florida 2/	31.4	28.7	26.5	14.0	13.7	12.6	9.6	1.8
Puerto Rico 2/	12.8	10.9	10.6	10.8	3.5	3.3	3.0	0.7
Louisiana 3/	50.3	33.5	4.2	3.3	50.0	33.0	1.4	-
Hawaii 4/	14.8	13.5	12.2	10.1	-	-	-	-

1/ These proportions are derived by subtracting from total weekly hours all hours paid for at premium rates. To the extent that daily overtime hours exceeded hours worked in excess of 40, these figures may be understated.

2/ Establishments may claim 20 weeks of exemption; 10 weeks under section 7(c) and 10 weeks under section 7(d).

3/ Establishments may claim 14 weeks of exemption only under section 7(c).

4/ Establishments may not claim exemption under either section 7(c) or 7(d).

Source: Surveys conducted by the U. S. Department of Agriculture for WHPC.

Agricultural Handling and Processing Industries

Table 9. Percent of establishments and nonsupervisory employees covered by collective bargaining agreements, peak week of 1967 or 1968, selected industries

Industry	Number of establishments in operation in peak week	Percent of establishments with Agreements	Percent of establishments with Agreements requiring premium overtime pay	Nonsupervisory employment in peak week (in thousands)	Percent of employees covered by Agreements	Percent of employees covered by Agreements requiring premium overtime pay
Industries exempt under section 7(c)						
Tobacco warehousing	641	-	-	29.5	-	-
Tobacco stemming and redrying	69	13.0	8.7	18.4	17.4	10.3
Grain storage	7,817	3.1	2.8	54.5	9.7	9.5
Sugar beet processing	58	100.0	100.0	21.5	78.6	78.6
Cotton ginning	3,753	-	-	49.5	-	-
Cotton storing and compressing	895	4.4	4.4	17.1	17.5	17.5
Industries exempt under section 7(d)						
Cottonseed processing	132	34.8	22.7	7.2	31.9	26.4
Milk and cream processing and handling	4,936	25.6	22.6	120.3	44.1	40.0
Fluid milk processing	3,135	28.3	24.9	83.6	43.7	40.2

Table 9. Percent of establishments and nonsupervisory employees covered by collective bargaining agreements, peak week of 1967 or 1968, selected industries (Concluded)

Industry	Number of establishments in operation in peak week	Percent of establishments with Agreements	Percent of establishments with Agreements requiring premium overtime pay	Nonsupervisory employment in peak week (in thousands)	Percent of employees covered by Agreements	Percent of employees covered by Agreements requiring premium overtime pay
Industries exempt under sections 7(c) and 7(d)						
Fresh fruits and vegetables:						
Canning, drying, and other processing, except freezing, of fresh noncitrus fruits and vegetables	1,196	22.9	22.2	204.1	38.0	38.0
Freezing of fresh noncitrus fruits and vegetables	196	18.4	15.8	27.0	22.6	21.5
Processing of fresh citrus fruits	65	30.8	24.6	18.1	35.9	32.6
Handling of fresh fruits and vegetables	2,900	7.7	7.1	134.5	6.5	5.7
Sugar cane processing:						
Florida 1/	9	55.6	55.6	1.8	44.4	44.4
Puerto Rico 1/	18	94.4	88.9	5.4	83.3	77.8
Louisiana 2/	43	14.0	14.0	5.0	4.0	4.0
Hawaii 3/	23	100.0	100.0	9.0	98.9	98.9

1/ Establishments may claim 20 weeks of exemption; 10 weeks under section 7(c) and 10 weeks under section 7(d).
2/ Establishments may claim 14 weeks of exemption only under section 7(c).
3/ Establishments may not claim exemption under either section 7(c) or 7(d).

Source: Surveys conducted by the U. S. Department of Agriculture for WHPC.

INDUSTRY ANALYSES

Tobacco Warehousing

Introduction

As defined in applicable seasonal industry determinations, the looseleaf tobacco warehousing industry qualifies for 14 weeks of partial overtime exemption under section 7(c) of the Fair Labor Standards Act. However, even during exempt weeks, employees must be paid not less than one and one-half times their regular rate for all hours in excess of 10 per day or 50 per week.

This report covers establishments in the United States and in the Commonwealth of Puerto Rico primarily engaged in the receiving and auctioning or the receiving and storing of leaf tobacco. The survey disclosed 641 tobacco warehouses employing 29,500 nonsupervisory employees during the peak workweek of each establishment in 1967.

Operations and Technology

About 95 percent of the tobacco grown in the United States is marketed by the looseleaf auction method. The looseleaf auction system as a method of selling first appeared at Richmond, Virginia in 1842. Under this method, growers deliver their tobacco to the auction warehouse of their choice where it is sold to the highest bidder. 1/

There are no delivery contracts between auction warehouse operators and growers to control day-to-day inflow of tobacco. However, marketing dates are usually set by the warehousemen. Once these dates are set, growers deliver their tobacco to the auction warehouse at their convenience. The period of delivery is highly seasonal with the normal activity ranging from 3 to 12 weeks for individual establishments. Weather is an important variable affecting the maturation of the crop, and consequently, the opening date and the duration of the marketing period. Opening dates vary for the different types of tobacco and from region to region. In fact, marketing periods are so staggered that it is possible to find a delivery in progress almost any time during the year. 2/ Auction warehouses also establish closing dates, after which they cease to accept deliveries, but the usual practice is to postpone closing until practically all tobacco has been delivered by farmers.

Tobacco, in its freshly-cured state, as delivered by growers to auction warehouses is perishable. It normally contains more moisture than is desirable and some drying is necessary to prevent leaf decay or deterioration. Auction warehouses have no drying or other facilities to make

1/ U.S. Department of Agriculture, Tobacco in the United States, Miscellaneous publication No. 867, October 1966, p. 28.

2/ Ibid., p. 28.

the raw product less perishable. Therefore, tobacco delivered by growers is usually shipped--after auction--to stemmers and redryers within a matter of 1 or 2 days. 1/

Auction warehouses specialize in handling the specific type of tobacco that is grown in their vicinity. Many tobacco warehouses are rented out for the storage of other agricultural commodities in the off-season, but laborers employed for auction warehousing functions typically do not work on these off-season activities. Also, some merging of warehouse ownership has taken place, enabling warehousemen to employ their management and sales staff for about six months of the year. However, laborers are not shifted from one warehouse to another since warehousemen generally hire local farm labor for unskilled work.

Methods of receiving and handling tobacco in auction warehouses have remained basically unchanged in recent years, except possibly for the introduction of motorized trucks on the warehouse floors. Growers deliver their tobacco in trucks to the warehouse where it is packed on flat baskets furnished by the warehouse. In some warehouses, warehouse employees supervise the packing of the tobacco onto the baskets. After the baskets are weighed and ticketed, they are moved to the auction floor on handtrucks by warehouse employees. 2/

Newly developed processing machinery has created the opportunity for growers and warehousemen to reduce the amount of labor needed to prepare tobacco for market if an efficient method of packing loose leaves can be developed. Modern methods of processing tobacco eliminate the requirement that leaves be tied in bundles for the conveyer sticks. 3/ Consequently, improvements in farm-packing tobacco for market could have important effects on the cost and efficiency of operations in auction warehousing by eliminating the need for packing the tobacco in baskets prior to sale and dumping onto sheets and repacking after sale. 4/

Seasonality of Operation

Critical determinants of seasonality for which data were collected in this survey include length of active operating season, short-term employment trends, and the use of multiple shift operations.

1/ Tobacco in the United States, op. cit., pp. 34 and 38.

2/ Ibid., p. 31.

3/ U.S. Department of Agriculture, Developing and Market Testing an Improved Looseleaf Tobacco Package, ERS No. 189, September 1964, p. 1.

4/ Ibid., pp. 8-9.

Length of active season--During the 1967 operating season, 8.2 million man-hours were used by the 641 warehouses engaged in the receiving, auctioning and storing of looseleaf tobacco in the United States and the Commonwealth of Puerto Rico (Appendix Table A-1). Most of these man-hours were used in a small number of weeks. One-half of the 8.2 million man-hours worked in this industry in 1967 were used in the five most active weeks and three-fourths were used in the ten most active weeks. Nearly nine-tenths of the annual man-hours were used in the 14 most active weeks--the weeks in which tobacco warehouses were most likely to use the overtime exemption available to the industry under section 7(c). The ranking of weeks in descending order of aggregate hours worked showed a rapid decline in man-hours from week to week. Man-hours declined 51 percent between the peak week and the seventh most active week and 74 percent between the seventh and the fourteenth most active week. In the fourteenth week, aggregate hours worked comprised less than 2 percent of total annual man-hours and were only one-eighth as large as in the peak week.

Of the 641 warehouses in the industry in 1967, 138 (22 percent) operated with nonsupervisory employees for eight weeks or less, and 393 (61 percent) operated from 9 to 14 weeks (Appendix Table A-2). Only 48 tobacco warehouses, or 7 percent, operated for 21 or more weeks.

In 95 percent of the warehouses, half of the man-hours used in 1967 were used in eight or fewer weeks. Nearly two-thirds of the warehouses used 75 percent of annual man-hours within eight weeks and all but 5 percent of the warehouses used 75 percent of annual man-hours in 14 or fewer weeks.

Employment trends--Another indication of seasonality of operations is significant variations in the level of employment. Ranking workweeks by man-hours, nonsupervisory employment showed a sharp decline. Between the peak week and the seventh most active week, nonsupervisory employment declined from 29,500 to 16,200 or 45 percent. In the fourteenth most active week, only 4,700 workers were employed and by the twentieth highest week employment had decreased to 1,900. Average nonsupervisory employment per operating establishment declined from 46 in the peak week to 23 in the fourteenth highest week. Average employment in the 50 operating warehouses in the twentieth week was 38.

Workweek	Nonsupervisory employment	
	Total	Average per establishment
Peak week	29,500	46
7th highest week	16,200	28
14th highest week	4,700	23
20th highest week	1,900	38
Lowest week	200	7

Multiple shift operations--The use of multiple shifts, when feasible, permits establishments to utilize their processing facilities more fully, thereby enabling them to reduce the length of individual employee workweeks and occasionally the length of the overall processing period. The operation of a second or third shift can result in substantial savings when premium rates have to be paid for overtime hours. Establishments in the tobacco warehousing industry, however, did not make extensive use of multiple shifts. Of the 641 establishments, only 184, or 29 percent, operated with multiple shifts at some time during the marketing season, generally for no more than 14 weeks (Appendix Table A-3). Single shift establishments predominated even when establishments were classified by the length of the operating season.

Data on nonsupervisory employment and man-hours worked on the first shift provide an indication of the relative importance of multiple shift operations. Even in those establishments which operated more than one shift, most of the nonsupervisory employees and man-hours were worked on the first shift. In the peak workweek, for example, 156 (85 percent) of the 184 multiple shift establishments used 65 percent or more of the man-hours on the first shift (Appendix Table A-4); over three-fourths of the multiple shift establishments employed 65 percent or more of the nonsupervisory employees on the first shift (Appendix Table A-5).

Weekly Man-hours

All establishments--Despite the relatively short operating period for most establishments, it was only in the peak week of 1967 that workweeks beyond 40 hours, the standard applicable to most other industries, accounted for more than half of aggregate weekly hours (Appendix Table A-6). The proportion declined to two-fifths in the seventh week and less than a fifth in the fourteenth highest week.

The "Over 50 hours" category declined from 16 percent of total weekly man-hours in the peak week to 11 percent in the seventh week and to less than 3 percent in the fourteenth week. The "Over 40 and including 50 hours" category also showed a substantial decline after the tenth week--from 31 percent to 16 percent in the fourteenth week.

Selected workweek	Aggregate hours	Percent of hours worked by employees working		
		Over 40 hours	Over 40 and including 50 hours	Over 50 hours
Peak week	1,012,000	52	36	16
7th highest week	495,000	41	30	11
10th highest week	337,000	39	31	7
14th highest week	131,000	19	16	3
20th highest week	51,000	7	6	1

Shift-operation--At least 70 percent of the man-hours in each of the selected weeks for which data were available by shift operation--the peak week, the seventh, tenth and fourteenth highest weeks--were worked in establishments operating single shifts in those weeks (Appendix Table A-7). Thus, variations in the distributions of man-hours in single shift establishments between the selected weeks closely paralleled those for all establishments. This was, for the most part, also true for multiple shift establishments. However, in multiple shift establishments, the proportion of aggregate hours in the "Over 40 and including 50 hours" category went from 30 percent in the tenth week to 36 percent in the fourteenth week. During the same period, the proportion of total man-hours in single shift establishments in the "Over 40 and including 50 hours" category declined from 32 to 12 percent.

Establishment size--Establishments employing 25-99 nonsupervisory employees in the peak week accounted for the largest proportion of total man-hours in 4 of the 5 selected weeks--seven-tenths in the peak week, well over three-fifths in the seventh and tenth weeks and over two-fifths in the fourteenth week (Appendix Table A-9). Most of the remaining man-hours in these weeks were worked in establishments which employed 100 or more nonsupervisory employees in the peak week.

Employees working over 40 hours accounted for somewhat larger proportions of the aggregate man-hours of establishments in the 25-99 employment-size grouping than of all the other size groupings except the 1-7 grouping. In the peak week and fourteenth highest week, for example, workweeks in excess of 40 hours accounted for 56 percent and 30 percent, respectively, of the man-hours in the 25-99 employee-size grouping but only 41 percent and 8 percent, respectively, in the 100 or more employee-size grouping.

Workweeks in excess of 50 hours as well as workweeks of over 40 but not more than 50 hours accounted for a larger proportion of aggregate hours in the 25-99 employee-size group than in the larger employee-size group. Employees with workweeks in excess of 50 hours, for example, accounted for 18 percent of the man-hours in the 25-99 employment-size group in the peak week as compared with 9 percent in the 100 or more employment-size group. By the fourteenth highest week, the "Over 50 hours" category had declined to 5 percent in the 25-99 group and less than 1 percent in the 100 or more group.

Establishment size in peak workweek	Aggregate hours in peak week	Percent of hours worked by employees working		
		Over 40 hours	Over 50 and including 50 hours	Over 50 hours
All establishments	1,012,000	52	36	16
1-7 employees	6,000	62	46	17
8-24 employees	90,000	47	32	16
25-99 employees	715,000	56	37	18
100 or more employees	201,000	41	32	9

Man-hours in Excess of 40 a Week

In all establishments, 101,000 man-hours, or 10 percent of the total, represented hours worked by individual employees in excess of 40 in the peak workweek (Appendix Table 10). Hours in excess of 40--the Fair Labor Standards Act workweek standard for nonexempt workers--declined to 37,000 or 7 percent of weekly man-hours by the seventh week, and to only 4,000 hours, or 3 percent, by the fourteenth highest week. The average number of hours in excess of 40 per employee working over 40 hours a week declined from almost 10 in the peak week to about 9 in seventh week and down to about 8 in the other three selected weeks studied.

As shown below, the proportion of the man-hours over 40 represented by hours worked in excess of the 50-hour standard provided by section 7(c) ranged from a fourth in the peak week to a seventh in the tenth week.

	Man-hours over 40					
	Total		In workweeks over 50 hours		Man-hours over 50	
Selected workweek	Number	Percent	Number	Percent	Number	Percent
Peak week	101,000	100	52,000	51	24,000	24
7th highest week	37,000	100	16,000	43	6,000	16
10th highest week	22,000	100	7,000	32	3,000	14
14th highest week	4,000	100	1,000	25	-	-
20th highest week	1,000	100	*	-	*	-

*Less than 500 man-hours.

Overtime Hours at Premium Rates

Two percent of aggregate man-hours in the peak week were paid for at premium rates of not less than one and one-half times the regular rate (Appendix Table A-12). This proportion was not exceeded in any of the other four selected weeks. In the peak week, all but 5 percent of the 20,000 man-hours paid for at premium rates were worked by employees working over 40 hours. In the other four selected weeks, all premium payments went to employees who worked over 40 hours.

In workweeks of over 40 but not over 50 hours, no more than a tenth of man-hours in excess of 40 were paid for at premium rates in the peak week, seventh and tenth highest weeks. The proportion was a third in the fourteenth week when only 3,000 man-hours were worked in excess of 40. (The proportions may include some premium pay for hours other than those in excess of 40 per week.) These ratios indicate that the industry took advantage of the partial 14-week overtime exemption

currently available under section 7(c), even though relatively few man-hours were involved.

Selected workweek	Man-hours worked in workweeks of over 40 and including 50 hours			
	Total	Over 40 hours	Paid for at premium rates	
			Number	Percent of hours over 40
Peak week	361,000	50,000	3,000	6
7th highest week	150,000	21,000	2,000	10
10th highest week	105,000	15,000	1,000	7
14th highest week	21,000	3,000	1,000	33
20th highest week	3,000	*	*	-

*Less than 500 man-hours.

In workweeks exceeding 50 hours, the proportion of man-hours over 40 paid for at premium rates was less than a third in each of the selected weeks studied. As shown below, man-hours in excess of 50 per week exceeded the man-hours paid for at premium rates in workweeks of over 50 hours. It would appear from the survey data that some establishments may not have been in compliance with the overtime provisions of the Fair Labor Standards Act because the Act requires that premium overtime rates be paid for all hours beyond 50 per week.

Selected workweek	Man-hours worked in workweeks of over 50 hours				
	Total	Over 40 hours	Over 50 hours	Paid for at premium rates	
				Number	Percent of hours over 40
Peak week	164,000	52,000	24,000	16,000	31
7th highest week	54,000	16,000	6,000	4,000	25
10th highest week	25,000	7,000	3,000	2,000	29
14th highest week	3,000	1,000	-	-	-
20th highest week	1,000	*	*	*	-

*Less than 500 man-hours.

Weekly Hours of Work

In the peak week, 64 percent of all nonsupervisory employees worked not more than 40 hours, 26 percent worked over 40 but not more than 50 hours, and 10 percent worked over 50 hours. The proportion of all nonsupervisory employees working not more than the maximum 40-hour workweek standard applicable to nonexempt employees declined as aggregate weekly hours in

the industry declined (Appendix Table A-13). Thus, by the fourteenth week, all but about a tenth of the employee were working 40 hours or less.

Selected workweek	Percent of employees working		
	40 hours or less	Over 40 and including 50 hours	Over 50 hours
Peak week	64	26	10
7th highest week	74	20	6
10th highest week	76	20	4
14th highest week	89	10	1
20th highest week	96	4	1

Relationship Between Daily and Weekly Hours of Work

The proportions of employees working in excess of the 10-hour daily overtime standard in the selected weeks studied were of about the same magnitude as the proportions working in excess of the 50-hour weekly limitation under section 7(c) (Appendix Tables A-14 to A-17). Less than 8 percent of the employees worked over 10 hours at least one day in the peak week, and the proportion dropped to 3 percent in the fourteenth week. By the twentieth most active week, none of the employees worked more than 10 hours a day. A large proportion of the employees worked 8 or fewer hours every day of the week--three-fifths in the peak week and two-thirds or more in each of the other selected weeks.

Over five-sixths of the employees who worked no more than 8 hours a day also worked 40 hours or less in each of the selected weeks studied. Of the employees working more than 10 hours at least one day, almost three-fifths in the peak week but no more than a third in the seventh highest week worked in excess of 50 hours a week. These employees accounted for almost half of all employees working over 50 hours in the peak week and three-tenths in the seventh week.

Collective Bargaining Agreements

The survey disclosed no collective bargaining agreements in the tobacco warehousing industry.

Tobacco Stemming and Redrying

Introduction

Establishments engaged in stemming and redrying leaf tobacco generally qualify for a partial 14-week overtime exemption under section 7(c) of the Fair Labor Standards Act. During exempt weeks, however, employees must be paid not less than one and one-half times their regular rate for all hours in excess of 10 per day or 50 per week.

The survey, conducted for the Divisions by the United States Department of Agriculture, disclosed 69 establishments primarily engaged in the stemming and redrying of leaf tobacco that employed 18,400 nonsupervisory employees during the peak workweek in each establishment in 1967.

Operations and Technology

The tobacco stemming and redrying industry receives most of the tobacco for processing during the seven-month period between August and February. For many stemming and redrying plants, however, the processing season is shorter. 1/ Stemmers and redryers exercise little direct control over the day-to-day inflow of tobacco. Most plants are concentrated in towns where the larger auction markets are located. 2/ Consequently, the sales committees of the various tobacco auction warehouses influence to a degree the volume and timing of deliveries to stemming and redrying plants by varying the selling time and volume of tobacco offered for sale. When tobacco and redrying plants become congested, the selling time, maximum weight and number of baskets offered for sale are reduced. 3/

Virtually all tobacco sold in auction warehouses is shipped immediately to the receiving rooms of stemming and redrying plants. The principal exceptions are in the Kentucky-Tennessee fire-cured areas, where some tobacco is packed with very little or no drying, and in Maryland, where it is in a very dry condition when marketed.

1/ U.S. Department of Agriculture, Tobacco in the United States, Miscellaneous publication No. 867, October 1966, p. 28.

2/ Ibid., p. 38.

3/ U.S. Department of Agriculture, Flue-Cured Tobacco Market Review, 1966 Crop, April 1967, p. 6.

Tobacco that has been delivered to the redrying plant from the auction warehouse remains perishable until redried. In most instances, cured tobacco is redried within a week after delivery. The redrying process involves the complete drying out of the tobacco, and the application of uniform moisture throughout the leaf. Since the stemming process does not affect the perishability of the tobacco, the process may occur before or after redrying. 1/

Stemming before redrying has become the general practice among plants processing tobacco for domestic consumption. The export tobaccos are usually redried and exported unstemmed. When stemming does precede redrying, the two processes are part of a continuous operation. Since unstemmed, but redried, tobacco is not perishable, stemming may occur several years after the redrying process.

Tobacco stemming and redrying plants have highly specialized equipment which is not adaptable to other commodities. Accordingly, with few exceptions, tobacco stemming and redrying plants do not engage in other activities during the off-season.

In recent years, the stemming and redrying industry has experienced rapid technological advancements. 2/ However, these advancements have contributed little to the lessening of seasonality in employment. Labor requirements, on the other hand, have been greatly affected by these developments. For example, most of the hand stemmers have been displaced by stemming machines, and the stemming machines, in turn, have been practically supplanted by threshing machines. The use of threshing machines has eliminated the need for pickers and stemming machine feeders. Also, the redrying operation for both stemmed and unstemmed tobacco has been highly mechanized. 3/

Seasonality of Operation

Critical determinants of seasonality for which data were collected in this survey include length of active operating season, short-term employment trends, and use of multiple shift operations.

1/ Tobacco in the United States, op. cit., p. 38.

2/ U. S. Department of Agriculture, Developing and Market Testing An Improved Looseleaf Tobacco Package, Economic Research Bulletin 189, September 1964, p. 1.

3/ Tobacco in the United States, op. cit., pp. 38-41.

Length of active season--In 1967, establishments engaged in the stemming and redrying of tobacco used a total of 10 million man-hours (Appendix Table B-1). Nearly half of these man-hours were used in the seven most active weeks as measured by weekly man-hours and over three-fourths were used in the 14 most active weeks--the weeks in which establishments were most likely to utilize the exemption available to this industry under section 7(c). Man-hours declined gradually from week to week in the seven most active weeks when all weeks were arrayed in descending order of aggregate man-hours. The rate of decline was greater between the seventh and fourteenth weeks. Thus, man-hours declined 28 percent between the peak week and the seventh most active week, 57 percent between the seventh and fourteenth weeks and 64 percent between the fourteenth and twentieth weeks.

Of the 69 tobacco stemming and redrying establishments in operation during 1967, 44, or 64 percent, operated with some nonsupervisory employees in all 52 weeks of the year. However, as indicated above, most of the man-hours were used in a small number of weeks. Nearly two-thirds of the establishments in the industry used 50 percent of their annual man-hours in eight weeks or less and an additional one-fourth of the establishments accounted for half of their annual man-hours in 9 to 14 weeks (Appendix Table B-2). Nearly three-fourths of the establishments used 75 percent of their annual man-hours in 14 or fewer weeks.

Employment trends--Another indication of seasonality in an industry is significant changes in the level of employment. In the tobacco stemming and redrying industry, nonsupervisory employment in workweeks ranked by man-hours showed an almost continuous decline. Between the peak week and fourteenth week, nonsupervisory employment declined from 18,400 to 8,000, or 57 percent. Nonsupervisory employment declined to 3,300 by the twentieth highest week and to 900 in the lowest week of the year. Average nonsupervisory employment per operating establishment declined from 267 employees in the peak week to 20 in the lowest week.

Workweek	Nonsupervisory employment- Total	Average per establishment
Peak week	18,400	267
7th highest week	14,600	212
14th highest week	8,000	125
20th highest week	3,300	63
Lowest week	900	20

Multiple shift operations--The use of multiple shifts, when feasible, permits establishments to limit the length of individual employee workweeks during peak periods without reducing processing output. This can result in substantial savings when premium rates are required to be paid

for overtime hours. In the tobacco stemming and redrying industry, 30 of the 69 establishments operated with multiple shifts at some time during the year (Appendix Table B-3). None of the 30 establishments operated with two or more shifts for as many as 20 weeks, and 21 operated with multiple shifts for 14 weeks or less.

The importance of additional shifts in an industry may be evaluated in terms of the relative proportion of nonsupervisory employees and man-hours worked on the first shift. During the selected weeks for which separate data were collected--the peak week, the seventh, tenth, fourteenth and twentieth most active weeks--very few establishments operating with multiple shifts used less than half of total man-hours on the first shift (Appendix Table B-4). In three-fifths or more of the multiple shift establishments, at least 65 percent of weekly man-hours were worked on the first shift during each of the selected weeks up to the fourteenth most active week. In the fourteenth week, two-fifths of the multiple shift establishments used 65 percent of man-hours on the first shift. A similar relationship prevailed, but to a lesser extent, with respect to nonsupervisory employment on the first shift (Appendix Table B-5).

Aggregate hours worked on shifts other than the first shift accounted for about a fourth of the total industry man-hours in three of the selected weeks and a fifth in the fourteenth week.

	Aggregate hours worked on shifts other than the first shift	
Selected workweek	Number	Percent of industry man-hours
Peak week	203,000	25
7th highest week	349,000	26
10th highest week	110,000	23
14th highest week	47,000	19
20th highest week	-	-

Weekly Man-hours

All establishments--Since over three-fourths of the annual man-hours in 1967 were used in the 14 most active weeks, it was not surprising that workweeks in excess of 40 hours accounted for a large proportion of total man-hours during the selected weeks for which separate data were collected. Employees working over 40 hours accounted for 75 percent of total man-hours in the peak week, 66 percent in the seventh week and 47 percent in the fourteenth week before declining to 27 percent in the twentieth most active week (Appendix Table B-6).

A significant change in the distribution of man-hours by weekly hours occurred in the "Over 50 hours" category which declined from 36 percent of total man-hours in the peak week to 12 percent in the fourteenth week. During the same period, the "Over 40 and including 50 hours" category showed only a slight decline--from 39 percent of total man-hours in the peak week to 35 percent in the fourteenth most active week, but dropped to 18 percent in the twentieth week.

Selected workweek	Aggregate hours	Percent of hours worked by employees working		
		Over 40 hours	Over 40 and including 50 hours	Over 50 hours
Peak week	809,000	75	39	36
7th highest week	581,000	66	41	25
10th highest week	469,000	61	38	23
14th highest week	252,000	47	35	12
20th highest week	91,000	27	18	9

Shift operation--At least three-fourths of the man-hours in the peak week, seventh and tenth most active weeks, and over half in the fourteenth week were worked in establishments operating multiple shifts in those weeks (Appendix Table B-7). None of the establishments operated with multiple shifts in the twentieth week.

In this industry, multiple shift operations did not lessen the importance of long workweeks. Employees working in excess of 40 hours accounted for a larger proportion of man-hours in establishments operating with multiple shifts than in single shift establishments. In single shift establishments, employee workweeks in excess of 40 hours accounted for 69 percent of the man-hours in the peak week and 27 percent in the fourteenth week. In establishments operating with multiple shifts, the "Over 40 hours" categories accounted for 77 percent of the man-hours in the peak week and 64 percent in the fourteenth week.

Establishment size--Establishments employing 250 or more nonsupervisory workers in the peak week accounted for nearly three-fourths or more of total man-hours in each of the selected workweeks (Appendix Table B-9). Most of the remaining man-hours were used by establishments which employed 100-249 nonsupervisory employees.

Employees working more than 40 hours a week accounted for a substantial portion of total man-hours in establishments with 100 or more employees--three-fourths in the peak week. Even in the fourteenth week, employees with workweeks in excess of 40 hours accounted for over half of total man-hours in the 250 or more employment-size group and a fourth in the 100-249 employee-size group.

Workweeks in excess of 50 hours as well as workweeks of more than 40 but not more than 50 hours accounted for a significant proportion of total man-hours over a longer period in the 250 or more employment-size group than in the 100-249 employment-size group. Although the "Over 50 hours" category declined in importance in both large employment-size groupings as aggregate hours decreased, this category still accounted for 14 percent of total man-hours in the 250 or more employment-size group and 7 percent in the 100-249 size group in the fourteenth week.

Man-hours in Excess of 40 a Week

In all establishments, 130,000 man-hours, or 16 percent of the total, represented hours over 40 worked by individual employees in the peak workweek (Appendix Table B-10). By the fourteenth week, total hours worked beyond 40 per week dropped to 13,000, or 5 percent. The average number of hours in excess of 40 per employee working over 40 hours ranged from 10.9 hours in the peak week to 4.9 hours in the fourteenth week.

Over three-fifths of the man-hours in excess of 40 worked in each of the selected workweeks through the fourteenth most active week were worked by employees who worked over 50 hours (Appendix Table B-11). Although the 14-week overtime exemption under section 7(c) is limited to 50 hours a week, hours worked in excess of 50 per week accounted for a significant proportion of the man-hours beyond 40 per week (the FLSA workweek standard for nonexempt workers)--a third in the peak week, nearly two-fifths in the seventh week, and a seventh in the fourteenth week.

	Man-hours over 40					
	Total		In workweeks over 50 hours		Man-hours over 50	
Selected workweek	Number	Percent	Number	Percent	Number	Percent
Peak week	130,000	100	92,000	71	41,000	32
7th highest week	77,000	100	52,000	68	29,000	38
10th highest week	48,000	100	31,000	65	12,000	25
14th highest week	13,000	100	8,000	62	2,000	15
20th highest week	4,000	100	2,000	50	1,000	25

Overtime Hours at Premium Rates

Six percent of the aggregate man-hours worked in the industry in the peak week were paid for at premium rates of not less than one and one-half times the regular rate (Appendix Table B-12). The proportion was about the same in the seventh and tenth most active weeks and declined to 2 percent in the fourteenth and twentieth weeks. In the peak week, all but 4 percent of the 51,000 man-hours paid for at premium rates were worked by employees who worked over 40 hours. In the fourteenth and twentieth weeks, all premium

pay overtime hours were worked by employees working over 40 hours. Premium pay for employees working 40 hours or less may have been due to provisions for daily overtime in union contracts.

In workweeks of more than 40 hours up to and including 50 hours, the proportion of man-hours over 40 paid for at premium rates during the 14 most active weeks ranged from over a fourth in the peak week to almost a half in the tenth week (the proportions may include some premium pay for hours other than those in excess of 40 per week). These ratios are relatively large considering the fact that establishments are most likely to use the 14 week overtime exemption during the peak 14 weeks. Apparently, some establishments did not take full advantage of the partial overtime exemption available to this industry under section 7(c).

	Man-hours worked in workweeks of over 40 and including 50 hours			
			Paid for at premium rates	
Selected workweek	Total	Over 40 hours	Number	Percent of hours over 40
Peak week	315,000	38,000	10,000	26
7th highest week	238,000	25,000	8,000	32
10th highest week	179,000	17,000	8,000	47
14th highest week	89,000	5,000	2,000	40
20th highest week	17,000	1,000	1,000	100

In workweeks of over 50 hours, the proportion of man-hours in excess of 40 paid for at premium rates increased from 41 percent in the peak week to 65 percent in the tenth week, and declined to 38 percent in the fourteenth week. Since the overtime exemption is limited to 50 hours a week, all hours worked in excess of 50 are required to be compensated at rates of not less than one and one-half times the regular rate. This appeared to be the case in all workweeks except the peak week and seventh week. The existence of straight-time weekly hours in excess of 50 in these weeks may be attributable to noncompliance with the provisions of the FLSA.

	Man-hours worked in workweeks of over 50 hours				
				Paid for at premium rates	
Selected workweek	Total	Over 40 hours	Over 50 hours	Number	Percent of hours over 40
Peak week	294,000	92,000	41,000	38,000	41
7th highest week	145,000	52,000	29,000	23,000	44
10th highest week	108,000	31,000	12,000	20,000	65
14th highest week	31,000	8,000	2,000	3,000	38
20th highest week	8,000	2,000	1,000	1,000	50

Weekly Hours of Work

In the peak workweek, 35 percent of all nonsupervisory employees worked 40 hours or less, 38 percent worked over 40 but not more than 50 hours and 27 percent worked over 50 hours. Variations in the distribution of employees by weekly hours of work generally paralleled the pattern noted for aggregate hours, with workweeks in excess of 50 hours declining in importance. By the fourteenth week, for example, only 7 percent of the employees were working over 50 hours and two-thirds were working 40 hours or less.

Selected workweek	Percent of employees working		
	40 hours or less	Over 40 and including 50 hours	Over 50 hours
Peak week	35	38	27
7th highest week	48	36	16
10th highest week	54	31	15
14th highest week	67	26	7
20th highest week	84	12	4

Relationship Between Daily and Weekly Hours of Work

The proportion of employees working in excess of the 10-hour daily overtime standard was, generally, substantially larger than the proportion working in excess of the 50-hour weekly limitation under section 7(c). Slightly over two-fifths of the employees worked over 10 hours at least one day in the peak week and a fifth or more of the employees worked long days in the seventh, tenth, and fourteenth weeks (Appendix Tables B-14 to B-17). In each of the selected weeks, however, a significant proportion of the employees worked eight hours or less every day of the workweek--ranging from a fifth in the peak week to three-fifths in the twentieth week.

Selected workweek	Percent of nonsupervisory employees working				
	8 or fewer hours every day	Over 8 at least one day but never over 10	Over 10 hours at least one day	Over 50 hours a week	
				Total	Over 10 hours at least one day
Peak week	19	40	41	27	22
7th highest week	29	41	29	16	12
10th highest week	35	39	26	15	11
14th highest week	47	32	21	7	5
20th highest week	60	34	6	4	2

With the exception of the peak week, less than half of the employees who worked over 10 hours at least one day also worked in excess of 50 hours in the same week. However, employees who worked over 10 hours at least one day accounted for the vast majority of employees working over 50 hours in each of the selected weeks up to the fourteenth most active week--ranging from nearly four-fifths in the peak week to two-thirds in the fourteenth most active week.

Collective Bargaining Agreements

Data collected on the extent of coverage under collective bargaining agreements revealed that only 9 of the 69 establishments in the tobacco stemming and redrying industry were covered by collective bargaining agreements (Appendix Table 0-1). The nine establishments employed 5,100 nonsupervisory workers in the peak week of 1967, of whom 3,200 were covered by the union agreements. The contracts in all nine establishments covered plant workers, and in six, maintenance workers as well (Appendix Table 0-2). Of the 3,200 covered workers, only 800 were employed in establishments where the agreements provided for premium overtime pay for hours over 40 a week and eight a day (Appendix Table B-18). About 1,300 employees, or two-fifths of the unionized employees, were employed in three establishments in which the collective bargaining agreement did not provide for premium pay for overtime hours.

Collective bargaining agreements generally provide for overtime pay after standard weekly and/or daily hours. Three of the six tobacco stemming and redrying agreements with premium overtime pay provisions contained a waiver of premium pay for a certain number of weeks (Appendix Table B-19). The waiver applied to 1,600 covered workers and the waiver period ranged from 8 to 14 weeks.

Grain Storage

Introduction

For survey purposes, the industry included country grain elevators, public terminal and subterminal grain elevators, wheat flour mill elevators, non-elevator type bulk storage establishments and flat warehouses primarily engaged in the receiving, storing and loading of grain and having a storage capacity of 50,000 bushels or more. Grain storage activities operated by establishments with storage capacities below 50,000 bushels or establishments not primarily engaged in grain storage, such as a brewery or flour mill, were not within the scope of the survey.

The survey conducted for the Divisions by the U. S. Department of Agriculture disclosed 7,817 grain storage establishments employing 54,500 workers during the peak week of the processing season in each establishment in 1967. Establishments in this industry may qualify for a limited 14-week overtime exemption under section 7(c) of the Fair Labor Standards Act. During exempt weeks, hours worked beyond 50 in a week or 10 per day must be compensated at a rate of not less than one and one-half times the regular rate of pay. In addition, section 13(b)(14) provides a year-round unlimited overtime exemption from the 40 hours standard of the Act for--

> any employee employed within the area of production (as defined by the Secretary) by an establishment commonly recognized as a country elevator, including such an establishment which sells products and services used in the operation of a farm, if no more than five employees are employed in the establishment in such operations; . . .

The year-round unlimited exemption under section 13(b)(14) applies on an establishment basis. Its application is determined by the character and location of the grain elevator and the number of workers employed. When applicable, the exemption applies to all of the establishment's employees regardless of the type of work they do.

Operations and Technology

Elevator operators, especially those receiving grain directly from farmers, have little or no control over raw product delivery. Since grain is usually delivered immediately after harvesting, weather conditions, yields, and maturity dates are the primary factors controlling deliveries. For terminal elevators, which do not receive grain directly from farmers,

the effect of harvesting operations is less pronounced as there is a continuous if not a very regular inflow of grain throughout the year from country elevators. 1/

Commodity diversification and farm storage are factors affecting the inflow of grain to elevators. In areas where a variety of grains are produced with different maturity dates and harvesting periods, the receipt of grain is spaced out over longer periods. Conversely, in areas such as Kansas and Texas which have little or no commodity diversification, the grain is received within relatively short periods. Farm storage, which helps alleviate heavy inflows and allows for a more even rate of receipt, has increased in recent years. For example, the proportion of stored wheat held on farms was 30.3 percent on January 1, 1966 (405.3 million bushels); 38.9 percent on January 1, 1967 (408.5 million bushels); and 41.7 percent on January 1, 1968 (504.5 million bushels). 2/

Aeration and drying facilities also help alleviate somewhat the intensity of operations during the harvesting period by permitting some staggering or spacing out of harvest periods within an area. When these facilities are available, harvesting can commence before the grain has reached the minimum moisture content required for safe storage. Many elevator operators use aeration for holding undried grain before moving it through the dryer and storing it. Undried and unstored grain may be held for a couple of weeks without loss of quality with an aeration system. 3/ This permits the elevator operator to put the dryer on a regular schedule and dryer operators on regular shifts.

Country elevators often perform retail activities in addition to buying and shipping grain. These sideline retail activities, which include the selling of farm supplies such as feed, seed, fertilizer, oil, grease, salt, lumber, and other similar items to farmers, sustain many elevator operators during the off-season.

Grain storage operations have undergone few changes in recent years. The most pronounced change has been in transportation. In the past, grain was usually shipped by rail because of the availability of rail transit privileges and elevator facilities were primarily designed for receiving and shipping grain by rail. In recent years, however, the percent of grain shipped by truck and barge has increased due largely to improved roads and waterways, shortages of rail cars, and relatively higher

1/ Trends and Prospective Developments in Grain Elevator Operations, Montana Agricultural Experiment Station, Montana State College, April 1965, p. 17.

2/ U.S. Department of Agriculture, Stocks of Grains in All Positions, various issues.

3/ U.S. Department of Agriculture, Operating Grain Aeration Systems in the Hard Winter Wheat Area, MRR #480, November 1961, p. 1.

rail rates. 1/ Recent technological developments, although not major, may affect man-hour requirements in the grain storage industry. For example, a moisture indicator has been developed which reveals the moisture changes in the flow of materials and can separate materials by moisture content. It can be used for fully automatic control of moisture or in blending materials by moisture content. 2/ As another example, mechanical sampling is beginning to replace probe sampling; it provides a more representative sample and is faster and more dependable than probe sampling. 3/

Seasonality of Operation

Measurements or indicators of seasonality for which data were collected in this survey include length of active operating season, short-term employment trends and use of multiple shifts.

Length of active season--When the 52 workweeks of 1967 were ranked in descending order of aggregate weekly hours, the peak week accounted for 3.5 percent of the 89 million man-hours used in 1967 compared to 1.2 percent in the lowest week (Appendix Table C-1). Half of the annual man-hours were used in the 21 most active weeks, or two-fifths of the year, and three-fourths were used in the 36 most active weeks, or seven-tenths of the year. In the 14 weeks of highest activity--the weeks in which the establishments were most likely to utilize the exemption available to them under section 7(c)--36 percent of the annual man-hours were used.

Three-fourths of the 7,817 grain storage establishments employed nonsupervisory employees in all 52 workweeks of 1967. The number of most active weeks accounting for 50 percent of annual man-hours was 14 or less in a fifth of the establishments, 15-20 weeks in another fifth and 21-28 weeks in the remaining establishments (Appendix Table C-2). In all but a fifth of the establishments, 29 or more weeks were required to use 75 percent of the annual man-hours.

Employment trends--Employment in the grain storage industry showed an almost continuous decline when workweeks were ranked in descending order by aggregate weekly hours. Between the peak week and fourteenth highest week, nonsupervisory employment declined from 54,500 to 39,300 or 28 percent. Nonsupervisory employment was down to 36,300 in the twentieth highest week and 26,600 in the lowest week of 1967. Average nonsupervisory employment per

1/ U.S. Department of Agriculture, Changes in Transportation Used by Country Grain Elevators, MRR #724, July 1965, pp. 3 and 4.

2/ "New Products," Northwestern Miller, May 1968, p. 47.

3/ Ken Wakershauser, "Elevator Men, Superintendents Foresee Sweeping Changes in Their Industry," Northwestern Miller, June 1968, p. 10.

operating establishment declined from seven employees in the peak week to four employees in the lowest week.

Workweek	Nonsupervisory employment	
	Total	Average per establishment
Peak week	54,500	7
7th highest week	44,800	6
14th highest week	39,300	5
20th highest week	36,800	5
Lowest week	26,600	4

Multiple shift operations--The use of multiple shifts was very limited in the grain storage industry. Only 7 percent of the establishments operated with more than one shift and most of these used multiple shifts for no more than eight weeks (Appendix Table C-3). None of the 542 1/ establishments, which had multiple shifts at some time during the year, operated with nonsupervisory employees for less than 14 weeks and all but five employed workers for 29 weeks or more.

Even in the relatively few establishments with multiple shift operations, the first shift generally accounted for most of the man-hours. In the peak week, for example, over three-fifths of the establishments operating multiple shifts had 65 percent or more of the aggregate hours worked on the first shift (Appendix Table C-4). Of total man-hours worked in all multiple shift establishments, over three-fifths were employed on the first shift in each of the selected workweeks for which separate data were collected--the peak week, the seventh, tenth, fourteenth, and twentieth highest weeks (Appendix Table C-7).

Weekly Man-hours

All establishments--During the peak workweek of 1967, nine-tenths of the aggregate hours were accounted for by employees working over 40 hours (Appendix Table C-6). The proportion of man-hours worked by such employees declined gradually to 85 percent in the seventh week and to 80 percent by the twentieth week. There were, however, substantial declines in the

1/ Ten of these establishments did not operate multiple shifts during the peak week of their operations (see Appendix Tables C-7 and C-3).

proportion of man-hours worked in workweeks of over 50 hours--from 74 percent in the peak week to 59 percent in the seventh highest and 42 percent in the twentieth week.

Selected workweek	Aggregate hours	Percent of hours worked by employees working: Over 40 hours	Over 40 and including 50 hours	Over 50 hours
Peak week	3,137,000	90	16	74
7th highest week	2,218,000	85	26	59
10th highest week	2,023,000	84	31	54
14th highest week	1,851,000	82	32	50
20th highest week	1,679,000	80	38	42

Shift operation--Establishments operating multiple shifts in the selected weeks studied accounted for only a fifth of the total man-hours in the peak week and the proportion declined to a tenth in the twentieth week. In multiple shift establishments, the proportion of aggregate hours worked by employees working over 40 hours was smaller than in establishments operating only one shift--87 percent compared with 90 percent in the peak week, and 66 percent compared with 80 percent in the twentieth week.

Establishment size--The distribution of aggregate hours by establishment-employment size was fairly constant during the five selected weeks. Establishments employing 8-24 workers in the peak week accounted for over two-fifths of the total man-hours in each of the selected weeks (Appendix Table C-9). Establishments with 1-7 employees in the peak week, next in importance, accounted for just under two-fifths of the total man-hours in each of the selected weeks. In these two employment-size groupings, the distribution of man-hours by weekly hours did not differ significantly from that noted for all establishments. In the 25-99 employee-size grouping, which accounted for about a seventh of the total man-hours in each of the selected weeks, the proportion of man-hours in workweeks of 40 hours or less for each of the selected weeks was somewhat larger than in establishments with less than 25 employees.

Establishment size in peak workweek	Aggregate hours in peak week	Percent of hours worked by employees working: Over 40 hours	Over 40 and including 50 hours	Over 50 hours
All establishments	3,137,000	90	16	74
1-7 employees	1,192,000	90	16	74
8-24 employees	1,354,000	90	14	76
25-99 employees	485,000	88	20	68
100 or more employees	106,000	90	24	66

Man-hours in Excess of 40 a Week

In the peak week, about 1.1 million man-hours, or a third of the total, represented hours worked beyond 40 by individual employees (Appendix Table C-10). Man-hours in excess of 40 per week declined to 542,000, or a fourth of aggregate hours worked in the seventh highest week, and to 374,000 and 298,000 or about a fifth, in the fourteenth and twentieth weeks. Average hours in excess of 40 a week per employee working over 40 hours declined from 25 in the peak week to 13 and 11 hours in the fourteenth and twentieth weeks, respectively.

Most of the aggregate hours in excess of 40 a week were worked by employees working beyond the 50-hour limitation provided in section 7(c)--93 percent in the peak week and 78 percent in the fourteenth week (Appendix Table C-11). The number of hours these employees worked in excess of 50 accounted for over three-fifths of the man-hours over 40 worked in the peak week and over a third of such hours in the fourteenth week.

	Man-hours over 40					
	Total		In workweeks over 50 hours		Man-hours over 50	
Selected workweek	Number	Percent	Number	Percent	Number	Percent
Peak week	1,073,000	100	997,000	93	669,000	62
7th highest week	542,000	100	460,000	85	248,000	46
10th highest week	448,000	100	361,000	81	179,000	40
14th highest week	374,000	100	292,000	78	135,000	36
20th highest week	298,000	100	211,000	71	87,000	29

Overtime Hours at Premium Rates

Aggregate hours worked in excess of 40 a week do not provide an accurate gauge of the need for the overtime exemptions applicable to the grain storage industry due to the fact that most of these hours were paid for at premium rates of not less than one and one-half times the regular rate (Appendix Table C-12). As shown below, hours paid for at premium rates in workweeks of more than 40 hours accounted for at least three-fourths of the man-hours over 40 in each of the selected weeks studied. (The proportions may include some premium pay for hours other than those in excess of 40 per week.)

	Man-hours worked in workweeks of over 40 hours			
			Paid for at premium rates	
Selected workweek	Total	Over 40 hours	Number	Percent of hours over 40
Peak week	2,808,000	1,073,000	811,000	76
7th highest week	1,885,000	542,000	424,000	78
10th highest week	1,706,000	448,000	351,000	79
14th highest week	1,519,000	374,000	295,000	79
20th highest week	1,337,000	298,000	232,000	78

In workweeks of over 40 but not over 50 hours, the proportions of man-hours in excess of 40 paid for at premium rates ranged from two-thirds in the peak week to over three-fourths in the fourteenth week. These ratios indicate that many establishments were not taking advantage of the overtime exemptions available to them under section 13(b)(14) or section 7(c) during the most active weeks.

Selected workweek	Man-hours worked in workweeks of over 40 and including 50 hours			
	Total	Over 40 hours	Paid for at premium rates	
			Number	Percent of hours over 40
Peak week	498,000	76,000	51,000	67
7th highest week	578,000	83,000	60,000	72
10th highest week	617,000	86,000	63,000	73
14th highest week	599,000	82,000	63,000	77
20th highest week	632,000	87,000	63,000	72

Although the partial overtime exemption under section 7(c) is limited to 50 hours a week, country elevators with no more than five employees qualify for a year-round overtime exemption under section 13(b)(14), providing the area of production requirements are met. Consequently, the existence of straight-time pay for hours over 50 may be attributable to this year-round exemption. In workweeks of over 50 hours, however, the number of hours paid for at premium rates was substantially greater than the number of hours worked in excess of 50--14 percent greater in the peak week and 72 percent greater in the fourteenth highest week. The difference, of course, reflects the payment of daily premium pay or premium pay for hours between 40 and 50 in workweeks of over 50 hours.

Selected workweek	Man-hours worked in workweeks of over 50 hours				
	Total	Over 40 hours	Over 50 hours	Paid for at premium rates	
				Number	Percent of hours over 40
Peak workweek	2,311,000	997,000	669,000	760,000	76
7th highest week	1,307,000	460,000	248,000	364,000	79
10th highest week	1,089,000	361,000	179,000	291,000	81
14th highest week	921,000	292,000	135,000	232,000	79
20th highest week	705,000	211,000	87,000	169,000	80

Weekly Hours of Work

Long workweeks predominate in this industry. Three-fifths of the employees worked over 50 hours in the peak week and a fifth worked over 40 but not more than 50 hours (Appendix Table C-13). Although workweeks of over 50 hours declined in importance as weekly man-hours decreased, two-fifths of

the employees were still working over 50 hours in the fourteenth highest week and only a fourth were working 40 hours or less.

Selected workweek	Percent of employees working		
	40 hours or less	Over 40 and including 50 hours	Over 50 hours
Peak week	20	19	60
7th highest week	25	28	47
10th highest week	25	32	43
14th highest week	27	33	40
20th highest week	29	37	34

Relationship Between Daily and Weekly Hours of Work

Just over half of the employees worked in excess of 10 hours, the daily overtime standard under section 7(c), at least one day in the peak week. In contrast, about a fourth of the employees worked no more than eight hours every day of the week (Appendix Tables C-14 and C-15). By the fourteenth most active week, the proportion of employees working long daily hours had declined to a fourth and a third worked eight hours or less each day.

Selected workweek	Percent of nonsupervisory employees working				
	8 or fewer hours every day	Over 8 at least one day but never over 10	Over 10 hours at least one day	Over 50 hours a week	
				Total	Over 10 hours at least one day
Peak week	23	25	52	60	47
7th highest week	29	35	36	47	30
10th highest week	30	40	30	43	26
14th highest week	33	43	24	40	20
20th highest week	36	43	21	34	16

The vast majority of employees working more than the 10-hour daily overtime limitation also worked over 50 hours a week--91 percent in the peak week and 82 percent in the fourteenth highest week. These employees comprised the majority of employees working over 50 hours a week--79 percent in the peak week and 50 percent in the fourteenth highest week (Appendix Tables C-16 and C-17). Employees working eight or fewer hours every day accounted for a small fraction of the employees working over 50 hours, but they accounted for well over 80 percent of the employees working less than 40 hours in each of the selected weeks studied.

Collective Bargaining Agreements

Only 246 of the 7,817 grain storage establishments had collective bargaining agreements in 1967 (Appendix Tables C-1 and C-2). The 248 union contracts in these establishments covered 5,300 employees, or about a tenth of the workers in the industry in the peak week of 1967 (Appendix Table C-18).

All but one of the contracts covered plant workers and about a third included maintenance workers. The contract provisions for virtually all of the organized workers require premium overtime pay, generally for hours after 40 a week and eight a day. None of the contracts requiring premium overtime pay in a total of 221 establishments contained a waiver of such provisions (Appendix Table C-19).

Sugar Beet Processing

Introduction

The sugar beet industry includes the receiving and transporting of sugar beets; the production of sugar from sugar beets; the extraction of sugar from sugar-beet molasses; the powdering of sugar; the compressing and artificial drying of wet beet pulp; and the weighing, handling, packaging, bagging and storing of wet beet pulp, dried beet pulp, and molasses.

The survey conducted for the Divisions by the U.S. Department of Agriculture disclosed 58 sugar beet processing establishments employing 21,500 nonsupervisory workers during the peak workweek in each establishment in 1967.

Section 13(b)(15) of the Fair Labor Standards Act provides a year-round unlimited exemption from the maximum hours provisions of the Act for--

> any employee engaged . . . in the processing of sugar beets, sugar-beet molasses, . . . into sugar (other than refined sugar) or syrup; . . .

Sugar beet processors may also qualify for the partial overtime exemption under section 7(c) of the Fair Labor Standards Act. During exempt weeks under this exemption, employees who do not qualify for the year-round unlimited exemption must be paid at not less than one and one-half times their regular rate of pay for all hours in excess of 10 per day or 50 per week.

The unlimited year-round exemption under section 13(b)(15) is applicable only to employees engaged in the processing operations named in the exemption. The limited overtime exemption under section 7(c), on the other hand, applies on an establishment basis, and when applicable, may be claimed for all employees, including office, clerical and general maintenance workers, exclusively engaged in the operations specified in the industry determination.

Operations and Technology

Sugar beet processing is performed in 18 States and generally lasts about 120 days. 1/ The length of the processing season depends upon (1) the availability of sugar beets, (2) the yield, (3) the weather and (4) purchase contracts. Sugar beets are grown in 20 States with the leaders

1/ U.S. Department of Agriculture, Sugar Reports, No. 183, August 1967, pp. 17-18.

being California, Colorado and Idaho. 1/ Depending upon the geographic area, deliveries of sugar beets to processing plants can commence as early as mid-April; however, in most areas harvesting begins the first of August or as late as mid-October. 2/

Nearly all sugar beets are grown by independent farmers under purchase contracts. These contracts generally specify, among other stipulations, the acreage of beets to be grown, time of planting, and time of delivery. Grower-processor contracts provide some processor control over the rate of inflow of raw products, but are essentially a device for procuring an adequate volume of deliveries for full capacity operations.

Although sugar beets are somewhat perishable, storage prior to processing is feasible for limited time periods. During the harvest season, beets which cannot be processed immediately are stored in piles. They may be kept this way for several weeks unless they are injured by freezing and thawing. Forced ventilation and spraying of stockpiles permit a longer period of storage with only minor sucrose losses. However, sugar recovery is usually poorer from stored or frozen beets than from fresh beets. 3/

Processors try to lessen the seasonality of operations by (1) scheduling deliveries as soon as the sugar content is barely adequate for processing (the sucrose content of the beet increases as the season progresses), and (2) storing beets in piles for processing after the completion of harvests. Also, the processing of beet by-products and products produced from crystalline beet sugar such as liquid and powdered sugar extend the processing season beyond the period during which beets are received.

Mechanical harvesting tends to intensify the seasonality of operations since deliveries are concentrated over a shorter period. The effectiveness of mechanical harvesting has been furthered by the monogerm seed which lessens thinning operations and allows for more precise planting. 4/ This precision planting achieves uniform spacing of plants which speeds up mechanical harvesting operations.

Experiments are currently being conducted with chemicals that could increase the yield, sugar content, or the growth process of the

1/ Jeanne Kuebler, "Sugar Prices and Supplies," Editorial Research Reports, Vol. II, August 7, 1963.

2/ U.S. Department of Labor, Crops Requiring Seasonal Hired Workers, BES, Farm Labor Service.

3/ "Compositional Changes in Diffusion Juices from Stored Beets," Sugar Azucar Yearbook-1962, Vol. XXX, p. 76.

4/ U.S. Department of Labor, Technological Changes in Sugar Beet Cultivation: Effect on Seasonal Hired Labor, BES, April 1963, p. 7.

sugar beet. 1/ The latter is especially significant because it would enable the beet sugar industry to lengthen the processing season.

Seasonality of Operation

Critical determinants of seasonality for which data were collected in this survey include length of active operating season, short-term employment trends, and use of multiple shift operations in order to minimize the frequency and cost of long workdays and/or workweeks.

Length of active season--In 1967, 20.6 million man-hours were used in processing sugar beets. Fifty percent of these man-hours were used in the 14 most active weeks ranked in order of man-hours used, and 75 percent were used in the 26 most active weeks (Appendix Table D-1). There were noticeable variations in the rate of decline in weekly man-hours during the 20 weeks of highest activity. For example, man-hours declined 19 percent between the peak week and the seventh highest week, 14 percent between the seventh and the fourteenth highest weeks, and 47 percent between the fourteenth and twentieth highest weeks.

All of the 58 sugar beet processing establishments employed nonsupervisory employees during each week of 1967. However, three-fourths of the establishments used 50 percent of annual man-hours in 14 weeks or less and the remaining fourth used 50 percent of annual man-hours in 15 to 20 weeks (Appendix Table D-2). Seventy-five percent of the man-hours were used in 20 weeks or less in about one-sixth of the establishments, 21-28 weeks in three-fifths of the establishments and 29 weeks or more in one-fourth of the establishments.

Employment trends--Another indication of seasonality in an industry is the variation in the level of employment. In the sugar beet processing industry, nonsupervisory employment in workweeks ranked by man-hours showed a continuous decline from the peak week to the twenty-sixth most active week. Between the peak week and the fourteenth week, nonsupervisory employment declined from 21,500 to 16,700 or 22 percent. Nonsupervisory employment dropped to 9,000 by the twentieth week and to 4,800 in the lowest week of activity for the year. Average nonsupervisory employment per operating establishment declined from 371 employees in the peak week to 83 in the lowest week.

Workweek	Nonsupervisory employment	
	Total	Average per establishment
Peak week	21,500	371
7th highest week	18,400	317
14th highest week	16,700	288
20th highest week	9,000	155
Lowest week	4,800	83

1/ Smith, P. B., "Research and the Sugar Beet Crop," Great Western Report, 1968, p. 15.

Multiple shift operations--The use of multiple shifts, when feasible, permits establishments to utilize their processing facilities to a greater extent, and enables them to reduce the length of individual employee workweeks and also the number of active processing weeks. The operation of a second or third shift can result in substantial savings when premium rates have to be paid for overtime hours. However, the reduction of overtime hours is not the primary reason for shift operations in sugar beet processing since the industry qualifies for unlimited overtime exemption under section 13(b)(15) as well as for partial exemption under section 7(c) of the Fair Labor Standards Act.

All sugar beet processing establishments operated on a multiple shift basis some time during the year (Appendix Table D-3). Of the 58 establishments, 3 operated multiple shifts for 14 weeks or less, 39, or two-thirds, operated multiple shifts for 15-20 weeks, 8 for 21-28 weeks and 8 for 29 or more weeks.

Data available on man-hours and nonsupervisory employment on the first shift for the peak week, the seventh and twentieth highest weeks provide an indication of the importance of multiple shifts. In these weeks, over seven-tenths of the operating multiple-shift establishments used less than 50 percent of the man-hours on the first shift (Appendix Table D-4). These establishments accounted for three-fourths of the industry man-hours in the peak week, 94 percent in the seventh and 77 percent in the twentieth most active week.

Plants with less than half of their nonsupervisory employees on the first shift represented a little over three-fourths of all establishments in the peak week of operation, 91 percent in the seventh week and 84 percent in the twentieth week (Appendix Table D-5). These establishments employed 81, 93 and 87 percent of the nonsupervisory employees in the industry during the peak, seventh and twentieth weeks, respectively.

Weekly Man-hours

All establishments--Distribution of aggregate weekly hours by weekly hours of work of individual employees varied significantly in the five selected weeks for which separate data were collected. The data indicated that declines in aggregate weekly man-hours were accompanied by declines in the proportions of weekly man-hours accounted for by employees working long hours. Employees working over 40 hours a week accounted for more than half of the man-hours in the peak week and the proportion dropped, as aggregate man-hours decreased, to about two-fifths in the seventh and tenth weeks and to three-tenths by the twentieth week of operation (Appendix Table D-6). The most significant change occurred in the "Over 50 hours" category which dropped from 27 percent

in the peak week to 8 percent in the twentieth week. The relative importance of the 40-50 hours grouping also declined but not as strikingly.

Selected workweek	Aggregate hours	Percent of hours worked by employees working		
		Over 40 hours	Over 40 and including 50 hours	Over 50 hours
Peak week	942,000	54	27	27
7th highest week	763,000	43	26	17
10th highest week	733,000	42	26	16
14th highest week	654,000	39	24	15
20th highest week	348,000	29	21	3

Shift operation--All of the establishments in the peak week and seventh highest weeks of activity were operating with multiple shifts (Appendix Table D-7). Consequently, the distribution of man-hours by weekly hours of work was the same for multiple shift establishments as for all establishments during these weeks. To a lesser extent, this was also the case for the twentieth week even though only one-third of the establishments were operating with multiple shifts.

Establishment size--Fifty-five of the 58 establishments employed 250 or more employees in the peak workweek (Appendix Table D-9). These establishments accounted for 96 percent of the total man-hours in each of the five selected weeks studied.

Man-hours in Excess of 40 a Week

In all establishments, 120,000 man-hours, or one-eighth of the total, represented aggregate hours worked beyond 40 per individual worker in the peak week of operation (Appendix Table D-10). This compares with 52,000 hours (8 percent) in the fourteenth week and 19,000 (5 percent) in the twentieth week. The average man-hours worked in excess of 40 per employee working over 40 hours declined from 12.5 hours in the peak week to 10.3 hours in the fourteenth week and 9.2 hours in the twentieth week.

About three-fourths of the man-hours in excess of 40 in the peak week were worked by employees working over 50 hours (Appendix Table D-11). The proportion dropped to about three-fifths in the seventh, tenth and fourteenth highest weeks and to less than half in the twentieth week. The hours these employees worked beyond 50 hours per week accounted for

almost two-fifths of total man-hours over 40 in the peak week, and from a fifth to a fourth in the other selected weeks.

Selected workweek	Man-hours over 40				Man-hours over 50	
	Total		In workweeks over 50 hours			
	Number	Percent	Number	Percent	Number	Percent
Peak week	120,000	100	88,000	73	46,000	38
7th highest week	68,000	100	40,000	59	18,000	26
10th highest week	63,000	100	37,000	59	16,000	25
14th highest week	52,000	100	29,000	56	12,000	23
20th highest week	19,000	100	9,000	47	4,000	21

Overtime Hours at Premium Rates

Eight percent of all hours worked in the peak week were paid for at premium rates of not less than time and one-half the regular rate. The proportion declined to 5 percent in the tenth highest week of operation and remained at approximately that level through the twentieth week (Appendix Table D-12). All of the man-hours paid for at premium rates were worked by employees working over 40 hours in the peak, fourteenth and twentieth weeks. In the seventh and tenth weeks, about 7 percent of the man-hours paid for at premium rates were worked by employees who worked 40 hours or less. Premium pay for hours under 40 may be attributable to daily overtime payments provided for under collective bargaining agreements.

It is evident from the survey that many sugar beet processing plants are not fully utilizing the overtime exemptions available to them--the year-round unlimited exemption under section 13(b)(15) and the 14-week partial exemption under section 7(c). In workweeks of over 40 but not more than 50 hours, all hours beyond 40 except for a small fraction in the peak week were paid for at premium rates. (The proportions may include some premium pay for hours other than those in excess of 40 per week.)

Selected workweek	Man-hours worked in workweeks of over 40 and including 50 hours			
	Total	Over 40 hours	Paid for at premium rates	
			Number	Percent of hours over 40
Peak week	249,000	33,000	32,000	97
7th highest week	198,000	28,000	28,000	100
10th highest week	190,000	26,000	26,000	100
14th highest week	156,000	22,000	23,000	105
20th highest week	72,000	9,000	9,000	100

In workweeks exceeding 50 hours, the proportion of man-hours in excess of 40 paid for at premium rates declined from nearly half in the peak week of activity to about one-fourth in the fourteenth week and then increased to two-thirds in the twentieth week.

The contrasting relationship between man-hours paid for at premium rates in workweeks of over 40 and including 50 hours and workweeks of over 50 hours raises several possibilities regarding the use of the overtime exemptions under sections 7(c) and 13(b)(15). It is possible that some establishments used the unlimited overtime exemption under section 13(b)(15) only for certain groups of employees and these employees worked in excess of 50 a week. It is also possible that establishments using either the unlimited exemption or partial exemption under section 7(c) had few employees working over 40 and including 50 hours. Either of these situations could account for the fact that virtually all of the hours over 40 in workweeks of 40-50 hours were paid for at time and one-half, but only a portion of the man-hours over 40 in workweeks of over 50 hours were paid for at time and one-half.

	Man-hours worked in workweeks of over 50 hours				
				Paid for at premium rates	
Selected workweek	Total	Over 40 hours	Over 50 hours	Number	Percent of hours over 40
Peak week	257,000	88,000	46,000	43,000	49
7th highest week	129,000	40,000	18,000	11,000	28
10th highest week	120,000	37,000	16,000	10,000	27
14th highest week	96,000	29,000	12,000	7,000	24
20th highest week	29,000	9,000	4,000	6,000	67

Weekly Hours of Work

In the peak week, over half of the nonsupervisory employees worked 40 hours or less, one-fourth worked over 40 but not more than 50 hours and a fifth worked over 50 hours (Appendix Table D-13). There appears to be a direct relationship between aggregate hours and proportion of employees on long workweeks. As you move further away from the peak week, the proportion of employees working more than the 40-hour maximum workweek standard applicable to nonexempt employees decreases. This proportion declined from 45 percent in the peak week to 23 percent in the twentieth week.

	Percent of employees working		
Selected workweek	40 hours or less	Over 40 and including 50 hours	Over 50 hours
Peak week	55	25	20
7th highest week	65	23	12
10th highest week	65	23	12
14th highest week	70	20	10
20th highest week	77	17	6

Relationship Between Daily and Weekly Hours of Work

Even though there are no limitations on daily or weekly hours for processing employees qualifying for the unlimited overtime exemption available to this industry under section 13(b)(15), only a small proportion of the employees worked over 10 hours one or more days of each of the selected weeks--13 percent in the peak week, and 6 percent of the employees in each of the other four selected weeks studied (Appendix Tables D-14 and D-15). Most nonsupervisory employees worked no more than eight hours a day all days of the workweek--72 percent in the peak week of operations and about 85 percent in the other selected weeks.

	Percent of nonsupervisory employees working				
		Over 8 at least one day but never over 10	Over 10 hours at least one day	Over 50 hours a week	
Selected workweek	8 or fewer hours every day			Total	Over 10 hours at least one day
Peak week	72	14	13	20	10
7th highest week	85	10	6	12	4
10th highest week	84	10	6	12	4
14th highest week	86	8	6	10	4
20th highest week	86	8	6	6	4

Most of the employees who worked over 10 hours at least one day of the selected workweek also worked more than 50 hours during that same week. However, they accounted for only half of the employees working over 50 hours in the peak week and the proportion fell to a third in the seventh highest week of operation.

Employees working not more than eight hours every day of the week accounted for almost all of the employees working less than 40 hours in each of the selected weeks studied (Appendix Tables D-16 and D-17). Moreover, they accounted for a substantial proportion of the employees working over 50 hours--a fourth in the peak week of activity and about half in the seventh, tenth and fourteenth highest weeks.

Collective Bargaining Agreements

All establishments in the survey were covered by collective bargaining agreements. These contracts covered 16,900 nonsupervisory employees, or almost four-fifths of the work force, in the peak workweek of 1967 (Appendix Table O-1). All agreements covered plant workers and three-fourths of the contracts covered maintenance workers as well (Appendix Table O-2). Only 19 of the 60 contracts in the industry related to clerical employees.

Virtually all of the covered employees were employed in establishments with agreements providing for premium overtime pay for hours over 40 a week and eight a day (Appendix Table D-18). Only 100 employees worked in establishments with overtime pay for hours over 48 a week and eight hours a day.

All of the collective bargaining agreements in this industry provided for premium overtime pay after specified weekly and daily hours. However, eight of the sugar beet processing agreements provided for a waiver of premium overtime pay for a certain number of weeks (Appendix Table D-19). The waiver provision applied to 2,400 workers for a period of 15-20 weeks.

Cotton Ginning

Introduction

Cotton gins may qualify for a partial 14-week overtime exemption under section 7(c) of the Fair Labor Standards Act. In addition, section 13(b)(15) of the Act provides a year-round unlimited exemption from the maximum hours provisions for-

> any employee engaged in ginning of cotton for market, in any place of employment located in a county where cotton is grown in commercial quantities . . .

The limited overtime exemption under section 7(c) generally applies on an establishment basis during the period or periods when cotton is being received for ginning. When applicable, the exemption under section 7(c) may be claimed for all employees, including office workers, exclusively engaged in the operations specified in the industry determination. During exempt weeks, however, employees must be paid at not less than one and one-half times their regular rate for all hours in excess of 10 per day or 50 per week. The qualifications for year-round unlimited exemption under section 13(b)(15) include the following: (1) the employee must actually be engaged in the ginning of cotton; (2) the cotton must be ginned "for market"; and (3) the place of employment in which the employee is engaged in these operations must be located in a county where cotton is grown in commercial quantities.

The survey, conducted for the Divisions by the U.S. Department of Agriculture, disclosed 3,753 cotton gins that employed 49,500 nonsupervisory employees during the peak workweek in each establishment in 1967.

Operations and Technology

Over four-fifths of the cotton grown in the United States is ginned between mid-September and mid-January. 1/ The pattern of cotton production mainly controls the seasonality of the ginning operation. In some producing areas, harvesting may be completed within six to eight weeks, the peak period lasting about four weeks. 2/ However, the actual ginning operation extends up to four months in some areas. Variations in the usual peak weeks of ginning depend on the climatic conditions and the growing season in the area. Inclement weather frequently delays the ginning season, especially in the South where rainfall is heavy in autumn.

The almost complete switch in the method of harvesting cotton from hand-picking to mechanical harvesting has reduced the length of the ginning

1/ U.S. Department of Agriculture, Utilization and Cost of Labor for Cotton Ginning, Agricultural Economic Report No. 70, 1965, p. 6.

2/ U.S. Department of Agriculture, Agricultural Situation, April 1967, p. 6.

season. The proportion of the cotton crop that is harvested by machines rose from 2 percent in 1947 to 89 percent in 1966. 1/ The two basic types of harvesting machines are pickers and strippers. In 1965, over two-thirds of the harvesting machines were pickers. 2/ The harvesting machines operate most effectively after all the cotton has matured and the leaves have fallen because of defoliation or frost. Consequently, there is an overflow of seed cotton at gins during the peak harvesting time. Peak periods in ginning have thus become more highly concentrated, usually confined to three to five weeks of operation.

To lengthen the ginning season, especially in some areas of the West and Southwest where humidity is low, seed cotton is stored either on the farm or at the gins to be processed at a later date. The greatest problem with storing seed cotton is its perishability. Moisture content is the prime factor affecting perishability of seed cotton when stored. If the moisture level is above 14 percent--it should be ginned promptly.

Technological changes have greatly influenced the ginning operation. Modern gins include improved designs in plant lay-out and the latest types of equipment for greater production. 3/ To increase the ginning capacity of a plant, different types of driers have been installed with automatic controls to maintain a satisfactory temperature based on the drying needs of the seed cotton. Seed cotton input is another major improvement at the gin. It involves the use of automatic feeders to control the flow rate of bulk seed cotton from trucks or bins through the gin suction pipe to the drier or initial cleaning equipment. The automatic feeder minimizes chokage in seed cotton cleaners, provides an even flow of cotton to the driers and cleaners, minimizes fiber damage, and decreases the time loss between bales. 4/

Since cotton ginning is a seasonal operation, more and more gin owners are giving special attention to employment problems. Key members of the gin crew are generally retained on a year-round basis. Many companies maintain a skeleton day crew at the beginning of the harvest season to gin the few loads of seed cotton received. Some firms use the first few weeks as training time for new crew members.

1/ U.S. Department of Labor, Farm Labor Developments, Manpower Administration, September-October 1967, p. 26.

2/ Ibid., p. 27.

3/ Utilization, op. cit., p. 2.

4/ U.S. Department of Agriculture, Handbook for Cotton Ginners, Agricultural Research Service, February 1964, p. 11.

The employment of reliable seasonal employees with ginning experience is a critical problem because employees often move to other jobs before the season is over. To counteract this practice, ginners usually offer some type of bonus to entice seasonal employees to remain until the end of the operating period.

During the off-season, some ginners extend their operations by selling seed, fertilizer, insecticides, and farm equipment. Others buy, condition, and store grain, or serve as lending agents to the growers. 1/

Seasonality of Operation

Measures or indicators of seasonality for which data were collected in this survey include length of active operating season, short-term employment trends, and use of multiple shift operations.

Length of active season--The survey data show that cotton ginning is a highly seasonal industry. A total of 24.2 million man-hours were worked by nonsupervisory employees in cotton gins in 1967 (Appendix Table E-1). Aggregate hours worked during the calendar year were highly concentrated within a small number of weeks. Fifty percent of total man-hours were used in the five most active weeks of operation and 75 percent were used in the 12 most active weeks. Four-fifths of the man-hours were used in the 14 weeks of highest activity--the maximum number of weeks for which the partial overtime exemption under section 7(c) of the Fair Labor Standards Act may be claimed.

There were significant changes in total weekly man-hours when weeks were ranked in descending order of aggregate hours. Week to week decreases during the 14 most active weeks ranged from 11 to 18 percent. The seasonality of ginning is reflected in the sharp decline of man-hours from the peak week to the seventh highest week, a decline of 63 percent. From the seventh to the tenth week, aggregate weekly hours declined 40 percent, and between the tenth and fourteenth weeks, 48 percent.

Almost half of the 3,753 gins in operation during 1967 employed nonsupervisory employees for at least 20 weeks, one-third for over 31 weeks and one-sixth employed some nonsupervisory employees for all 52 weeks. The number of the most active weeks required to account for 50 percent of annual man-hours was 8 or less in 87 percent of the gins, 9-14 weeks in an additional 8 percent, and less than 28 weeks in the remaining gins (Appendix Table E-2). Well over two-fifths of the gins used 75 percent of their annual man-hours within 8 weeks and a third used that proportion in 9-14 weeks.

1/ Utilization, op. cit., p. 7.

Employment trends--Employment decreases from the peak week also show the seasonality of the industry. In cotton ginning, nonsupervisory employment in the workweeks ranked by man-hours showed substantial decreases from week to week. Between the peak week and the fourteenth week, nonsupervisory employment declined from 49,500 to 11,100 or 78 percent. Employment declined further to 5,700 in the twentieth week and to 1,500 in the lowest week of the year. Average nonsupervisory employment, per operating gin, declined from 13 employees in the peak week to 2 employees in the lowest week.

	Nonsupervisory employment	
Workweek	Total	Average per establishment
Peak week	49,500	13
7th highest week	27,800	8
14th highest week	11,100	4
20th highest week	5,700	3
Lowest week	1,500	2

Multiple shift operations--Multiple shift operations are often common in seasonal industries since this is one way to reduce the length of individual employee workweeks while permitting a greater utilization of processing facilities. Reducing the length of individual employee workweeks can result in substantial savings when premium rates have to be paid for overtime hours. In cotton ginning, however, only about a fourth of the gins (890 out of 3,453) operated with multiple shifts at some time during 1967 (Appendix Table E-3). The relatively small proportion of gins operating multiple shifts in this highly seasonal industry may indicate that the use of shifts to reduce overtime costs was not necessary because of the 14-week partial overtime exemption available under section 7(c) and the year-round unlimited overtime exemption available to certain gins under section 13(b)(15).

Of the 890 cotton gins that operated more than one shift at some time during the year, 831 operated multiple shifts for 8 weeks or less and the other 59 operated multiple shifts for 9-14 weeks. The fact that the multiple shift operations were of relatively short duration can be attributed to the short ginning season.

Data on nonsupervisory employment and man-hours worked on the first shift provide an indication of the relative importance of multiple shift operations in this industry. In the peak week of 1967, only 35 of the 890 gins which operated multiple shifts had less than 50 percent of the man-hours worked on the first shift and 20 of the 137 gins operating with shifts in the seventh highest week had less than 50 percent on the first shift (Appendix Table E-4). Man-hours worked on shifts other than the first shift accounted for only 23 percent of industry man-hours in the peak week and 6 percent in the seventh week (Appendix Table E-7).

In the peak week, 23,600 employees, or 48 percent of all nonsupervisory employees, were employed in gins operating with more than one shift (Appendix Table E-5). Over four-fifths of the gins operating multiple shifts in the peak week employed from 50 to 64 percent of their employees on the first shift. These gins employed two-fifths of all nonsupervisory employees in the peak week.

Weekly Man-hours

All establishments--Significant variations in the distribution of weekly man-hours by weekly hours of individual employees occurred during the active ginning season. The proportion of aggregate man-hours worked by employees who worked over 40 hours decreased from 92 percent in the peak week to 73 percent in the seventh week, 42 percent in the fourteenth week, and 38 percent in the twentieth highest week (Appendix Table E-6).

The most significant change in the distribution of man-hours by weekly hours of work occurred in the "Over 50 hours" category where the proportion declined from 84 percent in the peak week to 53 percent in the seventh week and 15 percent in the fourteenth week.

Selected workweek	Aggregate hours	Percent of hours worked by employees working		
		Over 40 hours	Over 40 and including 50 hours	Over 50 hours
Peak week	3,187,000	92	8	84
7th highest week	1,180,000	73	20	53
10th highest week	708,000	60	24	36
14th highest week	367,000	42	27	15
20th highest week	195,000	38	26	11

The greatest absolute change in man-hours of employees working over 50 hours occurred between the peak week and the seventh week when the total hours worked by employees working over 50 hours declined from 2.7 million to 630,000, or 77 percent. This sharp drop, which was accompanied by a decline in total man-hours in the "Over 40 and including 50 hours" category, reflects the marked seasonality in ginning. During this same period, man-hours of employees working not more than 40 hours a week increased from 250,000 to 319,000, or 28 percent.

Shift operation--The one-fourth of the gins that operated multiple shifts during the peak week accounted for more than half of total man-hours worked in the industry in that week (Appendix Table E-7). Employee-workweeks of over 40 hours accounted for 95 percent of the total hours worked in gins operating multiple shifts in the peak week. There were no multiple shifts in operation during the fourteenth week and only four

gins operated with multiple shifts in the twentieth week. Surprisingly, the proportions of man-hours worked by employees working over 50 hours were significantly larger in multiple shift establishments--90 percent in the peak week and 83 percent in the seventh week--than in single shift establishments--78 percent and 48 percent in the peak and seventh weeks, respectively.

Gin size--The average gin is quite small. Over half of the gins in the industry employed 8-24 nonsupervisory employees in the peak workweek (Appendix Table E-9). This group accounted for about half of the man-hours used in each of the selected workweeks for which separate data were collected. Most of the remaining man-hours were used by gins employing 25-99 nonsupervisory employees in the peak workweek.

In both the 8-24 and 25-99 employment size groupings, variations in the distribution of man-hours by weekly hours of work in the selected weeks studied generally paralleled the pattern noted for all establishments. However, workweeks of over 50 hours comprised a greater proportion of the man-hours in the larger establishments in each of the five selected weeks studied. For example, in the peak and seventh weeks, employees working over 50 hours accounted for 87 and 65 percent, respectively, of the man-hours in the 25-99 employee-size grouping compared with 84 and 48 percent, respectively, in the smaller establishments. In the 12 largest establishments, all of the nonsupervisory employees worked more than 50 hours in the peak and seventh weeks, 40-50 hours in the tenth week and less than 40 hours in the fourteenth week.

Establishment size in peak workweek	Aggregate hours in peak workweek	Percent of hours worked by employees working		
		Over 40 hours	Over 40 and including 50 hours	Over 50 hours
All establishments	3,187,000	92	8	84
1-7 employees	367,000	82	13	69
8-24 employees	1,637,000	92	8	84
25-99 employees	1,030,000	94	7	87
100 employees or more	153,000	100	-	100

Man-hours in Excess of 40 a Week

In all establishments, 1.3 million man-hours, or 42 percent of the weekly man-hours, represented hours worked beyond 40 in the peak week of operation (Appendix Table E-10). This compares with 261,000 hours, or 22 percent, in the seventh week, and 31,000 hours, or 8 percent, in the fourteenth week. By the twentieth week, hours in excess of 40 had dropped to 13,000 or 7 percent of the weekly man-hours. Average man-hours in

excess of 40 per employee working over 40 hours ranged from 33.9 in the peak week and 17.4 hours in the seventh week to less than 10 hours in the fourteenth and twentieth highest weeks.

In the peak week of 1967, 97 percent of the man-hours in excess of 40 per week were worked by employees who worked over 50 hours (Appendix Table E-11). The proportion accounted for by such long workweeks declined to 89 percent in the seventh week and 55 percent in the fourteenth week. It is noteworthy that man-hours in excess of 50 per individual employee accounted for over seventh-tenths of total man-hours over 40 in the peak week.

The survey does not provide separate data for gins that qualify for the year-round unlimited exemption under section 13(b)(15). However, the high prevalence of man-hours in excess of 50 would seem to indicate that many gins utilize the exemption available to many of them under section 13(b)(15).

	Man-hours over 40					
	Total		In workweeks over 50 hours		Man-hours over 50	
Selected workweek	Number	Percent	Number	Percent	Number	Percent
Peak week	1,347,000	100	1,311,000	97	968,000	72
7th highest week	261,000	100	232,000	89	133,000	51
10th highest week	117,000	100	94,000	80	54,000	46
14th highest week	31,000	100	17,000	55	8,000	26
20th highest week	13,000	100	7,000	54	3,000	23

Overtime Hours at Premium Rates

Only 5 percent of total man-hours worked in the peak week were paid for at premium rates of not less than one and one-half times the regular rate (Appendix Table E-12). In the other selected weeks--the seventh, tenth, fourteenth, and twentieth--the proportion did not exceed 3 percent. In each of the selected workweeks, all of the man-hours paid for at premium rates were worked by employees who worked over 40 hours and most of them were worked by employees who worked over 50 hours.

In workweeks of more than 40 up to and including 50 hours, the proportion of man-hours in excess of 40 paid for at time and one-half the hourly rate increased from 11 percent in the peak week to 29 percent in the fourteenth week and 50 percent in the twentieth week. (The proportions

may include some premium pay for hours other than those in excess of 40 per week.)

Selected workweek	Man-hours worked in workweeks of over 40 and including 50 hours			
	Total	Over 40 hours	Paid for at premium rates	
			Number	Percent of hours over 40
Peak week	253,000	36,000	4,000	11
7th highest week	231,000	29,000	3,000	10
10th highest week	172,000	23,000	2,000	9
14th highest week	100,000	14,000	4,000	29
20th highest week	52,000	6,000	3,000	50

In workweeks of over 50 hours, the proportions of total man-hours in excess of 40 paid for at premium rates were also small--no more than 13 percent in the peak week, seventh and tenth highest weeks. These small proportions coupled with the magnitude of man-hours worked in excess of 50 per week indicate that many gins qualify for the unlimited year-round overtime exemption provided under section 13(b)(15) of the Fair Labor Standards Act.

Selected workweek	Man-hours worked in workweeks of over 50 hours				
	Total	Over 40 hours	Over 50 hours	Paid for at premium rates	
				Number	Percent of hours over 40
Peak week	2,684,000	1,311,000	968,000	162,000	12
7th highest week	630,000	232,000	133,000	24,000	10
10th highest week	254,000	94,000	54,000	12,000	13
14th highest week	55,000	17,000	8,000	7,000	41
20th highest week	22,000	7,000	3,000	3,000	43

Weekly Hours of Work

In the peak week, seven-tenths of the employees worked over 50 hours, one-tenth worked over 40 but no more than 50 hours, and a fifth worked 40 hours or less. The proportion of nonsupervisory employees working over 50 hours declined sharply and by the fourteenth week only 8 percent of the employees worked such long hours.

Selected workweek	Percent of employees working		
	40 hours or less	Over 40 and including 50 hours	Over 50 hours
Peak week	20	11	69
7th highest week	46	18	36
10th highest week	58	20	22
14th highest week	72	19	8
20th highest week	74	20	7

Relationships Between Daily and Weekly Hours of Work

Seven-tenths of all nonsupervisory employees worked over 10 hours at least one day of the peak week, the same proportion that worked more than 50 hours during that week (Appendix Tables E-14 to E-17). Only in the seventh and twentieth weeks did the proportion of employees working over 50 hours exceed the proportion working over 10 hours at least one day. The proportion of employees working not more than eight hours a day steadily increased from 15 percent in the peak week to 68 percent in the fourteenth highest week.

	Percent of nonsupervisory employees working				
		Over 8 at least one day but never over 10	Over 10 hours at least one day	Over 50 hours a week	
Selected workweek	8 or fewer hours every day			Total	Over 10 hours at least one day
Peak week	15	15	70	69	63
7th highest week	39	31	30	36	22
10th highest week	52	26	23	22	14
14th highest week	68	24	9	8	3
20th highest week	75	20	5	7	3

Most employees who worked over 10 hours a day also worked in excess of 50 hours a week--9 out of 10 in the peak week and 3 out of 5 in the tenth highest week. These employees accounted for nine-tenths of the employees working over 50 hours in the peak week, and slightly over three-fifths in the tenth week. The seasonality of cotton ginning coupled with an unlimited overtime exemption for some gins under section 13(b)(15) probably accounts for the relatively high proportion of employees working beyond the 10-hour daily and 50-hour weekly standards established under section 7(c).

Employees who worked not more than eight hours every day of the workweek comprised the bulk of the employees in workweeks of 40 hours or less--three-fifths in the peak week increasing to over five-sixths in the fourteenth week. However, one-fourth of the employees who worked 40 hours or less in the peak workweek worked over 10 hours at least one day of that week.

Collective Bargaining Agreements

The survey revealed no collective bargaining agreements in the cotton ginning industry.

Cotton Storing and Compressing

Introduction

Establishments engaged in the receiving, handling and storing of raw cotton and the compressing of raw cotton when performed at a cotton warehouse or compress-warehouse facility, other than one operated in conjunction with a cotton mill, generally qualify for a 14-week partial overtime exemption under section 7(c) of the Fair Labor Standards Act. Also included are any operations incident to the foregoing such as loading, unloading, weighing, sampling, assembling and preparing for shipment when performed at the storing establishment. During exempt weeks, employees must be paid not less than one and one-half times their regular rate for all hours in excess of 10 per day or 50 per week.

The survey conducted for the Divisions by the U.S. Department of Agriculture covered 895 establishments primarily engaged in cotton storing and compressing in 1967. Establishments in the industry employed 17,100 nonsupervisory workers during the peak week of operation of each establishment in 1967.

Operations and Technology

Cotton storing and compressing activities are mainly controlled by the flow of cotton from cotton gins. Since the ginning season is of a relatively short duration, the peak period for handling and storing the ginned bale coincides with the peak ginning season. The compressing and warehousing of cotton is a year-round operation and some cotton bales are received at storing and compressing establishments at irregular intervals throughout the year. However, annual man-hours are not evenly distributed.

Some compressing actually starts at the gin since many local gins find it economically feasible to convert their baling presses to turn out bales of standard density, thus eliminating the necessity for sending the cotton to centrally located compresses for rebaling before shipment to domestic mills. 1/ The availability, service and convenience of cooperative cotton compresses aid in increasing the number of bales that can be handled during an operating period.

For the most part, the Nation's cotton moves directly from gins to central storage and the bulk of the cotton remains in storage warehouses for a number of months depending on domestic and foreign demand. 2/ Huge quantities of cotton may be held in storage for a year or more before being marketed. For example, the carry-over amounted to 17 million bales in 1966 and 12 million bales in 1967. 3/

1/ U.S. Department of Agriculture, Handbook for Cotton Ginners, No. 260, 1964, p. 53.

2/ U.S. Department of Agriculture, Agricultural Situation, April 1967, p. 6.

3/ Ibid., p. 7.

Storing cotton in weather proof warehouses presents no deterioration problem. Baled cotton is often stored in gin yards in arid areas without any noticeable damage to the lint. The main concern in storing cotton is destruction by fire. Since certain standards are prescribed by the National Board of Fire Underwriters for protecting cotton bales from fire hazards, warehouses are usually constructed of fire-resistant and non-combustible materials. 1/

Technological advances in the industry include the conversion from wood to steel presses, and refinements such as automatic, semiautomatic or electrical controls on the presses which speed the operation and reduce labor requirements. 2/ The introduction of hydroconveying and pneumatic conveying equipment and the use of other mechanized handling equipment such as fork-lift trucks have also reduced the amount of labor required in the handling of cotton bales.

Seasonality of Operation

Critical determinants of seasonality for which data were collected in this survey include the length of active operating season, short-term employment trends, and use of multiple shift operations.

Length of active season--In 1967, 18.4 million man-hours were used in the cotton storing and compressing industry (Appendix Table F-1). Fifty percent of these man-hours were used in the 18 most active weeks as measured by aggregate weekly man-hours. Over two-fifths of the man-hours were used in the 14 weeks of highest activity--the weeks in which establishments were most likely to use the partial overtime exemption available to the industry under section 7(c). Weekly man-hours declined 28 percent between the peak week and the seventh highest week, 23 percent between the seventh and fourteenth weeks, and 17 percent between the fourteenth and twentieth highest weeks.

Of the 895 establishments in operation during 1967, 588 operated 52 weeks. The number of the most active weeks required to account for 50 percent of the annual man-hours was 14 or less in over one-third of the establishments, 15-20 weeks in another third and 21-28 weeks in the remaining third (Appendix Table F-2). Only 5 percent of the establishments used 75 percent of the annual man-hours in 8 weeks or less. It took more than 28 weeks for three-fifths of the establishments to use 75 percent of their annual man-hours.

1/ Handbook, op. cit., pp. 113-114.

2/ Ibid., pp. 51 and 53.

Employment trends--Another indication of seasonality in an industry is the variation in the level of employment. In the cotton storing and compressing industry, nonsupervisory employment in workweeks ranked by man-hours showed an almost continuous decline from week to week. Between the peak week and the fourteenth week, nonsupervisory employment declined from 17,100 to 11,600, or almost one-third. In the twentieth week, employment was down to 9,800, and in the lowest week of the year it had declined to 4,700. Average nonsupervisory employment per operating establishment was 19 in the peak week and eight in the lowest week.

Workweek	Nonsupervisory employment	
	Total	Average per establishment
Peak week	17,100	19
7th highest week	14,400	17
10th highest week	12,700	15
14th highest week	11,600	14
20th highest week	9,800	12
Lowest	4,700	8

Multiple shift operations--Multiple shift operations were rare in the cotton storing and compressing industry. Only five establishments operated more than one shift during the year and none of these for more than 20 weeks (Appendix Table F-3).

Weekly Man-hours

All establishments--There were significant variations in the distribution of weekly man-hours by weekly hours of work of individual employees during the five selected weeks for which such data were collected separately--the peak week, seventh, tenth, fourteenth, and twentieth most active weeks. The proportion of aggregate weekly man-hours accounted for by employees working over 40 hours decreased from 71 percent in the peak week to 53 percent in the seventh week and down to 37 percent by the twentieth week (Appendix Table F-6).

Pronounced changes in the distribution of man-hours by weekly hours of work occurred in the "Over 50 hours" interval. The proportion steadily declined from 46 percent in the peak week to 18 percent in the fourteenth week, and 10 percent in the twentieth week. These declines were accompanied by increases in the proportion of total man-hours in the "40 or less hours" interval--from 29 percent in the peak week to 47 percent in the seventh week and 63 percent in the twentieth week. The pro-

portion of aggregate hours worked by employees working over 40 and including 50 hours remained almost constant in each of the selected workweeks.

Selected workweek	Aggregate hours	Percent of hours worked by employees working: Over 40 hours	Over 40 and including 50 hours	Over 50 hours
Peak week	781,000	71	25	46
7th highest week	561,000	53	27	26
10th highest week	498,000	51	27	23
14th highest week	431,000	46	28	18
20th highest week	357,000	37	26	10

Establishment size--Establishments employing 25-99 nonsupervisory employees in the peak workweek accounted for almost half of the total man-hours in each of the five selected weeks studied (Appendix Table F-9). Establishments in the 100 or more employee-size class with over one-fourth of the hours and those in the 8-24 employee category with one-sixth accounted for most of the remaining aggregate man-hours in the peak week. The proportion of man-hours worked by employees in the "Over 50 hours" category increased as the establishment employee-size increased. In the peak week, for example, 6 percent of the aggregate hours of establishments with 1-7 employees were worked by employees working over 50 hours. The proportion was 20 percent for establishments with 8-24 employees, 45 percent for establishments with 25-99 employees, and 76 percent for establishments with 100 or more employees. Similar but less pronounced differences were found in each of the other selected weeks even though the proportion of man-hours worked in workweeks in excess of 50 hours declined.

Establishment size in peak workweek	Aggregate hours in peak workweek	Percent of hours worked by employees working: Over 40 hours	Over 40 and including 50 hours	Over 50 hours
All establishments	781,000	71	25	46
1-7 employees	68,000	42	36	6
8-24 employees	124,000	53	33	20
25-99 employees	381,000	73	28	45
100 employees or more	207,000	89	13	76

Man-hours in Excess of 40 a Week

In the peak week of operations in all establishments, 162,000 hours, or one-fifth of total man-hours, represented hours worked in excess of 40

per individual employee (Appendix Table F-10). This compares with 40,000, or 9 percent of the total, in the fourteenth week and 22,000, or 6 percent, in the twentieth week. Average hours in excess of 40 per employee working over 40 hours ranged from 16.4 hours in the peak week to 10.1 hours in the fourteenth week and 7.9 hours in the twentieth week.

Although the 14-week overtime exemption under section 7(c) is limited to 50 hours a week, five-sixths of the man-hours in excess of 40 in the peak week and over half in the twentieth week were worked by employees working over 50 hours. The aggregate hours these employees worked in excess of 50 hours a week, which are compensable at premium rates, accounted for a substantial proportion of the man-hours beyond 40 (the Fair Labor Standards Act workweek standard for nonexempt workers)--half in the peak week, about one-third in the fourteenth week, and over a fourth in the twentieth week.

Selected workweek	Man-hours over 40				Man-hours over 50	
	Total		In workweeks over 50 hours			
	Number	Percent	Number	Percent	Number	Percent
Peak week	162,000	100	136,000	84	80,000	49
7th highest week	68,000	100	51,000	75	27,000	40
10th highest week	54,000	100	39,000	72	20,000	37
14th highest week	40,000	100	26,000	65	13,000	32
20th highest week	22,000	100	12,000	55	6,000	27

Overtime Hours at Premium Rates

About 13 percent of the aggregate hours worked in the peak week were paid for at premium rates of not less than one and one-half times the regular rate (Appendix Table F-12). The proportion decreased to 7 percent in the tenth week and 4 percent in the twentieth week. Virtually all of the man-hours paid for at premium rates in each of the selected weeks were worked by employees working over 40 hours.

In workweeks of over 40 but not more than 50 hours, the proportion of man-hours over 40 paid for at premium rates ranged from 35 percent in the peak week to 71 percent in the fourteenth week. The high ratios indicate that the 14-week overtime exemption is evidently not being used by many establishments that may qualify for such exemption.

Selected workweek	Man-hours worked in workweeks of over 40 and including 50			
	Total	Over 40 hours	Paid for at premium rates	
			Number	Percent of hours over 40
Peak week	198,000	26,000	9,000	35
7th highest week	150,000	17,000	10,000	59
10th highest week	137,000	15,000	9,000	60
14th highest week	121,000	14,000	10,000	71
20th highest week	94,000	9,000	6,000	67

In workweeks exceeding 50 hours, the proportion of man-hours over 40 paid for at premium rates ranged from about three-fifths to about seven-tenths in the five selected workweeks. Since the overtime exemption under section 7(c) is limited to 50 hours a week, hours worked in excess of 50 in weeks in which the exemption is claimed are required to be paid for at not less than time and one-half the regular rate. As shown below, this appeared to be the case as hours paid for at premium rates in workweeks of over 50 hours exceeded the estimated number of man-hours over 50 worked in each of the selected weeks.

	Man-hours worked in workweeks of over 50				
				Paid for at premium rates	
Selected workweek	Total	Over 40 hours	Over 50 hours	Number	Percent of hours over 40
Peak week	358,000	136,000	80,000	92,000	68
7th highest week	149,000	51,000	27,000	35,000	69
10th highest week	117,000	39,000	20,000	25,000	64
14th highest week	79,000	26,000	13,000	18,000	69
20th highest week	37,000	12,000	6,000	7,000	58

Weekly Hours of Work

In the peak week, a third of the nonsupervisory employees worked over 50 hours, a fourth worked over 40 but not more than 50 hours and two-fifths worked 40 hours or less (Appendix Table F-13). In the selected workweeks, the decline in the proportion of employees working more than 50 hours was far greater than the decline in aggregate hours worked. By the fourteenth week, only one-ninth of the nonsupervisory employees worked more than 50 hours and two-thirds worked 40 hours or less. The proportion of employees working over 40 but not more than 50 hours did not change much from one selected period to the next.

	Percent of employees working		
Selected workweek	40 hours or less	Over 40 and including 50 hours	Over 50 hours
Peak week	42	25	32
7th highest week	60	23	17
10th highest week	61	24	15
14th highest week	66	23	11
20th highest week	72	22	6

Relationship Between Daily and Weekly Hours of Work

The proportion of employees working in excess of the 10-hour daily overtime standard was significantly lower than the proportion working in

excess of the 50-hour weekly limitation under section 7(c) only in the peak week--26 percent compared to 32 percent (Appendix Tables F-14 to F-17). In the seventh, tenth and fourteenth weeks, the proportions were not significantly different. In the twentieth week, the proportion of employees working beyond the daily 10-hour standard exceeded the proportion working beyond 50 hours. A large proportion of the employees worked 8 or fewer hours every day of the workweek--two-fifths in the peak week and from over half to two-thirds in the other selected weeks.

	Percent of nonsupervisory employees working				
		Over 8 at least one day but never over 10	Over 10 hours at least one day	Over 50 hours a week	
Selected workweek	8 or fewer hours every day			Total	Over 10 hours at least one day
Peak week	40	34	26	32	21
7th highest week	56	28	16	17	11
10th highest week	60	27	13	15	10
14th highest week	62	27	12	11	7
20th highest week	67	24	9	6	4

A substantial proportion of employees working over 10 hours at least one day also worked in excess of 50 hours a week--82 percent in the peak week, 62 percent in the seventh week, 57 percent in the fourteenth week, and 44 percent in the twentieth week. Similarly, employees working over 10 hours at least one day comprised well over three-fifths of the employees working over 50 hours in each of the five selected weeks studied.

Collective Bargaining Agreements

Collective bargaining was not very prevalent in the cotton storing and compressing industry. According to the survey, only 39 of the 895 establishments were covered by collective bargaining agreements (Appendix Table O-1). The 40 union contracts, in these establishments in 1967, covered 3,000 nonsupervisory employees in a week of maximum employment. The agreements covered plant workers in all 39 establishments; maintenance and clerical workers were also covered in a few establishments (Appendix Table O-2).

Collective bargaining agreements for 1,700 employees, or 57 percent of all organized employees in the industry studied, provided for premium overtime pay for hours over 40 a week and eight a day, and the contracts for an additional 900 employees provided for overtime premium after eight hours a day (Appendix Table F-18). A few employees (100) were covered by a provision specifying overtime premium pay after 48 hours a week and eight hours a day. Premium pay after 40 hours per week was provided for 300 employees.

Collective bargaining agreements generally provide for premium overtime pay after standard weekly and/or daily hours. However, 6 of the 39 establishments in the cotton storing and compressing industry had agreements containing a waiver of premium overtime pay for a specified number of weeks. The waiver applied to only 300 employees and did not exceed 14 weeks for nearly all of them (Appendix Table F-19).

Cottonseed Processing

Introduction

Establishments engaged in the receiving, handling and storing of cottonseed, the processing of cottonseed during the period when the seed is being received, and any operations necessary and incident to the foregoing during this period qualify for a partial 14-week overtime exemption under section 7(d) of the Fair Labor Standards Act. During exempt weeks, however, employees must be paid not less than one and one-half times their regular rate for all hours in excess of 10 per day or 48 per week.

Cottonseed processors are principally located in 14 cotton-producing States from North Carolina to California, with the greatest number of plants located in Texas. 1/ The survey, conducted for the Divisions by the U.S. Department of Agriculture, disclosed 132 cottonseed processing establishments that employed 7,200 nonsupervisory employees during the peak workweek in each establishment in 1967.

Operations and Technology

Cottonseed deliveries to the processors are mainly controlled by the volume of the ginning operation. Since gins do not usually store large quantities of cottonseed, the seeds are shipped immediately to the processors. Normally, 80 percent of the seeds are received at the mills during four months, from September through December. 2/

Because cottonseed moves to the oil mills at a much faster rate than it can be processed during the ginning season, it must be safely stored. Cottonseed tends to deteriorate when held in storage, but the rate and degree of deterioration are related to the condition of the seed when received at the mills and the length of time that elapses before processing. Excessive moisture content and overheating of the cottonseed have an ultimate effect on the quality of both the oil and the meal extracted from the seed. A system of cooling and airing of stored seed is commonly used to prevent discoloration of cottonseed products. Air-cooling makes it possible to store large quantities of prime quality cottonseed for periods of more than 1-1/2 years without deterioration. The development of properly designed seed storage units equipped with adequate air-cooling facilities has resulted in a more stable industry with year-round operation instead of rush operation at high capacity for several months and then complete shutdown. 3/

1/ U.S. Department of Agriculture, Cotton Production, Statistical Reporting Service, May 8, 1969, p. 5.

2/ Bailey, Alton E., Cottonseed and Cottonseed Products (New York: Interscience Publishers, Inc., 1948) pp. 567 and 568.

3/ Ibid., p. 581.

Improved methods of handling cottonseed begin at the gins. Seeds at gins are moved readily by gravity belts, screw conveyors or pneumatic piping. Conveying seed by air in small pipes is now a general practice; a small pipe system can move 70 to 160 pounds of cottonseed per minute initially to storage bins and later for processing. The pipe system can also be used to transfer cottonseed from trucks to railroad cars. Another device for reducing cottonseed handling time in loading and unloading is the portable single-stage centrifugal turboblower unit. 1/ The major innovation in the processing of cottonseed is the shift to the screw press and solvent methods of extracting oil from the oilseed. 2/

Labor requirements differ among the types of processing mills. Hydraulic mills require about 1.7 times the labor of screw press mills and about 2.2 times that of the solvent mills. Solvent mills, which process larger volumes, are now in common use. 3/

Seasonality of Operation

Critical determinants of seasonality for which data were collected in this survey include length of active operating season, short-term employment trends, and use of multiple shift operations in order to minimize the frequency and cost of long workdays and/or workweeks.

Length of active season--In 1967, 9.5 million man-hours were used in the cottonseed processing industry. Fifty percent of these man-hours were used in the 17 most active weeks as measured by weekly man-hours and 75 percent in the 30 most active weeks (Appendix Table G-1). Over two-fifths (44 percent) of the man-hours were used in the 14 weeks of highest activity--the weeks in which establishments were most likely to utilize the exemption available to them under section 7(d). There was only a gradual acceleration in the rate of decline in man-hours from week to week. For example, when the weeks were ranked in descending order of aggregate hours, man-hours declined 13 percent from the peak week to the seventh highest week, 14 percent from the seventh to the fourteenth week, and 18 percent from the fourteenth to the twentieth week.

Of the 132 cottonseed processing establishments in operation during 1967, 126, or 95 percent, employed nonsupervisory employees for 47 weeks and

1/ U.S. Department of Agriculture, Handbook for Cotton Ginners, No. 260, February 1964, p. 70.

2/ U.S. Department of Agriculture, Vital Links Between Farmer and Consumer, Agriculture Marketing, October 1965, p. 8.

3/ U.S. Department of Agriculture, Processing and Marketing Cottonseed Cooperatively, General Report No. 21, Farmer Cooperative Service, April 1955, pp. 56-57.

120 operated all 52 weeks of 1967. The number of the most active weeks required to account for half of annual man-hours was 14 or less in 36 percent of the establishments, 15-20 weeks in 45 percent of the establishments, and 21-28 weeks in the remaining 18 percent of the establishments (Appendix Table G-2). It took 29 weeks or more for almost half of the establishments to use three-fourths of their annual man-hours. In contrast, three establishments used three-fourths of their annual man-hours in 14 weeks or less.

Employment trends--Another measure of seasonality in an industry is the variations in the level of employment. In the cottonseed processing industry, nonsupervisory employment in workweeks, ranked by man-hours, showed a gradual but almost continuous decline. Between the peak week and fourteenth highest week, nonsupervisory employment declined from 7,200 to 5,900, or 18 percent. Nonsupervisory employment was down to 5,000 workers by the twentieth highest week and 1,900 in the lowest week of the year. Average nonsupervisory employment per operating establishment declined from 55 employees in the peak week to 16 in the lowest week.

Workweek	Nonsupervisory employment	
	Total	Average per establishment
Peak week	7,200	55
7th highest week	6,500	49
14th highest week	5,900	45
20th highest week	5,000	38
Lowest week	1,900	16

Multiple shift operations--The use of multiple shifts, when feasible, permits establishments to utilize their processing facilities more fully, thereby enabling them to reduce the length of individual employee workweeks and also the length of the processing period. When premium rates have to be paid for overtime hours, the operation of a second or third shift can result in substantial savings. In the cottonseed processing industry, all but two of the 132 establishments operated multiple shifts at some time during the year (Appendix Table G-3). Well over two-fifths of these establishments operated two or more shifts for 29 or more weeks; less than a sixth of the establishments operated multiple shifts for less than 15 weeks. The extensive use of multiple shifts for relatively long periods indicates that seasonality is not a significant determinant of shift operations in this industry.

The data on nonsupervisory employment and man-hours worked on the first shift provide an indication of the importance of multiple shift operations in this industry. In 1967, over two-fifths of the multiple shift establishments had less than 50 percent of the man-hours worked on the first shift during each of the selected weeks for which separate data were shown--the tenth, fourteenth, and twentieth highest weeks (Appendix Table G-4). The total man-hours used in these establishments accounted

for 44 percent of the industry total in the tenth week and 47 percent in both the fourteenth and twentieth weeks. (Separate data collected for the peak week and seventh highest week were not shown by shift classification to avoid disclosure of data for the two single shift establishments.)

Establishments with less than half of their nonsupervisory employees on the first shift accounted for about two-fifths of all multiple shift establishments operating and a similar proportion of the nonsupervisory employment in the industry in each of the three selected weeks for which separate data were shown (Appendix Table G-5).

Weekly Man-hours

All establishments--Weekly man-hours by weekly hours of work of individual employees in all establishments varied significantly in the five selected weeks for which separate data were collected. The proportion of total weekly man-hours accounted for by employees working over 40 hours decreased from 75 percent in the peak week to 66 percent in the seventh week and then increased to 71 percent in the tenth week (Appendix Table G-6). By the fourteenth highest week, however, the proportion had declined to just over three-fifths and was at approximately that level for the twentieth week.

The most significant change in the distribution of man-hours by hours occurred in the "Over 48 hours" category which declined [illegible] percent of total man-hours in the peak week to 36 percent in the [illegible]nth week and 28 percent in the twentieth week. These declines were [illegible]ally accompanied by increases in the percent of man-hours in the [illegible] and including 48 hours" interval as well as by increases in the [illegible]n of total hours worked by employees working 40 hours or less [illegible].

Selected workweek	Aggregate hours	Percent of hours worked by employees working	
		Over 40 hours	Over 40 and including 48 hours
Peak week	345,000	75	19
7th highest week	299,000	66	23
10th highest week	281,000	71	30
14th highest week	257,000	62	26
20th highest week	210,000	60	32

Shift operation--Almost all of the man-hours were worked [illegible] ments operating multiple shifts (Appendix Table G-[illegible]). Even twentieth week, about nine-tenths of the man-hours were [illegible] b- lishments with more than one shift. Consequently, the dis[illegible]

man-hours in multiple shift establishments in the selected weeks was virtually the same as for all establishments.

Establishment size--Establishments employing 25-99 nonsupervisory employees in the peak workweek accounted for at least three-fourths of the total man-hours in each of the five selected weeks for which separate data were collected. Most of the remaining man-hours were used by establishments which employed 100-249 nonsupervisory employees in the peak workweek. Employees working over 40 hours, especially those working over 48 hours, accounted for much larger proportions of the aggregate man-hours of establishments in the 25-99 employment-size group than in the larger ones. In the peak week, for example, employees working over 48 hours accounted for 65 percent of the man-hours in the 25-99 employment-size group compared with only 17 percent in the 100-249 employment-size group. The disparity persisted in each of the other selected workweeks even when the proportion of man-hours worked in long workweeks (in excess of 48 hours) declined in both employment-size groupings. In the fourteenth highest week, for example, workweeks in excess of 48 hours accounted for 44 percent of total man-hours in the 25-99 employee-size grouping but only 7 percent in the larger establishments (Appendix Table G-9).

Establishment size in peak workweek	Aggregate hours in peak workweek	Percent of hours worked by employees working		
		Over 40 hours	Over 40 and including 48 hours	Over 48 hours
All establishments	345,000	75	19	56
8-24 employees	3,000	86	-	86
25-99 employees	273,000	85	21	65
100 or more employees	69,000	33	15	17

Man-hours in Excess of 40 a Week

In all establishments in the peak week of operation, 71,000 man-hours, or one-fifth of the weekly total, represented hours worked beyond 40 by individual employees (Appendix Table G-10). This compares with 35,000 hours (14 percent) in the fourteenth week and 23,000 (11 percent) in the twentieth week. The average man-hours worked in excess of 40 per employee working over 40 hours ranged from 15.1 hours in the peak week to 11.5 hours in the fourteenth week and 8.7 hours in the twentieth week.

At least seven-tenths of the man-hours in excess of 40 worked in each of the five selected weeks were worked by employees who worked over 48 hours (Appendix Table G-11). Although the 14-week overtime exemption under section 7(d) is limited to 48 hours a week, hours worked in excess of

48 per week accounted for a substantial proportion of the man-hours beyond 40 per week--the FLSA workweek standard for nonexempt workers--half in the peak week, and two-fifths in the fourteenth highest week.

Selected workweek	Man-hours over 40				Man-hours over 48	
	Total		In workweeks over 48 hours			
	Number	Percent	Number	Percent	Number	Percent
Peak week	71,000	100	62,000	87	36,000	51
7th highest week	50,000	100	40,000	80	22,000	44
10th highest week	42,000	100	33,000	79	16,000	38
14th highest week	35,000	100	27,000	77	14,000	40
20th highest week	23,000	100	16,000	70	7,000	30

Overtime Hours at Premium Rates

About 9 percent of the aggregate man-hours worked in the peak week, the seventh and tenth highest weeks were paid for at premium rates of not less than one and one-half times the regular rate (Appendix Table G-12). The proportion declined to 7 percent in the fourteenth week and 6 percent in the twentieth week. Virtually all of the 31,000 man-hours paid for at premium rates in the peak week were worked by employees who worked over 40 hours. (Premium pay for employees working 40 hours or less may have been due to provisions for daily overtime in union contracts.) In the other four selected weeks, all premium payments went to employees who worked over 40 hours.

In workweeks of more than 40 hours up to and including 48 hours, the proportion of man-hours over 40 paid for at premium rates ranged from 38 percent in the peak week to 67 percent in the twentieth highest week. In the seventh, tenth, and fourteenth weeks, the proportion was 56 percent. (The proportions may include some premium pay for hours other than those in excess of 40 per week.) These ratios are very large considering the fact that establishments are most likely to use the 14-week overtime exemption during the peak 14 weeks. It would appear that some establishment may not have used the partial overtime exemption currently available under section 7(d).

Selected workweek	Man-hours worked in workweeks of over 40 and including 48 hours			
	Total	Over 40 hours	Paid for at premium rates	
			Number	Percent hours over 40
Peak week	67,000	8,000	3,000	38
7th highest week	70,000	9,000	5,000	56
10th highest week	83,000	9,000	5,000	56
14th highest week	67,000	9,000	5,000	56
20th highest week	68,000	6,000	4,000	67

In workweeks exceeding 48 hours, the proportion of man-hours over 40 paid for at premium rates was 45 percent in the peak week, 58 percent in the seventh and tenth highest weeks, and 48 percent in the fourteenth week. Since the overtime exemption available to the industry is limited to 48 hours a week, all hours in excess of 48 are required to be compensated for at rates of at least time and one-half the employee's regular rate of pay. As shown below, this appeared to be the case in all workweeks except the peak week and the fourteenth highest week. The existence of straight-time weekly hours in excess of 48 in the peak week may be attributable to employment in activities qualifying for an unlimited overtime exemption as would be the case for establishments in which the peak week occurred in January 1967, before the effective date of the 1966 amendments, or it may indicate noncompliance with the provisions of the Fair Labor Standards Act.

	Man-hours worked in workweeks of over 48 hours				
				Paid for at premium rates	
Selected workweek	Total	Over 40 hours	Over 48 hours	Number	Percent of hours over 40
Peak week	191,000	62,000	36,000	28,000	45
7th highest week	128,000	40,000	22,000	23,000	58
10th highest week	117,000	33,000	16,000	19,000	58
14th highest week	91,000	27,000	14,000	13,000	48
20th highest week	59,000	16,000	7,000	9,000	56

Weekly Hours of Work

In the peak workweek, 45 percent of the nonsupervisory employees worked over 48 hours, 20 percent worked over 40 but no more than 48 hours and 35 percent worked 40 hours or less. During the workweeks studied, hours of work generally paralleled the pattern noted for aggregate hours, with workweeks of over 48 hours decreasing in importance as you get further from the peak week. By the fourteenth week, the proportion of employees working over 48 hours had declined to 27 percent and almost half of all employees worked 40 hours or less.

	Percent of employees working		
Selected workweek	40 hours or less	Over 40 and including 48 hours	Over 48 hours
Peak week	35	20	45
7th highest week	43	23	34
10th highest week	37	30	34
14th highest week	48	25	27
20th highest week	48	31	21

Relationship Between Daily and Weekly Hours of Work

The proportions of employees working in excess of the 10-hour daily overtime standard in the weeks studied were substantially less than the proportions working in excess of the 48-hour weekly limitation under section 7(d). Less than a fourth of the employees worked over 10 hours in even one day in the peak week and only about a sixth of the employees in the seventh, tenth, and fourteenth highest weeks worked long days (Appendix Tables G-14 and G-15). A very large proportion of the employees worked eight or fewer hours each day of the workweek--half in the peak week and three-fifths in each of the other selected weeks studied.

	Percent of nonsupervisory employees working				
		Over 8 at least one day but never over 10	Over 10 hours at least one day	Over 48 hours a week	
Selected workweek	8 or fewer hours every day			Total	Over 10 hours at least one day
Peak week	51	26	23	45	20
7th highest week	60	22	18	34	15
10th highest week	61	22	17	34	13
14th highest week	60	23	17	27	13
20th highest week	60	27	13	21	9

The vast majority of employees working over 10 hours a day also worked in excess of 48 hours a week--9 out of 10 in the peak week and 7 out of 10 in the fourteenth highest week. However, this group of employees working long days accounted for less than half of the employees working long workweeks--over 48 hours (Appendix Tables G-16 and G-17). For example, of the employees working over 48 hours in the peak week, over a fourth worked eight or fewer hours every day and most did not work in excess of ten hours on any day.

Collective Bargaining Agreements

Data collected on the extent of collective bargaining reveal that 46 of the 132 establishments had union agreements (Appendix Table 0-1). These establishments employed 3,300 workers in the peak week of 1967, of whom 2,300 were covered by the union agreements. The agreements in all 46 establishments covered plant workers and in three-fourths of the establishments maintenance workers as well (Appendix Table 0-2). Of the covered employees, almost two-thirds were employed in establishments with agreements providing for premium overtime pay for hours over 40 a week and eight a day, about a seventh were in establishments with a 40-hour standard, and about a fifth in establishments with agreements that contained no overtime premium pay provisions (Appendix Table G-18).

Collective bargaining agreements generally provide for premium overtime pay after standard weekly and/or daily hours. However, 16 of the 46 establishments with agreements had no such standards. Also, in 2 of the 30 establishments having agreements with overtime provisions, the agreements contained a waiver of premium pay for a certain number of weeks (Appendix Table G-19).

Milk and Cream Processing and Handling

I. All Processing and Handling

Introduction

The survey, conducted for the Wage and Hour and Public Contracts Divisions by the U.S. Department of Agriculture, covered establishments primarily engaged in the processing or handling of raw milk and cream except those primarily engaged in the manufacture of ice cream and frozen desserts. Establishments in the dairy products industry may qualify for a 14-week partial overtime exemption under section 7(d) of the Fair Labor Standards Act. During exempt weeks, however, employees must be paid at not less than time and one-half their regular rate for all hours over 10 per day or 48 per week.

The survey disclosed a total of 4,936 establishments employing 120,300 workers during the peak workweek in each establishment in 1967. As shown below, over three-fifths of the establishments were primarily fluid milk processors and they accounted for seven-tenths of the employment and man-hours in the industry. Manufacturers of creamery butter, natural cheese, condensed milk and evaporated milk ranked second with over a fourth of the establishments and a fifth of the employment and man-hours. Plants producing special dairy products and receiving stations comprised the smallest segments of the industry.

Primary operation	Peak workweek		
	Establishments Percent	Nonsupervisory employees Percent	Man-hours Percent
Total	100	100	100
Processing fluid milk	64	70	69
Manufacture of creamery butter, natural cheese, condensed milk and evaporated milk	27	21	21
Manufacture of special dairy products	2	4	4
Receiving station only	7	5	5

Operations and Technology

Milk and cream processing is a year-round activity. Fluctuations in the inflow of raw milk is greatest in the spring months due to the lush grazing pastures for the herds as against the dry pastures during the fall and winter months. Due to improved breeding and automated methods of feeding, milk production is becoming less seasonal. 1/

1/ U.S. Department of Labor, Bureau of Labor Statistics, Technological Trends in Major American Industries, Bulletin 1474, February 1966, p. 122.

Processors and producers have long been interested in a more balanced production throughout the year. Various pricing incentives have been devised to encourage a more even inflow of milk deliveries or to obtain a flow more in conformity with market demands. Some nonprice inducements, such as hauling allowances, discount farm supply prices, payroll advances, and farm equipment loans, have been instituted as incentives by milk producers to compete for available raw product during the slack production period. Other measures to aid in the control of the inflow of raw milk involve processor cooperatives and the State and Federal governments. Processor cooperatives perform a range of functions which include assembling producer's milk, equalizing supplies among handlers, and processing and distributing milk. 1/ Various States and the Federal government have enacted marketing order programs which are designed to promote and maintain orderly marketing conditions with respect to the sale of milk by dairy farmers to regular processors. 2/

Milk processors also seek ways to offset slowdowns in operation and maintain profits by broadening and diversifying their products. Multiple product manufacturing provides the flexibility needed in order to shift from one product to another in adjusting for seasonal changes in input and output. For the most part, milk processors consider alternative product outlets for whole milk such as the processing of butter, cheese, nonfat dry milk, and numerous by-products.

In recent years, many large milk product processors have diversified their production into nondairy and nonfood manufacturing. With the advent of filled milk and imitations, milk processors have been able to even out their operations over a longer period of the year by substituting these products. Any increase in consumer acceptance and easing of legal restrictions concerning the selling and processing of imitation and filled milk will tend to diminish seasonal fluctuations in the milk industry. 3/

Over the years, technological improvements have greatly reduced man-hour requirements in the milk and cream processing industry. Technological changes affecting operations apply most effectively to material handling, product flow control, cleaning procedures at the plant, and new preserving methods.

Plants are using automatic handling equipment and improved plant layout to reduce rehandling labor. New developments in materials-handling

1/ U.S. Department of Agriculture, "Dairy Cooperatives," Farm Cooperative Service, 1965 (Revised) pp. 110-111.

2/ U.S. Department of Agriculture, Marketing Research Report #701, 1965, p. 3.

3/ American Dairy Review, May 1967 and March 1968.

equipment include automatic bottle and carton casers and equipment which automatically stacks cases onto pallets for forklift truck or conveyor handling. Multiple handlings are eliminated by conveyor patterns which permit continuous flow of product from filling lines through cold storage. 1/

The use of bulk tank trucks to pick up milk from refrigerated bulk farm tanks reduces the labor requirements in the receiving operation by about 75 percent in small plants and somewhat less in larger plants. 2/

Most processors now control the flow of raw milk through various tanks, pipes and processing equipment through the use of remote switches located on a central control panel handled by a single operator who monitors the processing by means of instruments. Semiautomatic, clean-in-place (CIP) equipment is being installed in large volume operations to automatically circulate cleaning solutions through pipes and valves without dismantling them. Dismantling and cleaning work account for a sizeable percent of all man-hours in a manually-cleaned plant. 3/

Technological improvements also serve to lessen the perishability of the raw product delivered, thus reducing the need for immediate processing. Although milk is usually delivered to the processors on a daily basis, it must be cooled promptly at the dairy farm. Milk cooling equipment, such as bulk storage tanks, have been installed on farms to lessen the perishability of the fresh milk and prolong the allowable time span between production and processing from a few hours to a few days. For the larger processors, a longer interval is possible through the use of vacuum hauling tanks connected directly to the farm milking system. The milk is then hauled from the farm directly to the processor in these vacuum sealed tanks. 4/

The ultimate consumer use is the major determinant of the allowable time interval between delivery and processing. Milk for fluid consumption must be processed within 1 to 3 days. Raw milk to be processed into dry milk, butter, cheese, etc., may be held for longer periods without loss of quality. 5/ New techniques for preserving fluid milk include: (1) a new process which sterilizes milk and reduces or eliminates the need for refrigeration and increases the shelf-life to six months, and (2) frozen concentrated milk, which is still in the early stages of development.

1/ American Dairy Review, July 1967, p. 105.

2/ Technological Trends in Major American Industries, op, cit., p. 121.

3/ Ibid., p. 120.

4/ U.S. Department of Agriculture, Equipment for Cooling Milk on the Farm, Farmer's Bulletin No. 2175, 1961, p. 3.

5/ Report of the National Commission on Food Marketing, June 1966, p. 2.

Seasonality of Operation

The survey of milk and cream processors and handlers provided information on several measures or indicators of seasonality including the length of active season, short-term employment trends, and the extent of multiple shift operations.

Length of active season--During 1967, nonsupervisory employees in the milk and cream processing and handling industry worked nearly a quarter of a billion man-hours (Appendix Table H-2). A relative lack of seasonality of operation was evident when the 52 workweeks were ranked in descending order on the basis of aggregate hours worked in each week. For example, the proportion of the total man-hours in 1967 accounted for by the 14 weeks of lowest activity was almost as large as that for the 14 weeks of highest activity--25 percent compared with 29 percent. Ninety-six percent of the 4,936 establishments in the industry operated with nonsupervisory employees for 52 weeks of the year and the distribution of annual man-hours by workweeks was fairly uniform throughout 1967. About half the year--from 21 to 28 weeks--was required to use 50 percent of the anuual man-hours in all but 4 percent of the establishments (Appendix Table H-3). Only 57 establishments, or 1 percent, used three-fourths of their annual man-hours in 28 weeks or less.

Employment trends--The gradual decline in employment from the week of peak operation through the lowest week also reflects the absence of pronounced seasonal fluctuation. There were 120,300 nonsupervisory employees on the payrolls in the peak week of operation compared to 100,700 during the lowest week of operation--a difference of 16 percent. Average employment per operating establishment was also fairly stable, declining from 24 in the peak week to 21 in the lowest week.

Workweek	Nonsupervisory employment	
	Total	Average per establishment
Peak week	120,300	24
7th highest week	118,000	24
14th highest week	115,100	23
20th highest week	113,600	23
Lowest week	100,700	21

Multiple shift operations--Just over 500 establishments, or a tenth of the total, operated with more than one shift during 1967 (Appendix Table H-4). Nearly all mutiple shift establishments operated the additional shifts for 29 or more weeks indicating that extra shifts were not added because of temporary seasonal increases in production, but were probably a year-round practice in some establishments. Establishments operating multiple shifts accounted for about three-tenths of the employment in the selected

weeks for which separate data were collected--the peak week, seventh, tenth, fourteenth, and twentieth highest weeks (Appendix Table H-8). Over three-fifths of the employees in multiple shift establishments worked on the first shift and they accounted for the same proportion of the man-hours in those establishments.

Weekly Man-hours

Data collected for the selected workweeks permit a comparison of the variations in the distribution of aggregate man-hours by weekly hours of work between weeks in which the partial 14-week overtime exemption was most likely to have been used, and a week in which the exemption was probably not utilized (twentieth most active week).

All establishments--With the exception of the peak week, the differences among the selected workweeks in the distribution of man-hours by weekly hours of work of individual employees were small. In the peak week, 68 percent of total man-hours were accounted for by employees working over 40 hours (the Fair Labor Standards Act workweek standard for nonexempt workers) (Appendix Table H-7). In all of the other selected weeks for which separate data were collected, about three-fifths of the aggregate hours were worked by employees working over 40 hours. Employees working over 48 hours--the point beyond which premium overtime pay is required even in weeks for which the exemption under section 7(d) is claimed--accounted for 31 percent of the man-hours in the peak week and from 21 to 24 percent in the other selected weeks.

Selected workweek	Aggregate hours	Percent of hours worked by employees working		
		Over 40 hours	Over 40 and including 48 hours	Over 48 hours
Peak week	5,251,000	68	38	31
7th highest week	4,979,000	62	37	24
10th highest week	4,882,000	61	38	23
14th highest week	4,784,000	59	37	23
20th highest week	4,660,000	62	41	21

Shift operation--Over three-tenths of the man-hours in each of the selected weeks were worked in establishments operating multiple shifts. Had additional work shifts been added to reduce the proportion of establishment man-hours subject to overtime premium pay, it could be expected that the proportion of weekly hours accounted for by employees working over 48 hours during the highest 14 weeks would be lower in multiple shift establishments. However, in all but one of the selected weeks studied, the proportion of aggregate hours worked by such employees was the same or higher in multiple shift establishments than in single shift

establishments giving further support to the observation noted earlier that additional shifts were probably related to factors other than seasonality of production.

Selected workweek	Percent of hours worked by employees working over 48 hours	
	Single shift establishments	Multiple shift establishments
Peak week	29	33
7th highest week	25	24
10th highest week	23	23
14th highest week	22	24
20th highest week	21	22

Establishment size--Almost half of the aggregate hours worked in the peak week were worked in the 24 percent of establishments which employed 25-99 employees in the peak week. Small establishments were much more numerous, but they accounted for less than a fourth of the man-hours. Conversely, only 6 percent of the establishments had 100 or more workers, but they accounted for 30 percent of the aggregate hours in the peak week.

Establishments with 8-24 employees had a larger proportion of man-hours worked by employees working over 48 hours in the peak week than establishments in the other employment-size groups. This relationship persisted in each of the selected workweeks even when the proportion of man-hours worked in long workweeks (over 48 hours) declined in all employment-size groupings. For example, in the twentieth week, workweeks in excess of 48 hours accounted for 25 and 28 percent, respectively, of total man-hours in the two smaller employment-size groups, and for 20 percent in the two larger employment-size groups (Appendix Table H-10).

Establishment size in peak workweek	Aggregate hours in peak workweek	Percent of hours worked by employees working		
		Over 40 hours	Over 40 and including 48 hours	Over 48 hours
All establishments	5,251,000	68	38	31
1-7 employees	302,000	57	27	30
8-24 employees	902,000	66	27	39
25-99 employees	2,459,000	73	46	27
100 or more employees	1,586,000	66	34	32

Man-hours in Excess of 40 a Week

Thirteen percent of total man-hours worked in the peak week represented hours worked beyond 40 by individual employees (Appendix Table H-11).

During the seventh, tenth, and fourteenth weeks, man-hours beyond 40 represented 10 percent of all man-hours and the proportion had declined only 1 percentage point by the twentieth highest week. Hours worked in excess of 40 per employee working over 40 hours averaged 9.2 hours in the peak week, about 8 hours in the seventh, tenth, and fourteenth weeks, and 6.7 hours in the twentieth week.

Seven-tenths of all man-hours in excess of 40 in the peak week, compared to approximately two-thirds in the seventh, tenth, and fourteenth weeks, were worked by employees working more than 48 hours a week. Although the 14-week overtime exemption under section 7(d) is limited to 48 hours a week, hours worked in excess of 48 per week accounted for a substantial proportion of the man-hours beyond 40 per week (the Fair Labor Standards Act workweek standard for nonexempt workers)--three-eighths in the peak week, and a fourth in the twentieth week.

	Man-hours over 40					
	Total		In workweeks over 48 hours		Man-hours over 48	
Selected workweek	Number	Percent	Number	Percent	Number	Percent
Peak week	673,000	100	479,000	71	254,000	38
7th highest week	512,000	100	341,000	67	167,000	33
10th highest week	469,000	100	304,000	65	139,000	30
14th highest week	457,000	100	292,000	64	134,000	29
20th highest week	415,000	100	256,000	62	109,000	26

Overtime Hours at Premium Rates

Ten percent of aggregate hours worked in the peak week were paid for at premium rates of not less than one and one-half times the regular rate (Appendix Table H-13). The proportion had dropped 1 percentage point by the seventh highest week and another point by the fourteenth week. In the twentieth week, 7 percent of all hours worked were paid for at premium rates.

In workweeks of over 40 and including 48 hours, the proportion of man-hours over 40 paid for at premium rates in the peak week through the twentieth week were consistently high, ranging from 58 to 72 percent. (The proportions may include some premium pay for hours other than those in excess of 40 a week.) It appears that many establishments may not have used the partial overtime exemption currently available to the industry under section 7(d).

	Man-hours worked in workweeks of over 40 and including 48 hours			
			Paid for at premium rates	
Selected workweek	Total	Over 40 hours	Number	Percent of hours over 40
Peak week	1,893,000	194,000	113,000	58
7th highest week	1,848,000	171,000	118,000	69
10th highest week	1,832,000	165,000	118,000	72
14th highest week	1,745,000	165,000	114,000	69
20th highest week	1,886,000	159,000	109,000	69

Since the overtime exemption is limited to 48 hours a week, hours in excess of 48 are required to be compensated at rates of not less than time and one-half the employee's regular rate of pay. In workweeks exceeding 48 hours, the number of man-hours paid for at premium rates greatly exceeded the number of man-hours in excess of 48 in each of the selected weeks studied. In fact, at least 83 percent of all hours worked beyond 40 per week by employees working over 48 hours were paid for at premium rates in each of the selected workweeks.

	Man-hours worked in workweeks of over 48 hours				
				Paid for at premium rates	
Selected workweek	Total	Over 40 hours	Over 48 hours	Number	Percent of hours over 40
Peak week	1,601,000	479,000	254,000	397,000	83
7th highest week	1,214,000	341,000	167,000	302,000	89
10th highest week	1,127,000	304,000	139,000	259,000	85
14th highest week	1,079,000	292,000	134,000	253,000	87
20th highest week	993,000	256,000	109,000	220,000	86

The apparent underutilization of the partial overtime exemption available to the industry may be attributable to the various labor-management agreements covering significant proportions of the work force and the payment of overtime to maintain a competitive position in the labor market.

Weekly Hours of Work

In the peak workweek, 23 percent of the nonsupervisory employees worked beyond 48 hours, 37 percent worked over 40 but not more than 48 hours, and 39 percent worked 40 hours or less (Appendix Table H-14). There was a sizeable decrease in the proportion of workers on long workweeks (over 48 hours) and a corresponding increase in the proportion of employees working 40 hours or less between the peak week and the seventh week. Thereafter, the distribution did not vary significantly from one selected week to the next.

	Percent of employees working		
Selected workweek	40 hours or less	Over 40 and including 48 hours	Over 48 hours
Peak week	39	37	23
7th highest week	46	36	19
10th highest week	47	36	18
14th highest week	49	34	17
20th highest week	46	38	16

Relationship Between Daily and Weekly Hours of Work

The proportion of employees working in excess of the 10-hour daily overtime standard (which is in effect during the 14-week partial overtime

exemption period) at least one day in the weeks studied was consistently less than the proportion working in excess of the 48-hour weekly limitation provided under section 7(d). Seventeen percent of the work force worked more than 10 hours at least one day during the peak week compared to 12 percent during the twentieth week--a drop of 5 percentage points, about the same change as in the proportion of employees working more than 48 hours (Appendix Table H-15 to H-18). A large proportion of the employees worked eight hours or less every day of the workweek--slightly less than half in the peak week and somewhat more than half in each of the other selected weeks studied.

	Percent of nonsupervisory employees working				
		Over 8 at least one day but never over 10	Over 10 hours at least one day	Over 48 hours a week	
Selected workweek	8 or fewer hours every day			Total	Over 10 hours at least one day
Peak week	46	37	17	23	14
7th highest week	53	33	15	19	10
10th highest week	55	32	13	18	10
14th highest week	54	34	13	17	9
20th highest week	53	35	12	16	9

In each of the selected weeks, at least 7 out of every 10 employees who worked more than 10 hours at least one day also worked more than 48 hours. Employees with such long daily and weekly hours accounted for 60 percent of all employees working more than 48 hours during the peak week and over half in each of the other selected weeks.

Collective Bargaining Agreements

Collective bargaining agreements were in effect in a fourth of the 4,936 establishments in the industry (Appendix Table O-1). However, these 1,263 establishments accounted for over half of the industry's nonsupervisory work force in the peak week of 1967. Over four-fifths of the 1,574 labor-management contracts covered plant workers and nearly half of them covered maintenance workers (Appendix Table O-2). Clerical workers were covered by 22 percent of the contracts and other employees by 27 percent.

Of the 53,100 employees covered by collective bargaining agreements, nine-tenths were employed in establishments with agreements providing premium pay either after eight hours a day, 40 hours a week, or both (Appendix Table H-19). Less than a tenth of the covered employees were in establishments with collective bargaining agreements that contained no specific provisions for overtime premium pay. None of the 1,116 establishments with contracts containing premium overtime pay provisions permitted the waiver of premium pay during any portion of the year (Appendix Table H-20).

II. Fluid Milk Processing

During the peak week in 1967, 83,600 workers, or nearly seven-tenths of the 120,300 nonsupervisory employees in the milk and cream processing and handling industry, were employed in plants primarily engaged in the processing of fluid milk. Since this is the largest segment of the milk and cream processing industry, a complete set of reference tables were developed relating to employment in fluid milk processing plants to determine the extent of differences or similarities from the industry as a whole.

Seasonality of Operation

Seven-tenths of the quarter-billion man-hours used in the milk and cream industry in 1967 represented hours worked in fluid milk plants. The proportion of man-hours worked in fluid milk plants in the highest 14 weeks and the lowest 14 weeks of operation were 29 percent and 25 percent, respectively--identical with that noted for the whole industry and indicative of the relative lack of seasonality in both (Appendix Table I-1). Employment changes from the peak week to the lowest week closely paralleled the pattern noted for the industry as did average employment per establishment. There were relatively fewer fluid milk plants operating multiple shifts (8 percent compared to 10 percent), and all multiple shift establishments operated their additional shifts for 29 or more weeks (Appendix Table I-3).

Weekly Man-hours

All establishments--The distribution of aggregate man-hours by weekly hours of work in fluid milk plants was much like the weekly hours pattern noted for milk and cream processors. In the peak week, 64 percent of the man-hours were accounted for by employees working more than 40 hours and 29 percent by employees working more than 48 hours (Appendix Table I-6). In the other selected weeks, nearly three-fifths of the aggregate hours were worked by employees working over 40 hours and from 21 to 24 percent were accounted for by employees working over 48 hours.

Shift operation--The observation that the operation of two or more shifts in the milk and cream processing industry did not appear to be related to either the weekly hours limitation under section 7(d) or seasonality of production becomes even more conclusive in fluid milk plants. The proportion of man-hours worked by employees working over 48 hours was consistently greater in multiple shift establishments than in those operating only one shift, 41 percent and 25 percent, respectively, in the peak week and 31 percent and 18 percent, respectively, in the twentieth week (Appendix Table I-7).

Establishment size--The distributions of aggregate hours, employees, and establishments by employment-size groups in the fluid milk segment is

nearly identical with the milk and cream processing and handling industry as a whole.

Man-hours in Excess of 40 a Week

Thirteen percent of all man-hours worked in the peak week represented hours worked beyond 40 by individual employees (Appendix Table I-11). During the seventh week the ratio was 10 percent; it dropped to 9 percent in the tenth and fourteenth weeks and to 8 percent by the twentieth week. These ratios are almost identical with those for the parent industry as are the other characteristics noted for man-hours in excess of 40 per week.

Overtime Hours at Premium Rates

A slightly smaller proportion of the aggregate hours worked during the peak week in fluid milk plants were paid for at premium rates than in the milk and cream industry overall--9 percent compared to 10 percent (Appendix Table I-12). Nearly all of the difference can be traced to the far greater prevalence of the practice of paying premium overtime rates in the other segments of the milk and cream processing and handling industry than in the fluid milk processing segment for hours over 40 per week in the "Over 40 and including 48 hours" category.

	Percent of man-hours over 40 paid for at premium rates in workweeks of over 40 and including 48 hours		
Selected workweek	All establishments	Fluid milk processing establishments	All other establishments
Peak week	58	47	89
7th highest week	69	61	85
10th highest week	72	62	91
14th highest week	69	62	84
20th highest week	69	59	88

In workweeks of over 48 hours, the differences in the proportion of hours over 40 paid for at premium rates narrowed considerably, and the higher ratios were for fluid milk plants--a reversal of the relationship in the 40-48 hour category noted above.

	Percent of man-hours over 40 paid for at premium rates in workweeks of over 48 hours		
Selected workweek	All establishments	Fluid milk processing establishments	All other establishments
Peak week	83	83	83
7th highest week	89	91	84
10th highest week	85	87	82
14th highest week	87	89	83
20th highest week	86	88	82

Notwithstanding the fact that the pattern of overtime premium pay provisions in labor-management agreements in fluid milk plants was similar to that of the entire industry, fluid milk processors were apparently able to make greater use of the partial overtime exemption currently available under section 7(d) than other types of processors in the industry.

Weekly Hours of Work

In the peak week, 22 percent of the employees in fluid milk processing establishments worked more than 48 hours while the figure for the whole industry was 23 percent (Appendix Table I-13). The proportion of employees working 40 hours or less was slightly greater in fluid milk establishments than in all establishments, 43 percent and 39 percent, respectively. Variations in the distributions of fluid milk processing employees by weekly hours worked through the twentieth highest week paralleled the changes noted for the industry as a whole.

Relationship Between Daily and Weekly Hours of Work

The relationship between daily and weekly hours of work in fluid milk processing establishments was similar to that noted for the industry as a whole (Appendix Tables I-14 to I-17).

There were slightly greater proportions of employees in fluid milk processing establishments working eight hours or less every day in the selected weeks than in all establishments which corresponded to the slightly larger proportion of fluid milk processing employees who worked 40 hours or less in the selected weeks, as noted above.

Collective Bargaining Agreements

Labor-management contract coverage in fluid milk establishments was about the same as for the industry as a whole. For example, 44 percent of the employees in the fluid milk segment were covered by collective bargaining agreements, the same proportion as in the industry as a whole (Appendix Table O-1).

Fresh Fruit and Vegetable Processing and Handling

Introduction

The survey of the fresh fruit and vegetable industry covered establishments primarily engaged in the processing of fresh fruits and vegetables and establishments (other than retailers and city wholesalers or jobbers engaged in distributing to retailers) engaged in fresh fruit and vegetable handling. In determining whether processing of fresh fruits and vegetables was an establishment's primary activity, all operations necessary or incidental to the first processing of fruits and vegetables in their raw or natural state were included; operations connected with other products or the further processing of fruits and vegetables after they had been frozen (longer than 24 hours) canned, preserved, dehydrated, or otherwise changed from their raw or natural state were excluded. Fresh fruit and vegetable handling includes such operations as assembling from growers, loading, transporting, unloading, weighing, counting, cleaning, washing, waxing, polishing, grading, sizing, sorting, coloring, cooling, wrapping, packing, and storing.

Establishments in the fresh fruit and vegetable processing industry may qualify for a total of 20 weeks of partial overtime exemption under the Fair Labor Standards Act--10 weeks under section 7(c) with time and one-half pay required after 50 hours; and 10 weeks under 7(d) with time and one-half pay after 48 hours. In both cases, time and one-half pay is required for daily hours over 10 in the exempt weeks providing the employee works in excess of 40 hours. In addition, section 13(b)(16) of the Act provides for a year-round unlimited exemption from the 40 hours standard of the Act for--

> "any employee engaged (A) in the transportation and preparation for transportation of fruits or vegetables, whether or not performed by the farmer, from the farm to a place of first processing or first marketing within the same State, or (B) in transportation, whether or not performed by the farmer, between the farm and any point within the same State of persons employed or to be employed in the harvesting of fruits or vegetables."

The survey, conducted for the Divisions by the Department of Agriculture, covered 4,357 establishments employing 383,700 nonsupervisory workers during the peak workweek of each establishment in 1968 (Table 10). More

than half of these employees were concentrated in the fresh noncitrus fruits and vegetables canning and drying industry which accounted for slightly over one-fourth of all establishments. By contrast, the fresh fruits and vegetables handling industry with two-thirds of the establishments accounted for a little over one-third of all employees in the peak week. The fresh noncitrus fruits and vegetables freezing industry and the fresh citrus fruit processing industry were both markedly smaller.

Fresh fruit and vegetable industries	Percent of	
	Establishments	Employees (peak week)
All industries	100	100
Canning, drying, and other processing, except freezing	28	53
Freezing	4	7
Processing of fresh citrus fruits	1	5
Handling	67	35

On a regional basis, 39 percent of the 204,100 workers in the peak week in the noncitrus canning and drying industry were employed in the West (28 percent in California and Arizona), 36 percent in the North Central, 18 percent in the South (3 percent in Florida and Texas) and only 7 percent in the Northeast.

Of the 134,500 workers in the fresh fruits and vegetables handling industry, 55 percent were employed in the West (34 percent in California and Arizona), 38 percent in the South (23 percent in Florida and Texas), 4 percent in the North Central, and 2 percent in the Northeast.

Peak week employment of 27,000 in the fresh noncitrus fruits and vegetables freezing industry was also concentrated in the West which accounted for 43 percent of the workers followed by the South with 26 percent and the North Central and Northeast with 17 and 14 percent, respectively. On the other hand, nine-tenths of the 18,100 peak week work force in the fresh citrus fruit processing industry was located in the Florida-Texas area and the remainder in the California-Arizona area.

Operations

Due to the perishability of fresh fruits and vegetables, processing usually coincides with the harvesting season. Consequently, the geographic area, climatic conditions, and technological advances in producing, harvesting, handling, and transporting greatly influence the length of the processing season.

Mechanization has greatly influenced the increase in the use of fruits and vegetables for processing. Moreover, this increase appears to be a contributing factor in the trend toward concentration and specialization in the growing of fruits and vegetables. As a result, processing plants have tended to locate in areas of relatively dense fruit and vegetable production. 1/

The bulk of fresh fruits and vegetables available for processing is grown within limited areas. In 1967, fruit production was concentrated in seven States with California having the highest proportion of total U. S. production followed by Florida. Vegetables for processing were principally produced in the Western and North Central regions with California also ranking first as a vegetable supply source for processors. 2/

The growing of fresh fruits and vegetables is essentially seasonal in nature. In addition to the limitations imposed by the biological cycles of plant growth, unpredictable changes in the weather often limit the control over the seasonality of the crop. Favorable weather may prolong the harvest time and spread out product delivery to the processors. For example, the 1967 tomato crop harvest in the major producing areas of the Midwest was extended due to the warm fall weather. 3/ This extension resulted in a longer processing period for tomatoes in these areas. On the other hand, unseasonably low temperatures often shortens the fruit and vegetable harvest season which in turn results in a concentration of raw products for processing.

Despite the lack of control over natural forces, various techniques have been implemented, mainly through processor-grower contracts, to lengthen the processing season or stabilize product delivery. Recent estimates show that about 90 percent of fresh vegetables for canning and nearly all fresh fruits for processing were grown under processor-grower contracts. 4/

1/ U. S. Department of Labor, Farm Labor Developments, Manpower Administration, March 1969, p. 17.

2/ U. S. Bureau of Census, Statistical Abstract of the United States, 1968, p. 630

3/ U. S. Department of Agriculture, Vegetables for Commercial Processing, Consumer Marketing Service, February 1968, p. 36.

4/ The Farm Index, December 1968, p. 4

There are considerable regional differences in the practices for procuring raw products through contracts--particularly between the Pacific and Southeast region. According to a recent study, 82 percent of raw products supplies of canners were obtained by contract in the Pacific region, whereas only 13 percent were obtained in this manner in the Southeast region. In the freezing industry, processor-grower contracts were particularly important for both the Northeast and Pacific regions, supplying 86 and 93 percent of the raw products, respectively. 1/

The processor-grower contracts usually specify the time for planting, the crop variety and acreage to be planted. Some contracts permit the processor to specify the precise time for harvesting and delivery. This is important in the processing of certain highly perishable commodities. In the case of peas for canning, for example, the loss may be as high as 30 percent if the crop is harvested 4 days before the ideal maturity, while 5 days after the peak of maturity the peas may be useless to the processor. 2/

There are a number of other methods which processors use to control fresh product delivery and extend their processing season. Some lease land and produce the vegetables needed for processing. Some processors often obtain supplies from geographic areas whose raw products have different maturing dates. For example, some plants in the Southeast operate year-round, but not entirely on locally grown vegetables. Thus, 24 percent of green beans and most of the Irish potatoes used in Southeastern plants in 1960 were obtained from a distance of 200 miles or more. 3/ The use of early and late maturing varieties of fresh fruits and vegetables and multiple product lines also serve to extend the processing season and maximize plant utilization.

1/ Harris, Marshall, and Dean T. Massey, Vertical Coordination via Contract Farming, Department of Agriculture, ERS Miscellaneous Publication, No. 1073, March 1968, p. 10.

2/ National Commission of Food Marketing, Organization and Competition - The Fruit and Vegetable Industry, Technological Study No. 4, June 1966, pp. 186 and 220.

3/ Department of Agriculture, The Southeastern Vegetable Processing Industry: Raw Product Procurement, 1960, ERS, Report No. 560, August 1962, pp. 1 and 5.

Efforts to store fresh fruits and vegetables and thereby reduce the urgency of processing have met with varying degrees of success. For example, peas, lima beans, and sweet corn can be retained acceptably for 24 hours after picking if cold stored, but only 8 hours if not refrigerated. For asparagus and green beans, the maximum storage time under refrigeration is one week. Tomatoes cannot be held in cold storage for more than a few days, while apples and potatoes can be successfully stored for 6 to 10 months. 1/

Techniques other than cooling have been used to help control the quality life of the raw product or stabilize the flow of raw materials to the processors. Thus, chemicals have proven to be effective in controlling post-harvest decay and checking the ripening rate of fruits and wax emulsions and other protective treatments have been used to lengthen the storage life of potatoes and other tuber crops. 2/

Some canners reduce the perishability problem by immediately processing the raw product in bulk form for reprocessing at a later date. For example, tomatoes and highly perishable fruits may be processed immediately after harvesting into large bulk concentrates or frozen to be reprocessed into a variety of products later. Many deciduous fruits and berries are frozen and held for later processing into jams, jellies, etc. 3/ On some perishable commodities such as peas, corn, green beans, etc., little or no post harvest control of perishability is exercised since such products must be processed in a matter of a few hours. 4/

Technology

Mechanized harvesting of fresh fruits and vegetables shortens the harvest season and tends to intensify raw product delivery to processors during peak periods. Technological developments in recent years have resulted in a continuous increase in the use of harvesting machinery. Shakers, diggers, and other types of equipment are now being used in the harvesting of crops such as grapes, tomatoes, pears, olives, cucumbers, cherries, asparagus, and peaches. 5/ Vegetables which have been machine harvested for some time include green beans, lima beans, beets, green peas, spinach, potatoes, onions, and corn.

1/ Hearings, Minimum Wage and Hours Amendments, U.S. Congress, House, General Subcommittee on Labor, 89th Congress, 1965.

2/ California Farmer, April 1, 1967, p. 45.

3/ The Farm Index, April 1968, pp. 20 and 21.

4/ U.S. Department of Labor, Handling and Processing of Agricultural Products, February 1962, p. 41.

5/ The International Teamster, September 1967, p. 29.

The shift from hand harvesting to machine harvesting for any fruit or vegetable can occur in a relatively short period of time. For example, the harvesting of tomatoes for processing in California was 5 percent mechanized in 1964, 25 percent in 1965, 66 percent in 1966, and 80 percent in 1967. 1/

Crops which are mechanically harvested often require more urgent processing than those that are hand-harvested. For most perishable fresh fruits and vegetables, immediate processing is required after mechanical harvesting due to the threat of rapid deterioration resulting from bruises caused by vigorous handling.

Innovations in bulk handling of raw product delivery have reduced labor requirements and handling time. For example, a self-loading machine for removing and distributing bulk bins from fruit orchards can handle more than twice the number of bins as the conventional forklift and trailer. 2/ A multi-purpose van container which permits hauling by truck, rail, etc., without rehandling individual packages speeds the delivery of highly perishable fresh fruits and vegetables. 3/ Some perishables are even being transferred from farms to processors by plane. 4/

Numerous technological improvements have also been introduced in the factories to increase production capacities and reduce labor requirements in processing operations. For the most part, these innovations reflect a progressive incorporation of increasingly efficient laborsaving devices rather than sweeping technological breakthroughs. The following are only a few examples of the many innovations that are occurring in the industry:

> Huge tanks that accommodate up to 120 tons of pineapples make the handling of incoming fruit independent of the cannery's ability to process it and curb uneven product flow. 5/

1/ California Annual Farm Labor Report, 1967, p. 7.

2/ California Farmer, January 21, 1967, p. 24c.

3/ The International Teamster, November 1967, p. 29.

4/ California Farmer, May 20, 1967, p. 10.

5/ Food Engineering, August 1967, p. 111.

A new carton for french cut green beans permits a 25 percent reduction in labor previously required to tuck in loose ends. 1/

A driverless pallet train eliminates problems of distance from the processing plant to the storage area and reduces labor requirements. 2/

A pneumatic loader that removes green beans without damage reduces unloading manpower requirements by 75 percent. 3/

A more significant innovation has been the move towards systems engineered processing. Thus, by using pneumatic and electronic instruments to control and measure processing steps through a central control system, an almost fully automated process for producing crushed pineapple has been developed. 4/ Other examples of systems engineered processing equipment include handling palletizers, coolers, washers, dryers, heat processes, and freezer belts.

1/ Food Engineering, July 1968, p. 96.

2/ Food Engineering, March 1969, p. 13.

3/ Ibid, p. 16.

4/ Food Engineering, June 1967, p. 53

Table 10. Fresh Fruit and Vegetable Industries: Number of establishments and nonsupervisory employees in peak workweek by industry, United States, regions, and areas, 1968

Industry	United States	Northeast	South	North Central	West	California and Arizona	Florida and Texas
			Number of establishments				
Total	4,357	362	1,521	784	1,690	818 1/	618 1/
Canning, drying, and other processing, except freezing, of fresh noncitrus fruits and vegetables	1,190	148	214	489	345	216	46
Freezing of fresh noncitrus fruits and vegetables	196	39	37	43	77	2/	2/
Processing of fresh citrus fruits	65	-	45	-	20	20	45
Handling of fresh fruits and vegetables	2,900	175	1,225	252	1,248	582	527

See footnotes at end of table.

Table 10. Fresh Fruit and Vegetable Industries: Number of establishments and nonsupervisory employees in peak workweek by industry, United States, regions, and areas, 1968 (Concluded)

Industry	United States	Northeast	South	North Central	West	California and Arizona	Florida and Texas
	Nonsupervisory employees (in thousands)						
Total	383.7	21.4	112.5	82.9	166.9	104.8 1/	54.3 1/
Canning, drying, and other processing, except freezing, of fresh noncitrus fruits and vegetables	204.1	14.9	37.4	72.7	79.1	57.1	6.4
Freezing of fresh noncitrus fruits and vegetables	27.0	4.0	6.9	4.5	11.6	2/	2/
Processing of fresh citrus fruits	18.1	-	16.5	-	1.6	1.6	16.5
Handling of fresh fruits and vegetables	134.5	2.5	51.7	5.7	74.6	46.1	31.4

1/ Excludes freezing of fresh noncitrus fruits and vegetables.

2/ Insufficient data to warrant presentation.

Source: Surveys conducted by the U.S. Department of Agriculture for WHPC.

I. Canning, Drying, and Other Processing, Except Freezing, of Fresh Noncitrus Fruits and Vegetables

Seasonality of Operation

Measurements or indicators of seasonality for which data were collected in this survey include length of active operating season, concentration of man-hours, short-term employment trends, and use of multiple shifts.

Length of active season--During 1968, 158.7 million hours were worked by nonsupervisory employees in the canning, drying, and other processing (except freezing) of fresh noncitrus fruits and vegetables industry. Half of these man-hours were used in the 12 most active weeks as measured by total weekly hours worked. Seventy-five percent of the total man-hours were used in the 27 most active weeks.

Region and area	Annual man-hours	Number of most active weeks accounting for 50 percent of annual man-hours	Number of most active weeks accounting for 75 percent of annual man-hours
United States	158,709,000	12	27
Northeast	15,707,000	16	30
South	31,026,000	15	30
North Central	52,841,000	11	27
West	59,135,000	11	23
California and Arizona	45,200,000	11	22
Florida and Texas	7,822,000	21	36

On a regional basis, the West, with well over a third of the industry's annual man-hours, was the most seasonal with 50 and 75 percent of the annual man-hours accounted for in the 11 and 23 most active weeks of operation, respectively. The Northeast, which accounted for only a tenth of all annual man-hours, was the least seasonal with 50 and 75 percent of the annual man-hours accounted for in the 16 and 30 most active weeks, respectively. In the South, 50 and 75 percent of the man-hours were used in the 15 and 30 most active weeks, respectively; in the Florida-Texas segment of the South, the processing season was longer.

Between the peak and twentieth week, weekly man-hours in all establishments declined from 9.5 million hours to 2.3 million, or 76 percent. Weekly man-hour data for establishments classified by primary commodity processed in 1968 revealed only one extreme divergence from the overall pattern of seasonality. This occurred in establishments primarily

engaged in potato processing. As shown below, the decline in weekly man-hours was relatively small in this industry, only 20 percent between the peak and twentieth weeks. For six other primary commodity classifications for which data could be tabulated, the decline in weekly man-hours between the peak and twentieth week ranged from 64 percent to 93 percent.

Primary commodity processed	Percent of total man-hours		Percent decline in man-hours between	
	Peak week	20th highest week	Peak and 10th highest weeks	Peak and 20th highest weeks
All commodities	100	100	48	75
Apples	8	9	33	71
Plums	2	1/	78	93
Snap beans	7	7	50	76
Sweet corn	15	8	65	87
Cucumber	5	8	50	64
Tomatoes	18	9	75	88
Potatoes	7	23	12	20
All other	37	35	36	77

1/ Less than 0.5 percent.

During the 20 most active weeks, the weeks in which the partial overtime exemption under sections 7(c) and 7(d) of the Fair Labor Standards Act would most likely be claimed, two-thirds of annual man-hours were used, nationwide. Among the regions, the proportions of hours used during this period ranged from three-fifths in the Northeast to over seven-tenths in the West.

Region and area	Percent of annual man-hours used in	
	10 most active weeks	20 most active weeks
United States	46	67
Northeast	36	60
South	40	61
North Central	48	67
West	49	72
California and Arizona	50	73
Florida and Texas	27	49

Of the 1,196 establishments primarily engaged in the processing activities of this industry during 1968, 73 percent were engaged in such work for 52 weeks. About four-fifths of the establishments in the Northeast and North Central regions operated year-round, as did practically all of the establishments in Florida and Texas.

Region and area	Number of establishments	Establishments processing for 52 weeks	
		Number	percent
United States	1,196	869	73
Northeast	148	116	78
South	214	130	61
North Central	489	399	82
West	345	224	65
California and Arizona	216	120	56
Florida and Texas	46	44	96

About three-fourths of all establishments used 50 percent of their annual man-hours in 20 weeks or less and slightly less than half of the establishments used 75 percent of the man-hours in the same time period (Table 11). The proportion of establishments using 50 and 75 percent of annual man-hours in 20 weeks or less varied significantly by region. In the South and West, over half of the establishments used 50 percent of the annual man-hours in eight weeks or less and three-fifths used 75 percent in 20 weeks or less. In contrast, over three-fifths of the establishments in the Northeast and North Central required more than 20 weeks to use 75 percent of annual man-hours.

The longer processing season noted previously for the Florida-Texas area was also clearly evident as it took three-fifths of the establishments in that area more than 20 weeks to use half of their annual man-hours.

Employment trends--Another indication of seasonality in an industry is the variation in the level of employment. In this industry, employment declined from 204.1 thousand in the peak week to 159.1 thousand in the seventh week, or 22 percent, and to 126.4 thousand in the tenth highest week, or 38 percent (Table 12). By the twentieth week, employment had declined to 65.5 thousand, or 68 percent.

In all regions except the Northeast, the rate of employment decrease from the peak week to the seventh week was similar to that of the Nation as a whole. Over a longer period, such as from the peak week to the twentieth highest week, employment declines were significantly greater in the West and North Central--over 70 percent--than in the Northeast and South--47 percent and 58 percent, respectively.

Average nonsupervisory employment per operating establishment in the United States was 171 in the peak week, 64 in the twentieth week, and 39 in the lowest week. As for the regions, average employment was highest in the West during the more active weeks of the processing season--229 in the peak week, 203 in the seventh week, and 139 in the fourteenth highest week. In the twentieth highest week, average nonsupervisory employment was highest in the South, 104 employees.

Multiple shift operations--Well over two-fifths of the 1,196 establishments operated with multiple shifts at some time during the year. About three-fourths of the multiple shift establishments operated with two or more shifts for 20 weeks or less.

Region and area	Multiple shift establishments					
		Percent operating two or more shifts				
	Number	1-8 weeks	9-14 weeks	15-20 weeks	21-28 weeks	29 weeks or more
United States	534	28	27	17	9	18
Northeast	45	33	29	4	16	18
South	76	32	33	3	3	30
North Central	209	25	23	27	8	17
West	204	29	29	15	12	15
California and Arizona	121	29	21	23	12	14
Florida and Texas	9	0	11	11	0	78

Multiple shift operations were most prevalent in the North Central and West which accounted for three-fourths of the 534 multiple shift establishments. These same regions, however, had the largest proportions of such establishments operating two or more shifts for less than 21 weeks.

The importance of additional shifts may be appraised in terms of the relative importance of man-hours worked on the first shift. For the selected weeks studied, no more than about a fifth of the multiple establishments had less than 50 percent of the man-hours worked on the first shift (Table 13). The proportions ranged from a high of 22 percent in the fourteenth highest week down to 12 percent in the seventeenth week. In all of the selected weeks, the most prevalent proportion of man-hours accounted for by the first shift fell in the 50-64 percent interval.

In comparing the regions, practically no multiple shift establishments in the South had less than 50 percent of the man-hours worked on the first shift in the peak week and none after the seventh highest week. The North Central and West followed more closely the pattern noted for the United States.

Weekly Man-hours

All establishments--Workweeks of over 40 hours accounted for three-fourths of the aggregate peak-week hours, 65 percent in the seventh highest, 44 percent in the seventeenth, and 39 percent in the twentieth highest week (Table 14). Regionally, the proportion of man-hours worked by employees working over 40 hours in the peak week was substantially smaller in the South--50 percent compared with almost 80 percent in each of the other three regions. The proportion of hours worked in workweeks of "Over 40 hours" steadily declined from the peak week through the twentieth highest week in all regions except the South where proportions decreased up to the tenth highest week, increased substantially in the fourteenth week and then dropped to the level of the tenth week.

The change in the proportion of man-hours worked in workweeks of "Over 50 hours" followed somewhat the same pattern as for the "Over 40 hours," except the decline was more drastic--from 46 percent in the peak week to 27 percent in the seventh highest week and down to 12 percent by the twentieth week. Among the regions, the magnitude of such proportions as well as the rate of decline varied. For example, in the North Central region, workweeks of "Over 50 hours" accounted for 60 percent of the weekly hours during the peak week, 41 percent in the seventh week, 29 percent in the fourteenth week, and 16 percent in the twentieth highest week while the proportions for the West dropped from 39 percent in the peak week to 17 percent in the seventh week, 9 percent in the fourteenth week, and 4 percent in the twentieth week.

Shift operation--Establishments operating multiple shifts accounted for 79 percent of the total weekly man-hours in the peak week, 64 percent in the fourteenth week, and 41 percent by the twentieth highest week (Table 15). Regionally, the proportions of man-hours worked in multiple shift establishments ranged from 92 to 58 percent in the peak week and from 52 to 32 percent in the twentieth highest week. The largest proportions were in the West for all the selected weeks through the fourteenth highest--no less than 85 percent. The South had the lowest proportions of aggregate weekly hours worked in multiple shift establishments in the fourteenth and seventeenth selected workweeks; in the six selected periods the proportions ranged from 66 percent in the peak week and tenth week to 36 percent in the twentieth highest week. Moreover, the proportions were substantially lower in the Florida-Texas segment than in the parent region--about 25 percent in each of the selected workweeks.

The use of multiple shifts in this industry did not lessen the importance of long workweeks. In fact, the proportions of man-hours in multiple shift establishments worked by employees working over 40 hours--76 percent in the peak week, 69 percent in the seventh week, 65 percent in the tenth and fourteenth weeks--exceeded those in single shift establishments

for these respective weeks (Tables 16 and 17). Furthermore, workweeks of over 50 hours comprised a greater proportion of aggregate hours in multiple shift establishments than in single shift establishments in five of the six selected weeks studied.

In all of the regions except the South, a similar situation existed through the tenth week with regard to the relative importance of workweeks of over 40 hours in multiple and single shift establishments. In the selected weeks studied following the tenth week, the South was the only region in which workweeks of over 40 hours consistently constituted a larger proportion of man-hours in multiple shift establishments as compared with single shift establishments.

Establishment size--Almost all of the weekly man-hours in this industry were accounted for by establishments that had 25 or more nonsupervisory employees during the peak week of operations--99 percent in the peak week and 97 percent in the twentieth highest week. Establishments employing 250 or more employees accounted for a majority of the aggregate weekly man-hours in all selected weeks studied--about seven-tenths through the fourteenth week and about three-fifths in the seventeenth and twentieth weeks.

Establishment size in peak workweek	Percent of aggregate hours worked					
	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week
All establishments	100	100	100	100	100	100
Under 25 employees	1	1	2	2	3	3
25-99 employees	11	9	10	10	12	13
100-249 employees	19	18	18	20	24	26
250 or more employees	69	71	70	68	61	58

During the peak week, the proportion of man-hours accounted for by workweeks of over 40 hours was greatest in the "250 or more employees" size-group--76 percent compared with proportions ranging from 60 to 69 percent for the other size-groups. Although declining in importance in all size groups, workweeks of over 40 hours comprised two-thirds or more of total man-hours in the "250 or more" size-group through the fourteenth week.

Man-hours in Excess of 40 a Week

In the peak week of operations in all establishments, 2.0 million hours or 21 percent of total man-hours represented hours worked in excess of 40 by individual employees (Table 19). Hours worked beyond 40 per week dropped to 13 percent by the seventh week and to 6 percent by the twentieth highest week. There were significant regional variations in proportion of hours worked in excess of 40. For example, the proportions

for the North Central region ranged from 27 percent in the peak week to 8 percent in the twentieth week, compared to the South with proportions ranging from 12 percent in the peak week to 7 percent in the twentieth highest week.

The importance of long workweeks diminished as aggregate man-hours declined. Thus, the average number of hours worked in excess of 40 per employee working over 40 hours a week dropped from 16 hours in the peak week to 8 hours in the twentieth week. Regionally, the North Central showed the largest numerical decrease in average hours worked in excess of 40, from 21 hours in the peak week to 12 hours in the seventh, and to 8 hours by the twentieth week. Regionally, the North Central showed the largest numerical decrease in average hours worked in excess of 40, from 21 hours in the peak week to 12 hours in the seventh, and to 8 hours by the twentieth highest week. The South showed the smallest decrease in average hours in excess of 40 for the same periods.

Region and area	Average man-hours in excess of 40 per employee working over 40 hours					
	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week
United States	16	10	11	9	8	8
Northeast	16	11	10	10	9	10
South	13	12	10	10	7	8
North Central	21	12	14	10	9	8
West	12	8	9	8	7	6
California and Arizona	13	9	9	8	8	6
Florida and Texas	12	14	14	9	9	9

Large proportions of total man-hours beyond 40 a week were accounted for by hours worked in excess of 50 per week, hours beyond the exemption limitations provided in sections 7(c) and 7(d) of the Fair Labor Standards Act. These proportions for all establishments varied from 48 percent in the peak week to 24 percent in the fourteenth highest week. As shown below, the proportions for the North Central region exceeded those for the other regions in four of the six selected workweeks. The proportions

for the West were very erratic--varying from 36 percent in the peak week to 11 percent in the fourteenth week.

Region and area	Man-hours worked in excess of 50 as a percent of man-hours in excess of 40					
	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week
United States	48	33	34	24	26	27
Northeast	47	35	34	31	24	31
South	43	45	39	28	25	25
North Central	58	42	44	36	33	28
West	36	18	22	11	14	29
California and Arizona	36	16	22	10	9	36
Florida and Texas	39	43	48	27	23	22

Overtime Hours at Premium Rates

About 13 percent of the aggregate hours worked in the peak week were paid for at premium rates of not less than one and one-half times the regular rate. The proportion declined to 8 percent in the seventh week and to 5 percent by the twentieth highest week. The North Central region exceeded all others in the proportion of man-hours paid for at premium rates while the West showed the lowest proportions for all selected weeks outside of the peak week. The areas studied separately, California-Arizona and Florida-Texas, generally had smaller proportions than the parent regions.

Region and area	Percent of total man-hours paid for at premium rates					
	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week
United States	13	8	7	6	6	5
Northeast	14	11	10	9	7	6
South	7	6	5	7	5	4
North Central	19	12	13	10	8	7
West	9	5	4	3	4	3
California and Arizona	8	4	3	2	2	2
Florida and Texas	3	3	2	4	3	1

In workweeks of over 40 but not more than 50 hours, the proportions of man-hours over 40 paid for at premium rates fluctuated from 35 percent

in the peak week to 81 percent by the twentieth highest week (Table 19). (The proportions may include some premium pay for hours other than those worked in excess of 40 per week.)

Since establishments are most likely to use the 20 weeks of overtime exemption during the 20 most active weeks, these ratios indicate that the partial overtime exemptions under sections 7(c) and 7(d) were not fully utilized. The regional ratios indicate that the utilization of available overtime exemptions was highest in the West, especially in the California-Arizona area.

In workweeks exceeding 50 hours, over three-fifths of the man-hours over 40 were paid for at premium rates in each of the selected workweeks. Lesser proportions, however, existed for the South and the West. Since the overtime exemptions under sections 7(c) and 7(d) are limited to 50 and 48 hours a week, respectively, all hours in excess of these standards are required to be compensated for at premium rates. On an overall basis, this appeared to be the case (Table 20). However, in the South and West, some man-hours in excess of 50 were not paid for at premium rates. These may have been hours for which the year-round overtime exemption under section 13(b)(16) of the FLSA was claimed.

Weekly Hours of Work

Long workweeks were important in this industry. In the peak week, 62 percent of the employees worked over 40 hours (Table 21). The proportions working such hours declined to 52 percent in the seventh highest week and to 30 percent by the twentieth highest week. This decline in hours over 40 was due primarily to the change in the proportion of employees working over 50 hours which dropped from 34 percent in the peak week to 18 percent in the seventh week, and 8 percent in the twentieth week.

Among the regions, the West generally had the highest proportion of employees working over 40 hours for the selected workweeks up to the fourteenth week--ranging from seven-tenths in the peak week to over one-half in the fourteenth week. The South had the lowest proportions of employees working over 40 hours during the peak week--40 percent. In all regions, the proportions of employees working over 50 hours declined substantially from the peak week to the twentieth highest week. For example, the proportions in the West declined from 30 percent in the peak week to 2 percent in the twentieth highest week.

Relationship Between Daily and Weekly Hours of Work

The proportion of nonsupervisory employees working beyond the 10-hour daily overtime standard under sections 7(c) and 7(d) exceeded the proportions of employees working over the 50-hour weekly limitation under section 7(c) in all selected workweeks except the peak week, as shown

below. Thirty percent of the employees worked over 10 hours at least one day during the peak week compared to 13 percent in the twentieth highest week. The proportion of employees working over 50 hours a week and 10 hours a day dropped from 23 percent in the peak week to 5 percent in the twentieth week. In all selected workweeks, a significant proportion of employees worked eight or fewer hours every day--39 percent in the peak week, 47 percent in the seventh week and 51 to 59 percent in the other four selected weeks.

	Percent of nonsupervisory employees working				
				Over 50 hours a week	
Selected workweek	8 or fewer hours every day	Over 8 at least one day but never over 10 hours	Over 10 hours at least one day	Total	Over 10 hours at least one day
Peak week	39	31	30	34	23
7th highest week	47	27	26	18	14
10th highest week	51	29	19	16	12
14th highest week	55	30	14	12	8
17th highest week	59	28	12	10	6
20th highest week	59	28	13	8	5

Collective Bargaining Agreements

Collective bargaining agreements were in effect in 274 establishments, or 23 percent of the 1,196 establishments in the industry. These agreements covered 77,600 nonsupervisory employees (Appendix Table O-1). Eighty-five percent of the agreements covered plant workers, 69 percent covered maintenance workers, and only 9 percent covered clerical workers (Appendix Table O-2).

All of the 77,600 covered employees were in establishments with agreements providing for premium overtime pay (Appendix Table J-91). Over half of the employees were under contracts that provided for premium pay after 40 hours a week and 8 hours a day. For an additional fourth of the employees, the agreement provided for premium overtime pay after 8 hours a day.

Collective bargaining agreements generally provide for premium overtime pay after standard weekly and/or daily hours. However, in 120 establishments with contracts requiring overtime pay, the agreement contained a waiver of premium overtime pay for a specified number of weeks (Appendix Table J-92). Ninety-six of these establishments had a waiver of overtime pay for 15 to 20 weeks. Of the 77,600 workers covered by collective bargaining agreements, over three-fourths were affected by waiver provisions.

Table 11. Percent of establishments using 50 percent and 75 percent of annual man-hours in specified number of weeks, United States and regions, 1968

Region	Number of establishments	Percent of establishments using 50 percent of man-hours in: 8 weeks or less	9-14 weeks	15-20 weeks	21 weeks or more	Percent of establishments using 75 percent of man-hours in: 8 weeks or less	9-14 weeks	15-20 weeks	21 weeks or more
United States	1,196	43	18	14	26	20	15	13	52
Northeast	148	28	22	22	29	8	9	18	66
South	214	51	19	7	22	32	13	16	39
North Central	489	33	20	13	34	15	11	12	62
West	345	57	14	14	15	24	26	10	40
California and Arizona	216	64	15	11	11	36	21	14	28
Florida and Texas	46	20	20	0	60	0	0	22	78

Note: Details may not add to 100 percent because of rounding.

Source: Surveys conducted by the U.S. Department of Agriculture for WHPC.

Canning, Drying, and Other Processing, Except Freezing, of Fresh Noncitrus Fruits and Vegetables: All Establishments

Table 12. Nonsupervisory employment and average nonsupervisory employment per operating establishment, selected workweeks, United States and regions, 1968

Region	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week	Lowest week
				Nonsupervisory employment (in thousands)			
United States	204.1	159.1	126.4	97.7	77.0	65.5	33.8
Northeast	14.9	12.9	11.9	9.8	9.5	8.7	3.6
South	37.4	28.7	25.7	16.9	18.1	15.6	8.6
North Central	72.7	55.3	34.8	29.8	24.6	21.0	11.1
West	79.1	62.2	54.0	41.2	24.9	20.1	10.6
California and Arizona	57.1	46.6	41.5	33.1	18.1	14.0	7.3
Florida and Texas	8.4	4.6	4.3	4.2	4.4	5.0	3.2
				Average employment per establishment			
United States	171	141	116	94	75	64	39
Northeast	101	88	82	74	72	67	31
South	175	153	145	108	115	104	66
North Central	149	114	76	66	54	46	28
West	229	203	176	139	87	71	47
California and Arizona	264	263	234	196	109	84	65
Florida and Texas	139	100	93	91	96	109	73

Note: Details may not add to totals because of rounding.

Source: Surveys conducted by the U.S. Department of Agriculture for WHPC.

Table 13. Percent distribution of multiple shift establishments by the proportion of aggregate hours accounted for by the first shift, selected workweeks, United States and regions, 1960

Region	Number of establishments	Percent with specified proportion of man-hours on first shift: Less than 50	50 to 64	65 to 79	80 or more	Number of establishments	Percent with specified proportion of man-hours on first shift: Less than 50	50 to 64	65 to 79	80 or more
		Peak week					7th highest week			
United States	525	18	59	13	10	413	17	61	11	10
Northeast	36	14	67	11	8	24	12	75	12	0
South	76	1	70	11	18	62	2	61	15	23
North Central	209	21	49	18	13	170	22	52	11	15
West	204	23	63	10	3	157	20	68	10	2
California and Arizona	121	17	76	3	4	94	15	77	5	3
Florida and Texas	9	0	100	0	0	9	0	100	0	0
		10th highest week					14th highest week			
United States	370	16	64	10	10	280	22	[illegible]	18	10
Northeast	25	32	52	16	0	29	28	45	28	0
South	54	0	72	2	26	31	0	45	10	45
North Central	147	19	56	14	12	106	23	39	28	10
West	144	17	71	8	3	114	26	60	11	4
California and Arizona	85	16	75	4	5	75	27	65	4	4
Florida and Texas	9	0	100	0	0	9	0	100	0	0
		17th highest week					20th highest week			
United States	198	12	49	23	15	171	13	49	19	20
Northeast	24	12	58	29	0	23	30	35	35	0
South	29	0	48	3	48	27	0	48	0	52
North Central	82	15	45	27	13	66	18	45	14	23
West	63	14	52	25	8	55	6	58	27	9
California and Arizona	40	18	70	2	10	34	0	86	3	12
Florida and Texas	8	0	100	0	0	6	0	100	0	0

Note: Details may not add to 100 percent because of rounding.

Source: Surveys conducted by the U.S. Department of Agriculture for WHPC.

Canning, Drying, and Other Processing, Except Freezing, of Fresh Noncitrus Fruits and Vegetables: All Establishments

Table 14. Percent of aggregate hours worked by employees working specified weekly hours, selected workweeks, United States and regions, 1968

Region	Over 40 hours	Over 40 and including 50 hours	Over 50 hours	Over 40 hours	Over 40 and including 50 hours	Over 50 hours
		Peak week			7th highest week	
United States	74	28	46	65	38	27
Northeast	80	27	53	70	38	31
South	50	22	28	45	24	22
North Central	79	20	60	69	28	41
West	78	39	39	69	52	17
California and Arizona	79	39	40	70	55	15
Florida and Texas	69	22	47	53	20	34
		10th highest week			14th highest week	
United States	63	38	25	61	43	18
Northeast	69	37	32	63	34	28
South	42	24	18	56	38	18
North Central	71	28	42	62	33	29
West	64	49	15	62	53	9
California and Arizona	68	52	16	64	57	7
Florida and Texas	43	13	30	35	15	20
		17th highest week			20th highest week	
United States	44	28	16	39	27	12
Northeast	51	32	20	46	27	18
South	43	28	14	40	25	15
North Central	55	31	24	49	34	16
West	30	23	8	25	21	4
California and Arizona	23	18	5	19	16	3
Florida and Texas	34	16	18	32	13	19

Note: Details may not add to totals because of rounding.

Source: Surveys conducted by the U.S. Department of Agriculture for WHPC.

Table 15. Percent of aggregate hours worked in establishments classified by number of shifts in operation, selected workweeks, United States and regions, 1968

Region	Aggregate hours (in thousands)	Percent worked in Multiple shift establishments	Percent worked in Single shift establishments	Aggregate hours (in thousands)	Percent worked in Multiple shift establishments	Percent worked in Single shift establishments
	Peak week			7th highest week		
United States	9,539	79	21	6,471	74	26
Northeast	692	58	42	531	42	58
South	1,587	66	34	1,116	65	35
North Central	3,569	76	24	2,191	69	31
West	3,691	92	8	2,633	88	12
California and Arizona	2,745	95	5	2,045	92	8
Florida and Texas	251	26	74	203	28	72
	10th highest week			14th highest week		
United States	4,963	73	27	3,838	64	36
Northeast	474	43	57	391	47	52
South	901	66	34	678	41	59
North Central	1,434	64	36	1,106	53	47
West	2,154	88	12	1,663	85	15
California and Arizona	1,733	92	8	1,376	92	8
Florida and Texas	189	25	74	167	26	74
	17th highest week			20th highest week		
United States	2,689	48	52	2,346	41	59
Northeast	349	57	43	311	52	48
South	603	41	59	539	36	64
North Central	923	46	54	775	32	68
West	814	53	47	721	49	51
California and Arizona	583	56	44	512	50	50
Florida and Texas	159	23	77	152	23	76

Note: Details may not add to totals because of rounding.

Source: Surveys conducted by the U.S. Department of Agriculture for WHPC.

Canning, Drying, and Other Processing, Except Freezing, of Fresh Noncitrus Fruits and Vegetables: Multiple Shift Establishments

Table 16. Percent of aggregate man-hours worked by employees working specified weekly hours, selected workweeks, United States and regions, 1968

Region	Aggregate hours (in thousands)	Percent worked by employees who worked: Over 40 hours	Over 40 and including 50 hours	Over 50 hours	Aggregate hours (in thousands)	Percent worked by employees who worked: Over 40 hours	Over 40 and including 50 hours	Over 50 hours
		Peak week				7th highest week		
United States	7,548	76	28	47	4,790	69	40	29
Northeast	399	81	26	55	221	75	31	44
South	1,046	44	17	26	726	46	25	21
North Central	2,704	82	18	64	1,522	77	28	50
West	3,398	80	40	39	2,321	71	55	16
California and Arizona	2,595	80	40	40	1,887	71	58	14
Florida and Texas	69	85	17	68	57	74	46	28
		10th highest week				14th highest week		
United States	3,613	65	38	27	2,467	65	46	18
Northeast	202	74	26	47	185	62	28	34
South	597	40	25	15	276	58	39	20
North Central	918	73	21	52	590	63	26	37
West	1,895	68	52	16	1,416	67	58	9
California and Arizona	1,599	71	55	16	1,260	68	61	8
Florida and Texas	48	40	19	21	43	48	24	23
		17th highest week				20th highest week		
United States	1,297	44	27	18	956	38	26	12
Northeast	198	46	26	21	161	41	22	19
South	246	61	47	14	195	63	47	16
North Central	420	46	20	26	248	40	24	16
West	433	32	22	10	351	21	18	3
California and Arizona	324	22	16	7	254	15	13	2
Florida and Texas	37	41	27	14	35	34	25	8

Note: Details may not add to totals because of rounding.

Source: Surveys conducted by the U.S. Department of Agriculture for WHPC.

Canning, Drying, and Other Processing, Except Freezing, of Fresh Noncitrus Fruits and Vegetables: Single Shift Establishments

Table 17. Percent of aggregate man-hours worked by employees working specified weekly hours, selected workweeks, United States and regions, 1968

Region	Aggregate hours (in thousands)	Percent worked by employees who worked: Over 40 hours	Over 40 and including 50 hours	Over 50 hours	Aggregate hours (in thousands)	Percent worked by employees who worked: Over 40 hours	Over 40 and including 50 hours	Over 50 hours
		Peak week				7th highest week		
United States	1,991	67	26	41	1,681	53	31	22
Northeast	293	79	29	50	310	65	43	23
South	541	62	30	32	390	44	21	23
North Central	865	70	24	46	669	51	30	22
West	293	53	18	36	312	55	32	22
California and Arizona	150	54	13	41	158	54	20	34
Florida and Texas	193	64	24	40	146	45	9	36
		10th highest week				14th highest week		
United States	1,350	56	35	21	1,371	54	37	17
Northeast	272	66	44	21	205	64	40	24
South	304	47	23	24	402	54	37	17
North Central	515	67	41	26	517	61	41	19
West	259	34	28	6	247	32	23	9
California and Arizona	134	24	22	3	116	20	17	3
Florida and Texas	140	43	10	33	123	31	11	20
		17th highest week				20th highest week		
United States	1,392	44	29	15	1,339	40	28	13
Northeast	151	57	39	18	149	51	34	17
South	358	30	16	14	344	27	13	14
North Central	503	62	40	22	527	54	38	16
West	381	29	23	6	369	29	24	5
California and Arizona	259	24	21	3	258	23	19	4
Florida and Texas	122	32	13	19	116	32	9	23

Note: Details may not add to totals because of rounding.

Source: Surveys conducted by the U.S. Department of Agriculture for WHPC.

Table 18. Number and percent of man-hours worked in excess of 40, selected workweeks, United States and regions, 1968

Region	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week
	Number of man-hours (in thousands)					
United States	2,006	867	649	417	201	150
Northeast	159	79	68	51	33	29
South	195	117	75	72	36	36
North Central	966	356	258	132	95	60
West	685	315	248	161	37	24
California and Arizona	532	254	213	140	22	14
Florida and Texas	41	28	21	11	10	9
	Percent of man-hours					
United States	21	13	13	11	8	6
Northeast	23	15	14	13	10	10
South	12	10	8	11	6	7
North Central	27	16	18	12	10	8
West	19	12	12	10	5	3
California and Arizona	19	12	12	10	4	3
Florida and Texas	16	14	11	7	5	6

Note: Details may not add to totals because of rounding.

Source: Surveys conducted by the U.S. Department of Agriculture for WHPC.

Table 19. Percent of man-hours in excess of 40 paid for at premium rates in workweeks of over 40 hours, selected workweeks, United States and regions, 1968

Region	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week
			Workweeks of over 40 and including 50 hours			
United States	35	43	37	43	74	81
Northeast	35	78	79	67	69	64
South	47	62	68	91	100	62
North Central	44	83	72	80	67	100
West	28	23	15	18	70	92
California and Arizona	15	16	12	14	36	57
Florida and Texas	*	40	100	50	100	50
			Workweeks of over 50 hours			
United States	64	66	62	67	76	67
Northeast	68	66	67	77	75	68
South	57	53	54	42	62	48
North Central	69	70	69	78	84	82
West	57	64	50	55	65	45
California and Arizona	47	60	44	48	62	14
Florida and Texas	24	17	16	33	25	*

* Numerical data were not shown for less than 500 man-hours.

Source: Surveys conducted by the U.S. Department of Agriculture for WHPC.

Table 20. Man-hours worked in excess of 50 hours and man-hours paid for at premium rates in workweeks of over 50 hours, selected workweeks, United States and regions, 1968

(In thousands)

Region	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week
			Man-hours worked in excess of 50			
United States	963	285	220	102	53	41
Northeast	75	28	23	16	8	9
South	83	53	29	20	9	9
North Central	556	149	113	48	31	17
West	248	55	54	17	5	7
California and Arizona	193	42	47	14	2	5
Florida and Texas	16	12	10	3	3	2
			Man-hours paid for at premium rates			
United States	1,057	380	262	147	98	60
Northeast	90	37	33	27	15	13
South	90	48	30	17	15	11
North Central	601	210	146	80	57	31
West	275	85	53	23	11	5
California and Arizona	176	58	40	15	5	1
Florida and Texas	9	4	3	3	2	0

Note: Details may not add to totals because of rounding.

Source: Surveys conducted by the U.S. Department of Agriculture for WHPC.

Table 21. Percent of nonsupervisory employees working specified weekly hours, selected workweeks, United States and regions, 1968

Region	40 hours or less	Over 40 and including 50 hours	Over 50 hours	40 hours or less	Over 40 and including 50 hours	Over 50 hours
		Peak week			7th highest week	
United States	38	28	34	48	34	18
Northeast	34	27	39	44	35	22
South	60	20	20	66	20	13
North Central	36	21	43	48	25	27
West	31	39	30	40	48	12
California and Arizona	29	40	31	37	52	12
Florida and Texas	45	21	34	57	19	24
		10th highest week			14th highest week	
United States	51	32	16	51	37	12
Northeast	45	33	22	50	30	20
South	70	20	10	55	33	12
North Central	46	26	28	54	28	18
West	48	43	10	48	46	6
California and Arizona	42	47	11	44	51	5
Florida and Texas	66	13	22	72	14	15
		17th highest week			20th highest week	
United States	68	22	10	70	22	8
Northeast	62	26	13	68	21	11
South	70	22	8	71	20	9
North Central	58	27	15	62	28	10
West	79	16	5	81	17	2
California and Arizona	84	13	3	85	14	1
Florida and Texas	75	14	12	80	9	11

Note: Details may not add to 100 percent because of rounding.
Source: Surveys conducted by U.S. Department of Agriculture for WHPC.

11. Freezing of Fresh Noncitrus Fruits and Vegetables

Seasonality of Operation

Length of active season--In 1968, a total of 21.9 million man-hours were used in the freezing of fresh noncitrus fruits and vegetables industry. When the 52 workweeks were ranked in descending order of weekly hours worked, 50 percent of the annual man-hours were used in the 14 most active weeks and 75 percent were used in the 27 most active weeks.

Region	Annual man-hours	Number of most active weeks accounting for 50 percent of annual man-hours	Number of most active weeks accounting for 75 percent of annual man-hours
United States	*21,858,000	14	27
Northeast	3,421,000	15	27
South	5,596,000	14	26
North Central	4,398,000	18	30
West	8,446,000	12	25

*Details may not add to total because of rounding.

On a regional basis, the West was the most seasonal with 50 and 75 percent of the annual man-hours accounted for in the 12 and 25 most active weeks of operation, respectively. The North Central was the least seasonal region.

During the 20 most active weeks, the weeks in which exemptions under sections 7(c) and 7(d) would most likely be claimed, 64 percent of the annual man-hours were used; the proportions ranged from 56 percent in the North Central to 68 percent in the West.

Region	Percent of annual man-hours used in 10 most active weeks	Percent of annual man-hours used in 20 most active weeks
United States	40	64
Northeast	38	64
South	40	64
North Central	33	56
West	44	68

Of the 196 establishments primarily engaged in the freezing of [illegible]-citrus fresh fruits and vegetables during 1968, three-fifths were [illegible]ed

in processing for 52 weeks. Over three-fourths of the establishments in the South and almost nine-tenths of the establishments in the North Central region operated year-round, as compared with about two-fifths of the establishments in the other regions.

Region	Number of establishments	Establishments operating 52 weeks	
		Number	Percent
United States	196	116	59
Northeast	39	18	46
South	37	29	78
North Central	43	38	88
West	77	31	40

Nine-tenths of the establishments used 50 percent of their annual man-hours and just over half used 75 percent in 20 weeks or less (Table 22). All of the establishments in the South and almost all in the West and Northeast used half their annual man-hours in 20 weeks or less. The proportions of establishments using 75 percent of annual man-hours within 20 weeks varied greatly by region--from 70 percent in the West to 12 percent in the North Central region.

Employment trends--Another indicator of seasonality in an industry is the variation in the level of employment. In the freezing of fresh non-citrus fruits and vegetables industry, employment declined from 27.0 thousand in the peak week to 20.3 thousand in the seventh highest week or 25 percent (Table 23). The rate of decline was most pronounced in the West. By the twentieth week, employment had declined 54 percent for the United States as a whole and 66 percent in the West.

Average nonsupervisory employment per operating establishment for the United States declined from 138 in the peak week to 26 in the lowest week. Regionally, average employment tended to be highest in the South--186 in the peak week and 41 in the lowest week. The Northeast region had the lowest average employment per establishment in the peak week (103) and the North Central region had the lowest average employment in the lowest week (18).

Multiple shift operation--Over half of the 196 establishments operated with multiple shifts at some time during the year. Sixty-nine percent

of the multiple shift establishments operated with two or more shifts for 20 weeks or less.

Region	Multiple shift establishments					
		Percent operating two or more shifts				
	Number	1-8 weeks	9-14 weeks	15-20 weeks	21-28 weeks	29 weeks or more
United States	104	19	28	22	7	24
Northeast	19	42	16	5	11	26
South	19	0	42	16	16	26
North Central	28	18	32	25	0	25
West	38	18	24	32	5	21

The importance of the additional shifts may also be evaluated in terms of the relative proportion of man-hours worked on the first shift. For the selected weeks studied, however, the proportions of multiple shift establishments with less than 50 percent of the man-hours worked on the first shift were erratic (Table 24). The lack of any discernible trend may be due to the declining number of establishments operating with more than one shift and the greater importance of the second or third shift in establishments that used multiple shifts over a longer period of time.

In comparing the regions, the South showed a very small proportion of establishments with less than 50 percent of the man-hours worked on the first shift even in the peak week--a tenth. In contrast, the North Central region, with a lesser concentration of annual man-hours than the other regions, but with a larger proportion of multiple shift establishments, showed the largest proportion of multiple shift establishments with less than 50 percent of the man-hours worked on the first shift.

Weekly Man-hours

All establishments--Workweeks of over 40 hours accounted for 73 percent of the aggregate hours in the peak week, 51 percent in the tenth week, 49 percent in the fourteenth week, and 46 percent in the twentieth week (Table 25). Regionally, the proportions of man-hours worked by employees working over 40 hours were lowest in the North Central region in each of the selected workweeks. There was a steady decline in the proportion through the tenth highest week in all regions. Thereafter, there were some decreases and rebounds in each of the regions.

The change in the proportion of man-hours worked in workweeks of "over 50 hours" followed somewhat the same pattern as for "over 40 hours," except that the decline was more drastic--from 43 percent in the peak week to 19 percent in the tenth week and down to 13 percent by the twentieth week. Among the regions, the rate of decline varied. For

example, between the peak week and the tenth highest week, the proportions of man-hours worked in workweeks of "over 50 hours" declined from 50 percent to 18 percent in the Northeast and from 28 percent to 8 percent in the North Central as compared with a decline from 45 percent to 19 percent in the West.

Shift operation--With but three exceptions, establishments operating multiple shifts accounted for more than half the total man-hours in all selected weeks studied in each of the regions (Table 26). In the peak week, seventh and tenth weeks, the proportion for the United States exceeded 75 percent. Regionally, the proportions were largest in the West, ranging from 90 percent in the peak week to 75 percent in the twentieth highest week.

On a nationwide basis, multiple shift operations did not appear to lessen the importance of long workweeks in this industry. The variations between multiple and single shift establishments in the proportions of man-hours worked by employees working excess of 40 hours were relatively small (Tables 27 and 28). This was not the case in the North Central region, however, where the proportions in single shift establishments were considerably higher than in multiple shift establishments in all of the selected weeks.

Establishment size--Almost all of the weekly man-hours in this industry were accounted for by establishments that had 25 or more nonsupervisory employees during the peak week of operation--99 percent in all of the selected workweeks. The largest establishments in the industry, those with a peak employment of 250 or more, accounted for over half of the aggregate man-hours in each of the selected weeks studied. The proportion of weekly man-hours accounted for by the 100-249 and 25-99 employee-size groupings was relatively stable--about three-tenths and a sixth, respectively.

Establishment size in peak workweek	Percent of aggregate hours worked					
	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week
Total	100	100	100	100	100	100
Under 25 employees	1	1	1	1	1	1
25-99 employees	17	14	15	16	17	18
100-249 employees	31	30	28	27	28	28
250 or more employees	51	55	57	56	55	54

In the 250 or more employment-size group, the proportion of man-hours accounted for by workweeks of over 40 hours was 83 percent in the peak week but dropped to 55 percent by the tenth highest week and to 51 percent by the twentieth highest week (Appendix Table K-41). These proportions exceeded those in the other two significant employee-size

groupings. The difference was most marked for the 100-249 employment-size group in which 56 percent of the man-hours in the peak week and 32 percent in the twentieth week were worked by employees working over 40 hours.

Man-hours in Excess of 40 a Week

In the peak week, 18 percent of the total man-hours represented hours worked in excess of 40 by individual employees (Table 29). Hours worked beyond 40 per week dropped to 11 percent by the seventh week and 7 percent by the twentieth week. Regional proportions in the peak week ranged from 11 percent in the North Central to about a fifth in each of the other three regions. By the fourteenth week, the proportions of man-hours worked in excess of 40 dropped to less than half of what they were in the peak week in all regions.

The number of hours worked in excess of 40 per employee working over 40 hours a week declined from an average of 13 hours in the peak week to 9 hours in the tenth week and to 7 hours in the twentieth week. The largest decrease occurred in the Northeast--from an average of 13 hours per employee in the peak week to 4 hours in the twentieth week. In the South, average hours in excess of 40 in the selected workweeks dropped a third--from 16 to 11 hours.

Region	Average man-hours in excess of 40 per employee working over 40 hours					
	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week
United States	13	10	9	7	9	7
Northeast	13	6	8	6	5	4
South	16	12	12	11	11	11
North Central	12	8	6	7	9	5
West	12	10	8	7	9	7

Significant proportions of man-hours in excess of 40 a week represented hours worked beyond 50 per week, that is, hours in excess of the exemption limitations provided in sections 7(c) and 7(d) of the Fair Labor Standards Act. Nationwide, these proportions declined from 42 percent in the peak week to a low of 24 percent in the twentieth week. The

proportions in the South equalled or exceeded those in the other regions in each of the selected workweeks.

Region	Man-hours worked in excess of 50 as a percent of man-hours worked in excess of 40					
	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week
United States	42	36	27	30	30	24
Northeast	41	30	30	25	17	25
South	50	43	42	42	42	33
North Central	47	38	20	0	17	33
West	37	34	17	30	33	23

Overtime Hours at Premium Rates

About 9 percent of the aggregate hours worked in the peak week were paid for at premium rates of not less than one and one-half times the regular rate. The proportion declined to 6 percent in the seventh week and to 4 percent in the tenth and twentieth weeks.

Region	Percent of total man-hours paid for at premium rates					
	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week
United States	9	6	4	5	5	4
Northeast	11	7	6	8	6	4
South	9	7	6	4	4	3
North Central	9	5	3	3	3	3
West	8	6	4	5	5	4

In workweeks of over 40 but not more than 50 hours, the proportions of man-hours over 40 paid for at premium rates ranged from 18 percent in the peak week to 62 percent in the fourteenth highest week (Table 30). (The proportions may include some premium pay for hours other than those in excess of 40 per week.) Since establishments are most likely to use the 20 weeks of overtime exemption during the 20 most active weeks, these ratios indicate that the partial overtime exemptions under sections 7(c) and 7(d) were not fully utilized. The regional ratios indicate that utilization was generally greatest in the South.

In workweeks exceeding 50 hours, roughly half of the man-hours over 40 were paid for at premium rates in each of the selected weeks. Since the overtime exemptions under sections 7(c) and 7(d) are limited to 50 and 48 hours a week, respectively, all hours worked in excess of these

standards are required to be compensated for at premium rates. On a nationwide basis, this appeared to be the case in all workweeks and was generally the case when viewed on a regional basis (Table 31).

Weekly Hours of Work

Long workweeks were common in this industry. In the peak week, 60 percent of the employees worked over 40 hours (Table 32). The proportion working such hours declined sharply to 43 percent by the seventh week and varied between 35 and 38 percent in the other selected weeks. This decline was primarily due to the change in the proportion of employees working over 50 hours which dropped from 31 percent in the peak week to 17 percent in the seventh week and 8 percent by the twentieth week. The North Central region had the lowest proportion of employees working long workweeks--35 percent of the employees worked over 40 hours in the peak week, 13 percent in the fourteenth week, and 19 percent in the twentieth week.

Relationship Between Daily and Weekly Hours of Work

The proportion of employees working beyond the 10-hour daily overtime standard under sections 7(c) and 7(d) was somewhat lower than the proportion working beyond the 50-hour weekly limitation provided under section 7(c). Twenty percent of the employees worked over 10 hours at least one day during the peak week compared to 10 percent during the twentieth week. The proportion of employees who worked over 10 hours a day and over 50 hours a week dropped from 17 percent in the peak week to 5 percent in the twentieth week. In each of the selected workweeks, a significant proportion worked eight or fewer hours every day, 35 percent in the peak week, 49 percent in the seventh, tenth, and fourteenth highest weeks, and 57 percent in the twentieth week.

	Percent of nonsupervisory employees working				
		Over 8 at least one day but never over 10 hours	Over 10 hours at least one day	Over 50 hours a week	
Selected workweek	8 or fewer hours every day			Total	Over 10 hours at least one day
Peak week	35	45	20	31	17
7th highest week	49	38	13	17	9
10th highest week	49	39	12	12	8
14th highest week	49	41	10	9	6
17th highest week	54	31	14	12	8
20th highest week	57	33	10	3	5

Collective Bargaining Agreements

Collective bargaining agreements were in effect in 36 establishments, or 18 percent of the 196 establishments, covering 6,100 nonsupervisory

employees, or 22 percent of the industry peak-week employment (Appendix Table 0-1). Over four-fifths of the collective bargaining agreements covered plant workers and over seven-tenths covered maintenance workers (Appendix Table 0-2). Very few of the agreements covered clerical workers.

Of the 6,100 employees covered by collective bargaining agreements, all but 300 were in establishments with agreements providing premium pay for overtime work (Appendix Table K-66). Over 80 percent of the employees were under contracts providing for premium pay after 40 hours a week and 8 hours a day.

Collective bargaining agreements generally provide for premium overtime pay after standard weekly and/or daily hours. However, 15 of the 31 contracts requiring overtime pay contained a waiver of premium overtime pay for a specified period, usually 15 to 20 weeks (Appendix Table K-67). A total of 4,100 employees were affected by these waiver provisions.

Table 22. Percent of establishments using 50 percent and 75 percent of annual man-hours in specified number of weeks, United States and regions, 1968

Region	Number of establishments	Percent of establishments using: 50 percent of man-hours in: 8 weeks or less	9-14 weeks	15-20 weeks	21 weeks or more	75 percent of man-hours in: 8 weeks or less	9-14 weeks	15-20 weeks	21 weeks or more
United States	196	39	24	27	10	24	12	15	48
Northeast	39	23	51	18	8	18	3	49	31
South	37	41	24	35	0	22	19	3	57
North Central	43	12	7	47	35	7	2	2	88
West	77	62	21	16	1	39	19	12	30

Note: Details may not add to 100 percent because of rounding.

Source: Surveys conducted by the U. S. Department of Agriculture for WHPC.

Table 23. Nonsupervisory employment and average nonsupervisory employment per operating establishment, selected workweeks, United States and regions, 1968

Region	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week	Lowest week
			Nonsupervisory employment (in thousands)				
United States	27.0	20.3	18.3	15.4	13.3	12.3	3.0
Northeast	4.0	3.0	2.5	2.3	2.2	2.0	0.4
South	6.9	5.0	4.6	4.1	3.8	3.4	1.2
North Central	4.5	3.8	3.4	3.2	2.5	2.9	0.7
West	11.6	8.4	7.8	5.9	4.8	3.9	0.8
			Average employment per establishment				
United States	138	126	115	97	85	79	26
Northeast	103	77	64	59	56	51	22
South	186	172	159	141	131	117	41
North Central	105	90	81	76	60	69	18
West	151	165	159	120	104	87	26

Note: Details may not add to totals because of rounding.

Source: Surveys conducted by the U. S. Department of Agriculture for WHPC.

Table 24. Percent distribution of multiple shift establishments by the proportion of aggregate hours accounted for by the first shift, selected workweeks, United States and regions, 1968

Region	Number of establishments	Percent with specified proportion of man-hours on first shift: Less than 50	50 to 64	65 to 79	80 or more	Number of establishments	Percent with specified proportion of man-hours on first shift: Less than 50	50 to 64	65 to 79	80 or more
		Peak week					7th highest week			
United States	104	30	58	12	1	91	25	65	10	0
Northeast	19	21	68	11	0	17	6	88	6	0
South	19	11	63	21	5	17	0	82	18	0
North Central	28	54	43	4	0	23	57	30	13	0
West	38	26	61	13	0	34	26	68	6	0
		10th highest week					14th highest week			
United States	81	35	43	14	9	62	42	39	16	3
Northeast	10	10	60	0	30	8	12	75	0	12
South	17	0	65	18	18	9	0	78	11	11
North Central	23	61	4	30	4	23	61	4	35	0
West	31	42	55	3	0	22	50	45	5	0
		17th highest week					20th highest week			
United States	41	39	44	12	5	35	43	43	9	6
Northeast	8	38	50	0	12	8	38	50	0	12
South	10	10	40	40	10	8	0	50	38	12
North Central	7	100	0	0	0	7	100	0	0	0
West	16	31	62	6	0	12	42	58	0	0

Note: Details may not add to 100 percent because of rounding.

Source: Surveys conducted by the U. S. Department of Agriculture for WHPC.

Table 25. Percent of aggregate hours worked by employees working specified weekly hours, selected workweeks, United States and regions, 1968

Region	Over 40 hours	Over 40 and including 50 hours	Over 50 hours	Over 40 hours	Over 40 and including 50 hours	Over 50 hours
	Peak week			7th highest week		
United States	73	30	43	57	30	26
Northeast	76	26	50	64	49	15
South	71	27	44	49	21	28
North Central	47	19	28	34	23	11
West	81	36	45	68	32	36
	10th highest week			14th highest week		
United States	51	32	19	49	34	15
Northeast	59	41	18	67	50	17
South	48	21	27	39	21	19
North Central	29	21	8	18	13	5
West	59	39	19	64	47	17
	17th highest week			20th highest week		
United States	46	27	19	46	33	13
Northeast	60	47	13	61	53	8
South	43	20	22	39	20	19
North Central	36	23	14	27	20	7
West	47	25	22	56	40	16

Note: Details may not add to totals because of rounding.

Source: Surveys conducted by the U. S. Department of Agriculture for WHPC.

Table 26. Percent of aggregate hours worked in establishments classified by number of shifts in operation, selected workweeks, United States and regions, 1968

Region	Aggregate hours (in thousands)	Percent worked in Multiple shift establishments	Percent worked in Single shift establishments	Aggregate hours (in thousands)	Percent worked in Multiple shift establishments	Percent worked in Single shift establishments
	Peak week			7th highest week		
United States	1,184	78	22	766	79	21
Northeast	179	74	27	114	86	14
South	318	60	41	184	64	36
North Central	176	82	18	134	72	29
West	511	90	10	333	88	12
	10th highest week			14th highest week		
United States	667	76	24	554	69	31
Northeast	103	66	34	92	60	40
South	163	66	34	141	53	47
North Central	119	71	29	106	71	29
West	283	87	13	216	82	18
	17th highest week			20th highest week		
United States	484	60	40	432	56	44
Northeast	85	59	42	78	58	42
South	131	57	43	115	49	51
North Central	96	34	66	92	36	65
West	172	78	22	147	75	24

Note: Details may not add to 100 percent because of rounding.
Source: Surveys conducted by the U. S. Department of Agriculture for WHPC.

Table 27. Percent of aggregate man-hours worked by employees working specified weekly hours, selected workweeks, United States and regions, 1968

Region	Aggregate hours (in thousands)	Percent worked by employees who worked: Over 40 hours	Over 40 and including 50 hours	Over 50 hours	Aggregate hours (in thousands)	Percent worked by employees who worked: Over 40 hours	Over 40 and including 50 hours	Over 50 hours
		Peak week				7th highest week		
United States	924	73	31	42	605	56	28	27
Northeast	132	72	33	39	98	64	47	16
South	190	77	23	54	117	48	20	28
North Central	145	39	16	23	96	21	16	6
West	458	82	38	44	294	67	29	38
		10th highest week				14th highest week		
United States	504	50	31	20	381	50	36	14
Northeast	68	48	22	26	55	59	36	23
South	108	51	22	29	75	43	22	20
North Central	84	26	18	8	75	13	11	2
West	245	59	42	18	177	67	53	14
		17th highest week				20th highest week		
United States	291	42	23	19	244	48	34	15
Northeast	50	50	30	20	45	51	39	12
South	75	41	19	22	56	42	23	19
North Central	33	0	0	0	33	0	0	0
West	134	51	29	22	110	65	47	18

Note: Details may not add to totals because of rounding.

Source: Surveys conducted by the U. S. Department of Agriculture for WHPC.

Table 28. Percent of aggregate man-hours worked by employees working specified weekly hours, selected workweeks, United States and regions, 1968

Region	Aggregate hours (in thousands)	Percent worked by employees who worked: Over 40 hours	Over 40 and including 50 hours	Over 50 hours	Aggregate hours (in thousands)	Percent worked by employees who worked: Over 40 hours	Over 40 and including 50 hours	Over 50 hours
	Peak week					7th highest week		
United States	260	72	25	48	161	60	37	24
Northeast	48	86	6	83	16	66	60	7
South	129	62	33	29	67	50	22	27
North Central	31	85	31	54	39	65	42	23
West	53	75	17	58	39	73	48	25
	10th highest week					14th highest week		
United States	163	53	35	18	173	47	30	17
Northeast	35	80	78	2	37	80	71	8
South	55	43	19	24	66	36	18	17
North Central	35	37	28	9	31	29	18	11
West	38	56	25	31	39	50	20	31
	17th highest week					20th highest week		
United States	193	52	33	19	188	43	32	12
Northeast	36	74	70	4	33	76	73	2
South	56	46	22	23	59	36	17	19
North Central	63	55	34	20	60	42	31	11
West	38	36	12	24	36	29	21	9

Note: Details may not add to totals because of rounding.
Source: Surveys conducted by the U. S. Department of Agriculture for WHPC.

Table 29. Number and percent of man-hours worked in excess of 40, selected workweeks, United States and regions, 1968

Region	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week
			Number of man-hours (in thousands)			
United States	215	86	62	43	40	29
Northeast	34	10	10	8	6	4
South	64	21	19	12	12	9
North Central	19	8	5	3	6	3
West	98	47	29	20	15	13
			Percent of total man-hours			
United States	18	11	9	8	8	7
Northeast	19	9	10	9	7	5
South	20	12	12	8	10	8
North Central	11	6	4	2	7	3
West	19	14	10	9	9	9

Note: Details may not add to totals because of rounding.

Source: Surveys conducted by the U. S. Department of Agriculture for WHPC.

Table 30. Percent of man-hours in excess of 40 paid for at premium rates in workweeks of over 40 hours, selected workweeks, United States and regions, 1968

Region	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week
			Workweeks of over 40 and including 50 hours			
United States	18	38	30	62	58	50
Northeast	20	75	50	100	67	100
South	9	25	33	33	33	33
North Central	33	67	50	100	33	*
West	18	40	29	62	75	50
			Workweeks of over 50 hours			
United States	53	52	51	48	46	53
Northeast	66	67	67	80	100	50
South	50	65	53	44	40	43
North Central	82	60	67	100	33	50
West	45	41	40	25	33	43

* Numerical data were not shown for less than 500 man-hours.

Source: Surveys conducted by the U. S. Department of Agriculture for WHPC.

Table 31. Man-hours worked in excess of 50 hours and man-hours paid for at premium rates in workweeks of over 50 hours, selected workweeks, United States and regions, 1968

(Man-hours in thousands)

Region	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week
	Man-hours in excess of 50					
United States	91	31	17	13	12	7
Northeast	14	3	3	2	1	1
South	32	9	8	5	5	3
North Central	9	3	1	0	1	1
West	36	16	5	6	5	3
	Man-hours paid for at premium rates in workweeks of over 50 hours					
United States	93	34	20	13	13	9
Northeast	19	4	3	4	3	1
South	27	11	8	4	4	3
North Central	14	3	2	1	1	1
West	34	15	6	3	4	3

Note: Details may not add to totals because of rounding.

Source: Surveys conducted by the U. S. Department of Agriculture for WHPC.

Table 32. Percent of nonsupervisory employees working specified weekly hours, selected workweeks, United States and regions, 1968

Region	40 hours or less	Over 40 and including 50 hours	Over 50 hours	40 hours or less	Over 40 and including 50 hours	Over 50 hours
	Peak week			7th highest week		
United States	40	29	31	57	26	17
Northeast	36	26	38	48	43	9
South	41	27	31	66	18	17
North Central	65	17	18	75	18	6
West	31	35	34	47	28	25
	10th highest week			14th highest week		
United States	62	26	12	62	28	9
Northeast	50	38	12	42	47	12
South	68	17	16	73	16	11
North Central	78	17	5	88	10	3
West	56	31	13	50	40	11
	17th highest week			20th highest week		
United States	66	22	12	65	26	8
Northeast	48	43	9	47	48	6
South	71	16	13	74	14	11
North Central	72	18	10	80	15	4
West	66	21	14	56	34	10

Note: Details may not add to 100 percent because of rounding.

Source: Surveys conducted by the U. S. Department of Agriculture for WHPC.

III. Processing of Fresh Citrus Fruits

Seasonality of Operation

Length of active season--In 1968, a total of 25.2 million man-hours were used in the fresh citrus fruit processing industry. Fifty percent of these man-hours were used in the 18 most active weeks as was evident when the 52 workweeks were ranked in descending order of weekly hours worked. Seventy-five percent of the man-hours were used in the 30 most active weeks. This industry was confined to two areas, with the Florida-Texas area having 88 percent of the annual man-hours and the California-Arizona area the remaining 12 percent. The Florida-Texas area was the more seasonal of the two areas--it took 17 weeks to use 50 percent of the annual man-hours in the Florida-Texas area as compared to 23 weeks in the California-Arizona area. Similarly, 75 percent of annual man-hours were used in 29 weeks in the Florida-Texas area and 37 weeks in the California-Arizona area.

Area	Annual man-hours	Number of most active weeks accounting for 50 percent of annual man-hours	Number of most active weeks accounting for 75 percent of annual man-hours
United States	25,206,000	18	30
California and Arizona	2,925,000	23	37
Florida and Texas	22,279,000	17	29

During the 20 most active weeks, the weeks in which the exemptions under sections 7(c) and 7(d) were most likely to have been claimed, 57 percent of the annual man-hours were used. The percent of annual man-hours used in the California-Arizona area was much lower than that for the Florida-Texas area.

Area	Percent of annual man-hours used in 10 most active weeks	Percent of annual man-hours used in 20 most active weeks
United States	31	57
California and Arizona	23	44
Florida and Texas	32	58

Of the 65 establishments primarily engaged in the processing of fresh citrus fruits during 1968, over nine-tenths were in operation for

52 weeks. The proportion for the Florida-Texas area was substantially greater than for the California-Arizona area.

Area	Number of establishments	Establishments operating 52 weeks	
		Number	Percent
United States	65	60	92
California and Arizona	20	16	80
Florida and Texas	45	44	98

Just over one-fourth of the establishments used 50 percent of the annual man-hours in 21 weeks or more, indicating little or no seasonality. On the other hand, another fourth of the establishments used 50 percent of man-hours in 14 or fewer weeks. Only a tenth of the establishments used 75 percent of their man-hours in 20 weeks or less (Table 33). The pattern varied by area. Thus half of the establishments in California and Arizona needed at least 21 weeks to use 50 percent of annual man-hours as compared to only one-sixth of the establishments in the Florida-Texas area. Practically all of the establishments in the Florida-Texas area and all in California and Arizona required 21 weeks or more to use 75 percent of the annual man-hours.

Employment trends--Variations in the level of employment is another indication of seasonality. In the processing of fresh citrus fruits industry, nonsupervisory employment declined gradually from 18.1 thousand in the peak week to 14.3 thousand in the twentieth week and to 4.5 thousand in the lowest week (Table 34). Florida and Texas accounted for nine-tenths of the industry employment for the twenty highest weeks and never less than three-fourths during the remainder of the year. Employment in the California-Arizona area was relatively stable--1,600 in the peak week, 1,500 in the twentieth week and 1,100 in the lowest week of the year.

Average nonsupervisory employment per operating establishment was 278 in the peak week and 75 in the lowest week. Average employment per establishment for the Florida-Texas area was about 4 times that for the California-Arizona area in all six of the selected workweeks for which separate data were collected, but was almost the same in the lowest week.

Multiple shift operations--Forty of the 65 establishments in the industry operated with multiple shifts at some time during the year. Moreover,

about three-fifths of the multiple shift establishments operated with two or more shifts for 29 weeks or more.

Area	Multiple shift establishments					
		Percent operating two or more shifts				
	Number	1-8 weeks	9-14 weeks	15-20 weeks	21-28 weeks	29 weeks or more
United States	40	5	8	8	18	62
California and Arizona	8	12	0	0	12	75
Florida and Texas	32	3	9	9	19	59

The importance of additional shifts may be appraised in terms of the relative importance of man-hours worked on the first shift. In each of the selected workweeks studied, no more than one-fourth of the multiple-shift establishments used less than 50 percent of the weekly man-hours on the first shift (Table 35). The proportion of multiple shift establishments with less than 50 percent of the man-hours on the first shift in the Florida-Texas area fluctuated between 14 and 25 percent for five of the six selected workweeks. Except for the peak week, the proportions remained constant during the other selected workweeks in the California-Arizona area.

Weekly Man-hours

All establishments--Workweeks of over 40 hours accounted for four-fifths of the aggregate man-hours in the peak week and seven-tenths in the twentieth highest week. Higher proportions were registered in the Florida-Texas area in each of the selected workweeks (Table 36).

The proportion of man-hours worked in workweeks of "Over 50 hours" for all processors declined from 51 percent in the peak week to 37 percent in the seventh highest week and 30 percent in the twentieth week. Since the bulk of the industry is located in the Florida-Texas area, the proportions there closely paralleled those for the industry as a whole. The proportions in the California-Arizona area, however, were significantly lower--ranging from 23 percent in the peak week to 6 percent in the twentieth week.

Shift operation--Establishments operating multiple shifts accounted for over five-sixths of the total weekly hours in each of the selected workweeks. The proportions were relatively stable in both areas--ranging around 90 percent in the Florida-Texas area and 80 percent in

the California-Arizona area during the selected weeks (Table 37). Since the overwhelming majority of the man-hours were worked in multiple shift establishments during the selected weeks, the distribution of man-hours by weekly hours of work for multiple shift establishments did not differ significantly from that for all establishments. Between multiple and single shift establishments, however, there was a marked difference in the prominence of long workweeks. These differences indicate that the use of multiple shifts in this industry did not lessen the importance of long workweeks. In the peak week, for example, workweeks of over 40 hours comprised 82 percent of the man-hours in multiple shift establishments compared to 72 percent in single shift establishments (Tables 38 and 39). In most of the other selected weeks, the differential was even greater.

Establishment size--Four-fifths of the weekly man-hours in this industry were accounted for by establishments that had 250 or more nonsupervisory employees during the peak week of operation. Establishments employing 100-249 employees accounted for an additional eighth of the aggregate hours in each of the selected workweeks.

Establishment size in peak workweek	Percent of aggregate hours worked					
	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week
All establishments	100	100	100	100	100	100
Under 100	8	7	7	7	7	7
100-249 employees	13	13	13	13	13	12
250 or more employees	79	80	80	80	80	81

The proportions of aggregate hours accounted for by [illegible]s of over 40 hours in the larger employment-size groups--100 [illegible]50 or more--were similar, ranging from about four-fifths in the [illegible]ek to about seven-tenths in the twentieth week (Appendix Table [illegible]owever, workweeks of over 50 hours were of lesser importance [illegible] 250 or more employment-size group, comprising a declining prop[illegible] aggregate hours--from 48 percent in the peak week to 27 perc[illegible] e seventeenth week.

Man-hours in Excess of 40 a Week

In the peak week, one-fifth of the total man-hou[illegible]ed hours worked in excess of 40 by individual employees. T[illegible]ion of hours worked beyond 40 declined gradually to 15 percent [illegible]th week and remained at 14 percent in the following selected w[illegible]le 40). The proportions in the Florida-Texas area were not not[illegible]fferent from

those for all establishments. The proportions in the California-Arizona area, however, declined from 10 percent in the peak week to 5 percent in the twentieth week.

The average number of hours worked in excess of 40 per employee working over 40 hours a week declined from 14 in the peak week to 10 in the twentieth highest week. The corresponding averages for processors in the Florida-Texas area were practically the same as for all processors.

Area	Average man-hours in excess of 40 per employee working over 40 hours					
	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week
United States	14	12	11	11	10	10
California and Arizona	10	10	9	8	9	8
Florida and Texas	15	12	11	11	10	10

Significant proportions of man-hours in excess of 40 a week were accounted for by hours worked beyond 50 per week, hours in excess of the exemptions limitations provided in sections 7(c) and 7(d) of the Fair Labor Standards Act. These proportions ranged from 49 percent in the peak week to 37 percent in the twentieth week.

Area	Man-hours worked in excess of 50 as a percent of man-hours worked in excess of 40					
	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week
United States	49	43	41	39	38	37
California and Arizona	29	29	20	0	40	0
Florida and Texas	49	44	41	40	38	38

Overtime Hours at Premium Rates

Fourteen percent of the aggregate hours worked in the peak week were paid for at premium rates of not less than one and one-half times the regular rate. The proportion declined to 11 percent by the tenth week and then went up to about 12 percent by the twentieth week. The proportions in

the Florida-Texas area were about the same while those for the California-Arizona area were much lower, ranging from 9 percent in the peak week to 3 percent in the twentieth week.

Area	Percent of total man-hours paid for at premium rates					
	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week
United States	14	13	11	12	13	12
California and Arizona	9	8	6	6	7	3
Florida and Texas	15	13	12	13	13	13

In workweeks of over 40 but not more than 50 hours, the proportions of man-hours over 40 paid for at premium rates in the United States ranged from 67 percent in the peak week to 81 percent in the tenth highest week. Virtually all of the hours over 40 were paid for at premium rates in the fourteenth, seventeenth and twentieth weeks (the proportions may include some premium pay for hours other than those in excess of 40 per week) (Table 41). Since establishments are most likely to use the 20 weeks of overtime exemption during the 20 most active weeks, these high ratios clearly indicate that the partial overtime exemptions under sections 7(c) and 7(d) were not fully utilized.

In workweeks exceeding 50 hours, the proportions of man-hours over 40 paid for at premium rates were also high, ranging from two-thirds in the peak week upwards to well over four-fifths in the twentieth week. Moreover, man-hours paid for at premium rates in workweeks of over 50 hours exceeded the number of hours worked in excess of 50 (Table 42). This would seem to indicate that some of the hours worked within the exemptions limits under sections 7(c) and 7(d) were compensated for at premium rates.

Weekly Hours of Work

In the peak week, 72 percent of all nonsupervisory employees worked more than 40 hours. The proportion of employees working over 50 hours exceeded the proportion working 40 hours or less--39 and 28 percent, respectively (Table 43). However, the proportion working over 50 declined sharply after the peak week while the proportions working 40 hours or less increased. By the seventeenth highest week, the proportion of employees working

over 50 hours had declined to 20 percent and the proportion working 40 hours or less had increased to 46 percent.

In the Florida-Texas area, the proportion of nonsupervisory employees working over 40 hours in the peak week was almost three times the proportion working 40 hours or less--74 percent as against 26 percent. However, by the twentieth week the proportions were 60 and 40 percent, respectively. In contrast, in the California-Arizona area, most employees worked 40 hours or less in all of the selected workweeks--55 percent in the peak week and 73 percent in the twentieth week.

Relationship Between Daily and Weekly Hours of Work

The proportion of employees working beyond the 10-hour daily overtime standard under sections 7(c) and 7(d) was substantially larger than the proportion working over 50 hours a week in all the selected workweeks. The proportion of employees working over 10 hours a day did not vary significantly after the peak week--45 percent in the peak week, 40 percent in the seventh week, and 37 percent in the twentieth highest week. However, the proportion of employees working over 10 hours a day in workweeks of over 50 hours dropped from 34 percent in the peak week to less than half that amount in the twentieth week. The proportion of nonsupervisory employees that worked 8 or fewer hours every day varied from 20 to 27 percent in the selected workweeks.

	Percent of nonsupervisory employees working				
	8 or fewer hours every day	Over 8 at least one day but never over 10 hours	Over 10 hours at least one day	Over 50 hours a week	
Selected workweek				Total	Over 10 hours at least one day
Peak week	20	36	45	39	34
7th highest week	20	41	40	26	21
10th highest week	25	37	38	21	18
14th highest week	23	39	38	23	19
17th highest week	27	36	37	20	16
20th highest week	25	39	37	20	16

Collective Bargaining Agreements

Collective bargaining agreements were in effect in 20 of the 65 establishments in the industry. These agreements covered 6,500 employees, or 36 percent of the peak week nonsupervisory work force (Appendix Table 0-1). All of the agreements covered plant workers and all but one covered maintenance workers, as well (Appendix Table 0-2). None of the contracts covered clerical workers.

Of the 6,500 employees covered by collective bargaining agreements, 5,900 were in establishments with agreements providing premium pay after specified daily and/or weekly hours of work. Over half of these employees were covered by agreements that provided for overtime pay after 40 hours a week or a weekly/daily combination of after 40 and 8 hours (Appendix Table L-42).

Collective bargaining agreements, generally, provide for overtime pay after standard weekly and/or daily hours and this industry was no exception. Fewer than three establishments had agreements containing a waiver of the overtime provision (Appendix Table L-43).

Table 33. Percent of establishments using 50 percent and 75 percent of annual man-hours in specified number of weeks, United States and selected areas, 1968

Area	Number of establishments	Percent of establishments using 50 percent of man-hours in: 8 weeks or less	9-14 weeks	15-20 weeks	21 weeks or more	Percent of establishments using 75 percent of man-hours in: 8 weeks or less	9-14 weeks	15-20 weeks	21 weeks or more
United States	65	2	22	51	26	2	0	8	91
California and Arizona	20	0	5	45	50	0	0	0	100
Florida and Texas	45	2	29	53	16	2	0	11	87

Note: Details may not add to 100 percent because of rounding.

Source: Surveys conducted by the U.S. Department of Agriculture for WHPC.

Table 34. Nonsupervisory employment and average nonsupervisory employment per operating establishment, selected workweeks, United States and selected areas, 1968

Area	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week	Lowest week
			Nonsupervisory employment (in thousands)				
United States	18.1	17.1	17.0	15.9	15.4	14.3	4.5
California and Arizona	1.6	1.5	1.6	1.6	1.5	1.5	1.1
Florida and Texas	16.5	15.5	15.4	14.3	13.9	12.8	3.4
			Average employment per establishment				
United States	278	263	262	245	241	223	75
California and Arizona	80	75	80	80	75	75	69
Florida and Texas	367	344	342	318	316	291	77

Note: Details may not add to totals because of rounding.

Source: Surveys conducted by the U.S. Department of Agriculture for WHPC.

Table 35. Percent distribution of multiple shift establishments by the proportion of aggregate hours accounted for by the first shift, selected workweeks, United States and selected areas, 1968

Area	Number of establishments	Percent with specified proportion of man-hours on first shift: Less than 50	50 to 64	65 to 79	80 or more	Number of establishments	Percent with specified proportion of man-hours on first shift: Less than 50	50 to 64	65 to 79	80 or more
		Peak week					7th highest week			
United States	39	18	41	26	15	35	14	49	34	3
California and Arizona	8	12	38	50	0	7	14	43	43	0
Florida and Texas	31	19	42	19	19	28	14	50	32	4
		10th highest week					14th highest week			
United States	35	23	46	20	11	35	14	49	29	9
California and Arizona	7	14	43	43	0	7	14	43	43	0
Florida and Texas	28	25	46	14	14	28	14	50	25	11
		17th highest week					20th highest week			
United States	35	6	54	20	20	34	21	44	18	18
California and Arizona	7	14	43	43	0	7	14	43	43	0
Florida and Texas	28	4	57	14	25	27	22	44	11	22

Note: Details may not add to 100 percent because of rounding.

Source: Surveys conducted by the U.S. Department of Agriculture for WHPC.

Table 36. Percent of aggregate hours worked by employees working specified weekly hours, selected workweeks, United States and selected areas, 1968

Area	Over 40 hours	Over 40 and including 50 hours	Over 50 hours	Over 40 hours	Over 40 and including 50 hours	Over 50 hours
		Peak week			7th highest week	
United States	81	30	51	77	41	37
California and Arizona	52	28	23	52	33	19
Florida and Texas	83	30	54	80	41	38
		10th highest week			14th highest week	
United States	70	38	31	69	36	33
California and Arizona	45	31	14	45	32	14
Florida and Texas	72	39	33	72	36	35
		17th highest week			20th highest week	
United States	67	37	29	70	40	30
California and Arizona	48	35	14	32	26	6
Florida and Texas	69	38	31	75	42	32

Note: Details may not add to totals because of rounding.

Source: Surveys conducted by the U.S. Department of Agriculture for WHPC.

Table 37. Percent of aggregate hours worked in establishments classified by number of shifts in operation, selected workweeks, United States and selected areas, 1968

Area	Aggregate hours (in thousands)	Percent worked in: Multiple shift establishments	Percent worked in: Single shift establishments	Aggregate hours (in thousands)	Percent worked in: Multiple shift establishments	Percent worked in: Single shift establishments
		Peak week			7th highest week	
United States	871	86	14	764	85	15
California and Arizona	69	80	20	66	77	23
Florida and Texas	801	87	13	698	86	14
		10th highest week			14th highest week	
United States	715	87	13	659	87	12
California and Arizona	65	77	23	63	78	21
Florida and Texas	650	88	12	596	88	12
		17th highest week			20th highest week	
United States	621	88	12	563	88	12
California and Arizona	61	80	21	60	80	18
Florida and Texas	560	89	11	504	89	11

Note: Details may not add to 100 percent because of rounding.

Source: Surveys conducted by the U.S. Department of Agriculture for WHPC.

Table 38. Percent of aggregate man-hours worked by employees working specified weekly hours, selected workweeks, United States and selected areas, 1968

Area	Aggregate hours (in thousands)	Percent worked by employees who worked: Over 40 hours	Over 40 and including 50 hours	Over 50 hours	Aggregate hours (in thousands)	Percent worked by employees who worked: Over 40 hours	Over 40 and including 50 hours	Over 50 hours
		Peak week				7th highest week		
United States	751	82	30	53	652	80	43	37
California and Arizona	55	50	33	16	51	52	36	16
Florida and Texas	696	85	29	56	601	82	44	39
		10th highest week				14th highest week		
United States	620	71	39	32	576	72	38	34
California and Arizona	50	42	33	9	49	47	37	11
Florida and Texas	570	73	40	34	527	74	38	36
		17th highest week				20th highest week		
United States	545	70	40	30	498	73	42	31
California and Arizona	49	50	39	11	48	36	29	7
Florida and Texas	497	72	40	32	450	77	44	34

Note: Details may not add to totals because of rounding.

Source: Surveys conducted by the U.S. Department of Agriculture for WHPC.

Table 39. Percent of aggregate man-hours worked by employees working specified weekly hours, selected workweeks, United States and selected areas, 1968

Area	Aggregate hours (in thousands)	Percent worked by employees who worked: Over 40 hours	Over 40 and including 50 hours	Over 50 hours	Aggregate hours (in thousands)	Percent worked by employees who worked: Over 40 hours	Over 40 and including 50 hours	Over 50 hours
	Peak week				7th highest week			
United States	119	72	30	42	112	61	26	34
California and Arizona	14	61	11	50	15	56	25	31
Florida and Texas	105	74	33	41	97	62	27	35
	10th highest week				14th highest week			
United States	95	63	33	30	82	48	19	30
California and Arizona	15	54	25	30	13	38	14	24
Florida and Texas	80	65	35	30	69	50	20	31
	17th highest week				20th highest week			
United States	75	40	18	22	65	47	28	19
California and Arizona	13	40	18	22	11	16	12	4
Florida and Texas	63	41	18	23	54	53	31	22

Note: Details may not add to totals because of rounding.

Source: Surveys conducted by the U.S. Department of Agriculture for WHPC.

Table 40. Number and percent of man-hours worked in excess of 40, selected workweeks, United States and selected areas, 1968

Area	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week
			Number of man-hours (in thousands)			
United States	187	135	105	95	85	76
California and Arizona	7	7	5	5	5	3
Florida and Texas	180	128	99	90	80	73
			Percent of total man-hours			
United States	21	18	15	14	14	14
California and Arizona	10	10	8	8	9	5
Florida and Texas	22	18	15	15	14	14

Note: Details may not add to totals because of rounding.

Source: Surveys conducted by the U.S. Department of Agriculture for WHPC.

Table 41. Percent of man-hours in excess of 40 paid for at premium rates in workweeks of over 40 hours, selected workweeks, United States and selected areas, 1968

Area	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week
			Workweeks of over 40 and including 50 hours			
United States	67	73	81	100	104	100
California and Arizona	100	67	67	100	67	50
Florida and Texas	59	73	83	100	110	106
			Workweeks of over 50 hours			
United States	66	70	75	79	85	86
California and Arizona	80	75	67	100	67	100
Florida and Texas	66	69	75	79	86	85

Note: The proportions may include some premium pay for daily overtime hours.

Source: Surveys conducted by the U.S. Department of Agriculture for WHPC.

Table 42. Man-hours worked in excess of 50 hours and man-hours paid for at premium rates in workweeks of over 50 hours, selected workweeks, United States and selected areas, 1968

Area	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week
			Man-hours worked in excess of 50			
United States	91	58	43	37	32	28
California and Arizona	2	2	1	0	2	0
Florida and Texas	89	56	41	36	30	28
			Man-hours paid for at premium rates			
United States	107	71	59	58	53	48
California and Arizona	4	3	2	2	2	1
Florida and Texas	103	68	57	56	51	47

Note: Details may not add to totals because of rounding.

Source: Surveys conducted by the U.S. Department of Agriculture for WHPC.

Table 43. Percent of nonsupervisory employees working specified weekly hours, selected workweeks, United States and selected areas, 1968

Area	40 hours or less	Over 40 and including 50 hours	Over 50 hours	40 hours or less	Over 40 and including 50 hours	Over 50 hours
	Peak week			7th highest week		
United States	28	32	39	33	41	26
California and Arizona	55	27	18	55	30	14
Florida and Texas	26	33	41	31	42	27
	10th highest week			14th highest week		
United States	42	37	21	43	34	23
California and Arizona	62	28	10	62	28	10
Florida and Texas	40	38	22	41	34	24
	17th highest week			20th highest week		
United States	46	34	20	44	37	20
California and Arizona	60	31	10	73	22	5
Florida and Texas	45	34	21	40	38	21

Note: Details may not add to 100 percent because of rounding.

Source: Surveys conducted by the U.S. Department of Agriculture for WHPC.

IV. Handling of Fresh Fruits and Vegetables

Seasonality of Operation

Length of active season--During 1968, a total of 86.5 million man-hours were worked by nonsupervisory employees in the handling of fresh fruits and vegetables industry. Fifty percent of the annual man-hours were accounted for in the 11 most active weeks and 75 percent were used in the 21 most active weeks of operation.

The annual man-hours were equally divided between establishments whose fresh fruit and vegetable handling activities primarily involved fruit and those whose handling activities primarily involved vegetables (Appendix Table M-1). Moreover, there appeared to be no significant difference in seasonality between the two classifications.

On a regional basis, industry man-hours were concentrated in the West and South, 62 and 28 percent, respectively. The pattern of seasonality for the West corresponded to that for the Nation as a whole while the South was somewhat more seasonal. The Northeast, with 4 percent of total man-hours, was the least seasonal.

Region and area	Annual man-hours	Number of most active weeks accounting for 50 percent of annual man-hours	Number of most active weeks accounting for 75 percent of annual man-hours
United States	*86,539,000	11	21
Northeast	3,640,000	21	36
South	24,389,000	8	19
North Central	4,793,000	14	26
West	53,721,000	11	20
California and Arizona	34,040,000	12	20
Florida and Texas	16,021,000	10	20

* Details do not add to total because of rounding.

During the 20 most active weeks, the weeks in which the exemptions under sections 7(c) and 7(d) would most likely be claimed, three-fourths of the annual man-hours were used. Among the regions, the

proportions ranged from almost a half in the Northeast to three-fourths in the South and West.

Region and area	Percent of annual man-hours used in 10 most active weeks	Percent of annual man-hours used in 20 most active weeks
United States	50	75
Northeast	26	48
South	59	77
North Central	41	64
West	48	76
California and Arizona	46	75
Florida and Texas	53	75

Of the 2,900 establishments engaged in handling fresh fruits and vegetables during 1968, about two-fifths operated year-round, ranging from almost two-thirds of the establishments in the Northeast to one-fourth in the South.

Region and area	Number of establishments	Establishments operating 52 weeks	
		Number	Percent
United States	2,900	1,128	39
Northeast	175	112	64
South	1,225	327	27
North Central	252	129	51
West	1,248	560	45
California and Arizona	582	243	42
Florida and Texas	527	228	43

Nationwide, over two-fifths of the establishments used 50 percent of the annual man-hours in 8 weeks or less and over four-fifths of the establishments used 50 percent in 20 weeks or less (Table 44). Three-tenths of the establishments used 75 percent of the annual man-hours in 8 weeks or less and three-fifths of the establishments used 75 percent of the annual man-hours in 20 weeks or less. Regionally, the South was the most seasonal with three-fifths of the establishments accounting for 50 percent of the annual man-hours in 8 weeks or less and one-half of the establishments accounting for 75 percent of the annual man-hours in 20 weeks or less. The Northeast region was the least seasonal with almost half of the establishments requiring 21 or more weeks to use 50 percent of their annual man-hours.

Employment trends--Variations in the level of employment is another indication of seasonality. Nonsupervisory employment engaged in the handling of fresh fruits and vegetables declined from 134.5 thousand in the peak week to 97.3 thousand in the seventh highest week or 28 percent (Table 45). By the twentieth highest week, employment had dropped to 49.4 thousand or 63 percent below the seasonal peak. The greater degree of seasonality in the South is clearly indicated by the more rapid decline in employment--41 percent from the peak to the seventh highest week and 77 percent from the peak to the twentieth highest week.

Average nonsupervisory employment per operating establishment was 46 in the peak week and 8 in the lowest week of operation. Average employment was highest in the West--60 in the peak week and 35 in the twentieth week--followed by the South with an average employment of 42 in the peak week and 21 in the twentieth week. In the California-Arizona and Florida-Texas areas, average employment per operating establishment was substantially greater than in the parent regions in all of the selected workweeks.

Multiple shift operations--Multiple shifts were not important in this industry. Only 2 percent of the 2,900 establishments operated with multiple shifts at some time during the year, and half of these operated with multiple shifts for 8 weeks or less.

Region and area	Multiple shift establishments					
		Percent operating two or more shifts				
	Number	1-8 weeks	9-14 weeks	15-20 weeks	21-28 weeks	29 weeks or more
United States	63	51	11	13	0	25
Northeast	8	0	0	100	0	0
South	24	67	0	0	0	33
North Central	-	-	-	-	-	-
West	31	52	23	0	0	26
California and Arizona	24	67	0	0	0	33
Florida and Texas	8	0	0	0	0	100

Weekly Man-hours

All establishments--Workweeks of over 40 hours accounted for 77 percent of the aggregate man-hours in the peak week, 61 percent in the seventh highest and 45 percent in the twentieth highest week (Table 46). In the West and South, the proportions roughly paralleled those for the Nation. In North Central region, the proportions of man-hours worked by employees working over 40 hours in the selected weeks were relatively stable, ranging from a half to three-fifths.

The proportion of man-hours worked in workweeks of "Over 50 hours" declined significantly after the peak week--from 41 percent in the peak week to 20 percent in the seventh week, 10 percent in the seventeenth week and 13 percent in the twentieth week. The rate of decline varied from region to region with the South showing the sharpest drop in the proportion of man-hours worked in workweeks of "Over 50 hours," from 55 percent in the peak week to 24 percent in the seventh highest week.

Establishment size--Ninety percent of the weekly man-hours in this industry were accounted for by establishments that had 25 or more non-supervisory employees during the peak week of operation. Establishments employing 25-99 employees accounted for about half of the aggregate hours in all of the selected workweeks.

Establishment size in peak workweek	Percent of aggregate hours worked					
	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week
All establishments	100	100	100	100	100	100
1-7 employees	1	1	2	2	2	2
8-24 employees	9	8	9	9	9	11
25-99 employees	48	48	51	52	50	48
100-249 employees	30	32	23	19	19	20
250 or more employees	11	12	16	18	19	20

The proportion of man-hours accounted for by workweeks of over 40 hours in the 25-99 employment-size group declined from 74 percent in the peak week to 55 percent in the seventh week and to 31 percent in the twentieth week (Appendix Table M-58). During the same period, workweeks of over 40 hours showed a sharper drop in terms of man-hours in the 100-249 employee-size group, accounting for four-fifths of the man-hours in the peak week, two-fifths by the tenth week and three-tenths by the twentieth week. In the 250 or more employee-size group, however, the proportions of man-hours accounted for by workweeks of over 40 hours were large and relatively stable, over nine-tenths through the seventeenth highest week then dropping to 84 percent in the twentieth week.

Man-hours in Excess of 40 a Week

In the peak week, 20 percent of the total man-hours represented hours worked in excess of 40 by individual employees. Hours worked beyond 40 dropped to 12 percent by the seventh week and to 7 percent in the seventeenth and twentieth week (Table 47). The proportions of man-hours in excess of 40, on a regional basis, ranged from 25 percent in the South to 15 percent for North Central in the peak week. By the seventh week, regional variations had narrowed considerably.

The average number of hours worked in excess of 40 per employee working over 40 hours a week declined from 14 hours in the peak week to 7 hours in the seventeenth week. The pattern was fairly consistent in two regions and irregular in the other two. For example, the North Central average varied from 16 hours in the peak week to 6 hours in the tenth week, 9 hours in the fourteenth, 7 hours in the seventeenth and 12 hours in the twentieth week. In each of the selected weeks, however, average hours in excess of 40 were highest in the South.

Region and area	Average man-hours in excess of 40 per employee working over 40 hours					
	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week
United States	14	10	8	8	7	8
Northeast	14	11	10	11	9	10
South	19	11	14	14	12	12
North Central	16	10	6	9	7	12
West	11	9	7	6	6	6
California and Arizona	11	9	7	6	6	5
Florida and Texas	20	13	15	15	12	13

Significant proportions of the man-hours in excess of 40 a week were accounted for by hours worked beyond 50 per week, hours in excess of the exemptions limitations provided in sections 7(c) and 7(d) of the Fair Labor Standards Act. These proportions ranged from 43 percent in the peak week to a low of 22 percent in the seventeenth week. As shown below, the proportions in the South exceeded those in the other regions in all of the selected weeks except the seventh and fourteenth weeks.

Region and area	Man-hours worked in excess of 50 as a percent of man-hours worked in excess of 40					
	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week
United States	43	27	29	29	22	27
Northeast	33	25	18	22	22	11
South	50	28	44	41	37	37
North Central	49	25	33	50	22	23
West	34	28	23	22	17	24
California and Arizona	41	31	24	22	22	21
Florida and Texas	55	45	48	44	41	41

Overtime Hours at Premium Rates

Nine percent of the aggregate hours worked during the peak week were paid for at premium rates of not less than one and one-half times the regular rate. The proportion declined to 4 percent in the seventh highest week and remained at about that level in each of the other selected workweeks. Regionally, the Northeast showed the highest proportion of man-hours paid for at premium rates--13 percent in the peak and tenth highest weeks, and slightly less for the other selected workweeks. The proportion in the South was also 13 percent in the peak week, but it dropped sharply thereafter and did not exceed 7 percent in the other selected weeks.

	Percent of total man-hours paid for at premium rates					
Region and area	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week
United States	9	4	4	4	4	4
Northeast	13	12	13	11	12	12
South	13	4	5	5	6	7
North Central	5	3	3	6	6	5
West	7	4	3	3	2	2
California and Arizona	8	5	4	3	3	2
Florida and Texas	14	5	5	5	6	7

In workweeks of over 40 but not more than 50 hours, the proportions of man-hours over 40 paid for at premium rates in the United States varied from one-fifth in the peak week to two-fifths in the twentieth highest week (Table 48). (The proportions may include some premium pay for hours other than those in excess of 40 per week.) Since establishments are most likely to use the 20 weeks of overtime exemption during the 20 most active weeks, these ratios indicate that the partial overtime exemptions under sections 7(c) and 7(d) were not fully utilized.

In workweeks exceeding 50 hours, over half of the man-hours over 40 were paid for at premium rates for all selected workweeks except the seventh and tenth highest weeks--41 and 49 percent, respectively. Since the overtime exemptions under sections 7(c) and 7(d) are limited to 50 and 48 hours a week, respectively, all hours worked in excess of these standards are required to be compensated for at premium rates. However, this may not have been the case in the peak and seventh highest weeks (Table 49). The payment at straight-time rates for some of the hours worked in excess of 50 a week may reflect the utilization of the unlimited overtime exemption under section 13(b)(16) which applies to employees engaged in certain transporting activities.

Weekly Hours of Work

Long workweeks were relatively common in this industry. In the peak week, 65 percent of the nonsupervisory employees worked over 40 hours (Table 50). The proportions working such hours declined to 47 percent in the seventh highest week, 35 percent in the fourteenth week, and 31 percent in the twentieth week. This decline was primarily due to the change in the proportion of employees working over 50 hours which dropped from 30 percent in the peak week to 7 percent in the twentieth week. The most significant regional variation was in the South where three-fifths of the employees worked over 40 hours in the peak week, two-fifths in the seventh week, and about a fourth in the other selected week.

Relationship Between Daily and Weekly Hours of Work

The proportion of employees working beyond the 10-hour daily overtime standards under sections 7(c) and 7(d) was slightly greater for most of the selected workweeks than the proportion working beyond the 50-hour weekly limitation provided under section 7(c). According to the survey, 29 percent of the employees worked 10 hours at least one day in the peak week and 9 percent did so in the twentieth week, while 30 percent of the employees worked over 50 hours in the peak week and 7 percent in the twentieth highest week. Employees working over 10 hours a day comprised at least two-thirds of the employees working over 50 hours in all but one of the selected weeks studied. In each of the selected workweeks, however, a significant proportion of employees worked 8 or fewer hours every day, 39 percent in the peak week, 54 percent in the seventh highest, and 68 percent in the twentieth highest week.

	Percent of nonsupervisory employees working				
		Over 8 hours		Over 50 hours a week	
Selected workweeks	8 or fewer hours every day	at least one day but never over 10 hours	Over 10 hours at least one day	Total	Over 10 hours at least one day
Peak week	39	32	29	30	21
7th highest week	54	32	15	13	7
10th highest week	63	25	11	9	6
14th highest week	68	21	11	8	6
17th highest week	66	27	8	6	4
20th highest week	68	22	9	7	5

Collective Bargaining Agreements

Collective bargaining agreements were in effect in 222 of the 2,900 establishments in the industry, or 8 percent. These agreements covered 8,800 nonsupervisory employees (Appendix Table O-1). Four-fifths of the

collective bargaining agreements covered plant workers, over a fifth covered maintenance workers, and less than one-tenth covered clerical workers (Appendix Table O-2).

Of the 8,800 employees covered by collective bargaining agreements, 7,700 were in establishments with agreements providing premium pay for overtime work (Appendix Table M-91). Sixty-seven percent of the unionized workers were covered by contracts that contained both a daily and weekly standard, 43 percent by contracts that provided for premium pay after 8 hours a day and 40 hours a week, and 24 percent after 8 hours a day and 48 hours a week. An additional 10 percent of the workers were covered by contracts providing overtime pay after 40 hours a week and 9 percent after 8 hours a day.

Collective bargaining agreements generally provide for premium overtime pay after standard weekly and/or daily hours. For the most part, this was true for this industry. Only 16 of the 206 establishments with contracts requiring overtime pay had a waiver of overtime pay provisions. The waivers affected a fifth of the covered employees for a 15-20 week period (Appendix Table M-92).

Table 44. Percent of establishments using 50 percent and 75 percent of annual man-hours in specified number of weeks, United States and regions, 1968

Region and area	Number of establishments	Percent of establishments using 50 percent of man-hours in: 8 weeks or less	9-14 weeks	15-20 weeks	21 weeks or more	Percent of establishments using 75 percent of man-hours in: 8 weeks or less	9-14 weeks	15-20 weeks	21 weeks or more
United States	2,900	43	31	11	15	32	13	13	41
Northeast	175	9	31	14	46	9	0	18	73
South	1,225	60	21	10	10	50	11	8	31
North Central	252	26	23	19	32	3	23	6	68
West	1,248	36	43	10	12	24	16	19	42
California and Arizona	582	39	35	19	7	26	15	15	45
Florida and Texas	527	42	31	12	15	33	12	12	43

Note: Details may not add to totals because of rounding.

Source: Surveys conducted by the U.S. Department of Agriculture for WHPC.

Table 45. Nonsupervisory employment and average nonsupervisory employment per operating establishment, selected workweeks, United States and regions, 1968

Region and area	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week	Lowest week
			Nonsupervisory employment (in thousands)				
United States	134.5	97.3	77.6	66.7	60.9	49.4	8.8
Northeast	2.5	2.4	2.1	2.1	2.0	1.9	1.2
South	51.7	30.6	19.8	16.0	12.9	12.0	2.4
North Central	5.7	5.2	4.2	3.1	2.9	2.9	.6
West	74.6	59.2	51.5	45.5	43.1	32.6	4.6
California and Arizona	46.1	35.2	30.9	27.1	26.4	23.0	3.2
Florida and Texas	31.4	19.7	16.6	13.4	11.2	10.5	1.3
			Average employment per establishment				
United States	46	39	34	31	30	26	8
Northeast	14	14	13	13	13	12	11
South	42	33	25	24	22	21	7
North Central	23	21	17	12	12	12	5
West	60	51	47	44	43	35	8
California and Arizona	79	65	63	59	59	56	13
Florida and Texas	60	41	38	32	30	28	6

Note: Details may not add to totals because of rounding.

Source: Surveys conducted by the U.S. Department of Agriculture for WHPC.

Table 46. Percent of aggregate hours worked by employees working specified weekly hours, selected workweeks, United States and regions, 1968

Region and area	Over 40 hours	Over 40 and including 50 hours	Over 50 hours	Over 40 hours	Over 40 and including 50 hours	Over 50 hours
	Peak week			7th highest week		
United States	77	36	41	61	41	20
Northeast	70	15	55	59	25	34
South	79	24	55	61	37	24
North Central	52	13	39	52	20	32
West	78	46	32	62	45	17
California and Arizona	80	45	35	64	47	17
Florida and Texas	73	14	59	41	20	21
	10th highest week			14th highest week		
United States	57	41	16	50	35	15
Northeast	68	37	31	52	17	35
South	45	21	24	42	19	23
North Central	57	41	16	57	33	24
West	60	48	12	51	41	10
California and Arizona	64	52	12	55	46	9
Florida and Texas	44	17	28	42	15	26
	17th highest week			20th highest week		
United States	49	39	10	45	32	13
Northeast	64	34	29	62	29	33
South	46	27	19	44	24	20
North Central	60	43	17	56	29	27
West	48	42	6	44	36	8
California and Arizona	54	47	7	48	41	7
Florida and Texas	45	24	21	39	18	21

Note: Details may not add to totals because of rounding.

Source: Surveys conducted by the U.S. Department of Agriculture for WHPC.

Table 47. Number and percent of man-hours worked in excess of 40, selected workweeks, United States and regions, 1968

Region and area	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week
			Number of man-hours (in thousands)			
United States	1,202	444	258	190	154	120
Northeast	21	12	11	9	9	9
South	592	149	68	51	41	35
North Central	35	20	12	12	9	13
West	555	263	167	119	94	63
California and Arizona	360	162	111	74	65	43
Florida and Texas	337	62	60	43	34	27
			Percent of man-hours			
United States	20	12	9	8	7	7
Northeast	19	13	13	11	12	12
South	25	14	12	11	10	10
North Central	15	10	8	10	9	13
West	17	11	9	7	6	6
California and Arizona	17	12	9	7	7	6
Florida and Texas	24	10	12	11	10	10

Note: Details may not add to totals because of rounding.

Source: Surveys conducted by the U.S. Department of Agriculture for WHPC.

Table 48. Percent of man-hours in excess of 40 paid for at premium rates in workweeks of over 40 hours, selected workweeks, United States and regions, 1968

Region and area	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week
			Workweeks of over 40 and including 50 hours			
United States	21	21	29	29	32	40
Northeast	67	100	100	100	75	100
South	11	18	67	69	64	73
North Central	33	25	50	100	100	40
West	25	20	19	16	16	24
California and Arizona	33	23	20	12	12	16
Florida and Texas	14	46	50	43	44	50
			Workweeks of over 50 hours			
United States	52	41	49	51	58	58
Northeast	67	89	86	100	100	100
South	57	32	42	39	56	62
North Central	34	31	38	50	40	38
West	46	45	53	55	55	53
California and Arizona	51	57	65	81	56	67
Florida and Texas	60	53	42	43	60	71

Source: Surveys conducted by the U.S. Department of Agriculture for WHPC.

Table 49. Man-hours worked in excess of 50 hours and man-hours paid for at premium rates in workweeks of over 50 hours, selected workweeks, United States and regions, 1968

Region and area	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week
			Man-hours worked in excess of 50			
United States	512	122	74	55	34	32
Northeast	7	3	2	2	2	1
South	298	41	30	21	15	13
North Central	17	5	4	6	2	3
West	190	74	38	26	16	15
California and Arizona	149	51	27	16	14	9
Florida and Texas	184	28	29	19	14	11
			Man-hours paid for at premium rates			
United States	476	103	71	57	40	39
Northeast	12	8	6	7	6	6
South	286	27	22	15	15	15
North Central	11	5	3	5	2	3
West	167	63	41	30	17	16
California and Arizona	135	50	33	25	14	12
Florida and Texas	184	26	21	15	15	15

Note: Details may not add to totals because of rounding.

Source: Surveys conducted by the U.S. Department of Agriculture for WHPC.

Table 50. Percent of nonsupervisory employees working specified weekly hours, selected workweeks, United States and regions, 1968

Region and area	40 hours or less	Over 40 and including 50 hours	Over 50 hours	40 hours or less	Over 40 and including 50 hours	Over 50 hours
	Peak week			7th highest week		
United States	36	35	30	53	34	13
Northeast	44	14	42	57	20	23
South	39	23	39	57	28	14
North Central	62	12	26	62	17	22
West	32	45	23	50	39	11
California and Arizona	30	45	25	48	42	10
Florida and Texas	47	13	40	75	14	11
	10th highest week			14th highest week		
United States	58	33	9	64	27	8
Northeast	45	32	24	60	14	25
South	75	13	12	78	11	11
North Central	58	33	10	57	28	14
West	52	40	8	60	33	6
California and Arizona	47	45	8	55	40	6
Florida and Texas	76	11	13	79	9	12
	17th highest week			20th highest week		
United States	64	30	6	69	24	7
Northeast	50	29	21	52	24	24
South	73	18	10	76	15	9
North Central	52	36	11	63	21	16
West	63	33	4	68	27	4
California and Arizona	57	39	4	65	31	4
Florida and Texas	74	16	10	80	11	10

Note: Details may not add to 100 percent because of rounding.

Source: Surveys conducted by the U.S. Department of Agriculture for WHPC.

Sugar Cane Processing

Introduction

The survey conducted for the Wage and Hour and Public Contracts Divisions by the Department of Agriculture covered sugar cane processing in three States--Florida, Louisiana, and Hawaii--and Puerto Rico. The number of establishments in these areas whose primary activity during 1968 was sugar cane processing and the number of workers employed during the peak workweek in each establishment are shown below.

Areas	Number of Establishments	Employees in peak week
Florida	9	1,800
Puerto Rico	18	5,400
Louisiana	43	5,000
Hawaii	23	9,000

There are three overtime exemptions which, separately or in combination, apply to sugar cane processing. Section 13(b)(15) of the Fair Labor Standards Act provides a complete overtime exemption from the maximum hours provisions of the Act for--

> any employee engaged in . . . the processing of . . . sugarcane. . .into sugar (other than refined sugar) or syrup.

The processing of sugarcane to which the 13(b)(15) exemption applies and in which the employee must be engaged in order to come within the exemption is considered to begin when the processor receives the cane for processing and to end when the cane is processed "into sugar (other than refined sugar) or syrup." The exemption does not apply to office and general clerical work, hauling raw sugar or molasses away from the mill and any work outside the grinding season.

Sugar cane processors in Louisiana may also qualify for the partial overtime exemption under section 7(c) of the Act and those in Puerto Rico and Florida may qualify for the partial overtime exemptions under both sections 7(c) and 7(d). (Neither section 7(c) nor section 7(d) applies to sugar cane processing in Hawaii.)

Sugar cane processors in Louisiana qualifying for the section 7(c) exemption are not required to pay premium overtime rates for hours worked in excess of 40 per week for any 14 weeks in a calendar year. However, even during exempt weeks, employees must be compensated at not less than one and one-half times their regular rate of pay for all hours in excess of 10 per day or 50 per week.

Processors in Puerto Rico and Florida qualifying for both the section 7(c) and 7(d) exemptions may claim 10 weeks of exemption under each section or an aggregate of 20 exempt weeks during the calendar year. During exempt workweeks, however, the processor is required to compensate employees at not less than one and one-half times their regular rate of pay for hours worked in excess of 10 per day or for all weekly hours worked in excess of 50 for 10 weeks (section 7(c)) or 48 for an additional ten weeks (section 7(d)).

The partial overtime exemptions under sections 7(c) and 7(d) generally apply on an establishment basis, and may be claimed for all employees, including office, clerical, and general maintenance workers, exclusively engaged in the operations specified in the industry determination. Accordingly, sugar cane processors in Puerto Rico, Louisiana and Florida have some employees whose work falls within the section 13(b)(15) exemption and the sections 7(c) and 7(d) exemptions. For such employees, processors would probably claim exemption under section 13(b)(15) since it has no limitation on daily or weekly hours, rather than under section 7(c) or 7(d).

Perishability and Seasonality

The perishability of sugar cane limits the length of the processing period to that of the harvesting season. Since cut sugar cane can be kept for only a very few days without significant loss of sucrose and there are no specific controls on perishability, special provisions concerning harvesting are relevant. For example, in Louisiana the Grower-Processor Committee recommended that cane be milled three days after cutting, that cuttings be limited to what could be processed in two or three days, and that excessive amounts of cane in storage at mills be avoided. 1/

Mechanized harvesting increases the deterioration rate of cut cane, especially if the cane is cut into small lengths. Experiments conducted on deterioration rates indicate that the sucrose loss in cut-up cane is about 2-1/2 percent greater than that for whole stalks four days after harvesting. 2/ Moreover, storage of mechanically harvested cane for longer than 24 hours results in a loss of recoverable sugar. Factors affecting the deterioration of cane stored in piles include (1) the length of time in the pile; (2) the moisture content; (3) the original condition of the cane; (4) the size of pile; (5) the amount of extraneous matter; (6) the length of time burned before piling; and (7) the temperature and humidity. 3/

1/ Louisiana Sugarcane, Louisiana State University and Agricultural Mechanical College, Agricultural Extension Publication #1184, April 1955, p. 26.
2/ Sugar Y Azucar Yearbook, 1962, p. 58
3/ "Cane Deterioration in a Storage Pile," The Gilmore Hawaii Sugar Manual 1947-48, pp. 27-28.

Operations

Among the four areas, the sugar cane processing season varies both as to length and time of year due to differing harvest periods. Factors which influence the availability of sugarcane for processing include the variety of cane planted, frequency of planting, climatic conditions, and harvesting methods. The number of acres planted to sugar cane and the processors' control over such acreage are other important factors affecting the availability of cane for processing. In Hawaii, for example, the processors are also the growers. Consequently, outside of government quotas, they directly control the number of acres planted and can follow a planting schedule which provides for continuous harvesting. Most of the processors in Florida and Louisiana also grow part of the sugar cane they grind. 1/

Except in Hawaii, climatic conditions and the maturation period of sugar cane lead to seasonal planting and harvesting cycles which limit processor control over the length of the processing season. Each area studied has its set of factors--outlined below--that tend to control either the length of the processing season or the day-to-day delivery of sugar cane to the processor.

Florida. Almost 90 percent of Florida's sugar cane acreage is in Palm Beach County, a protected area that seldom suffers killing freezes but often experiences bad weather during the November to May harvesting season. 2/ Since relatively slower hand harvesting still predominates in Florida, bad weather tends to lengthen the harvesting season. 3/ As a result, cane is sometimes cut when it is past its peak in sugar content and mill operations are delayed. Machine harvesting, which is faster and can amply supply the mill's processing capacity, has been tried to offset bad weather delays. However, mechanized harvesting has proven difficult because the cane's shallow root system is easily uprooted from the loose soil. Since cane is not replanted annually in Florida, root damage adversely affects the next cane crop. Successful experiments have resulted in the development of several types of tires for harvesting machines which are suited for the terrain, topping systems to remove the bulk of foliage, and parting, chopping and pickup systems for cane blown down by the frequent hurricanes in the area. 4/

1/ U.S. Department of Agriculture, Marketing Research Division, Report No. 294, Trends in the U.S. Sugar Industry Production Processing and Marketing, p. 21.
2/ The Sugar Journal, January 1967, p. 24.
3/ South Florida Sugar Industry, Florida State Board of Health, Jacksonville, Florida, 1964, p. 2.
4/ The Sugar Journal, op. cit., p. 52.

Puerto Rico. This area has two sugar cane planting seasons and one harvesting season. The timing involved in these operations depends on the rainy season which extends from July to December. The first or "spring" planting is from January to May and the second or "fall" planting is from August to October. Harvesting of the "spring" planting occurs after 11 to 14 months growth and is done simultaneously with "spring" planting. The "fall" planting harvest occurs after 15 to 18 months growth. The harvest of both "spring" and "fall" cane runs from January to June. 1/

Mechanized harvesting of sugar cane has encountered some difficulties due to the broken terrain and small size of Puerto Rican sugar cane farms. Nevertheless, that part of the cane crop harvested mechanically increased from 6 percent in 1954 to 39 percent in 1962. In some parts of Puerto Rico more than three-fifths of the cane was harvested mechanically in 1962. 2/

Due to the shortage of land in Puerto Rico, cane is not rotated with other crops. As a result, attention is focused on improving cultivation and irrigation as a means of increasing sugar cane production. For example, a new overhead irrigation system which has the ability to control the total application of water to within .04 inches of the desired amount has proven effective in areas that were previously considered too poor to produce cane. 3/ A recent government program provides incentive payments for improved agricultural practices that will increase sugar cane production. 4/

Louisiana. The sugar cane growing area is confined mostly to the nineteen parishes of southern Louisiana called the "Sugar Bowl." Dry seasons, humid weather, hurricanes and early freezing temperatures greatly influence the length of the harvesting season. 5/

The harvesting of sugar cane in Louisiana usually begins around the middle of October depending on whether or not the sucrose is sufficient to justify milling and ends around the middle of January. Throughout the Louisiana cane belt, inclement weather often interrupts harvesting operations; consequently, once the cane is ripe, harvesting is accelerated to avoid weather damage. 6/

1/ Estado Libre Asociado de Puerto Rico, Departmento Del Trabajo, La Industria Azucarera en Su Fase Agricola, Julio 1963, p. 4.
2/ Ibid., pp. 27, 28, 29.
3/ The Sugar Journal, August 1968, p. 27.
4/ The Sugar Journal, August 1967, p. 28.
5/ Futch, Catherine B., Louisiana's Sugar Industry, 1958, Dissertation p. 2.
6/ Louisiana Sugarcane, op. cit., p. 25.

Sugar cane harvesting in Louisiana has been mechanized for many years. Moreover, new and improved methods are continually introduced to speed cane delivery to the processors. For the most part, these improvements come about through the cooperative efforts of the growers and processors. Similarly, their cooperative efforts have contributed toward balanced field and mill operations.

Hawaii. Sugar cane production in Hawaii is a continuous year-round operation due to the favorable climate which permits crop cycling. Since the processors own and lease the land used for the production of sugar cane, they have direct control over the planting, cultivating, and harvesting operations.

Depending on such conditions as mechanical damages to the field during harvesting or the ratooning ability of new varieties, fields are replanted to cane every six to ten years. A crop of cane grows for two years before it is ready for harvesting. 1/ This prolonged maturity reduces weather risks because the effects of bad weather in one year may be offset, at least in part, by better weather in the following year. 2/

Harvesting of sugar cane in Hawaii is highly mechanized. After the leaves are burned off the cane stalk, harvesting machines cut, gather and load the cane for delivery to the mills. Since harvesting operations are continuous, processing mills are in operation almost year-round, thus providing relatively stable employment.

Technological Improvement

Technological advancements in the sugar cane industry that affect the seasonality of operations begin with harvesting. The greater use of mechanical harvesters and the ever increasing efficiency of harvesting and handling equipment have intensified the delivery of cane to the mills during peak harvesting time. Moreover, processors have met this increased volume by improving processing capabilities and controls over raw cane delivery.

Numerous technological improvements have allowed processing mills to improve operations and increase daily output with a substantial decrease in the number of processing days. For instance, an automatic cane carrier that is controlled by the weight of the cane regulates the volume of cane to ensure a steady [illegible]ed to the mills. In the past, the regulation was the duty of an operator and the results varied depending on the skill of the individual. 3/

1/ The Gilmore Hawaii Sugar Manual, op. cit., p. 127.
2/ The Sugar Journal, August 1967, p. 20.
3/ The Sugar Journal, October 1966, p. 42.

Output per hour worked also has been increased through the addition of automatic processing equipment such as a new type of crusher that increases sucrose extraction and reduces maintenance time. 1/

Automatic control of the processing operations has meant increased production, greater efficiency and economy, and a better, more uniform product. Sugar mills have installed automatic systems to measure and control such process variables in unit operations as clarification, melting, evaporation and crystallizing. 2/ The continuous centrifugals installed in most mills also improve operating efficiency and reduce labor requirements.

Chemicals are effectively serving to decrease man-hours in equipment cleansing operations. 3/ They are also used to accelerate the crystallization process and to preserve sugar juice for processing at a future time. 4/

Diversification and Seasonality

For the most part, establishments in the sugar cane industry process only one commodity--sugar cane. The chief product is raw sugar. The by-products of sugar cane--molasses, blackstrap molasses, and bagasse--are produced concurrently with the manufacture of raw sugar.

A few sugar cane processors in Louisiana and Puerto Rico also refine their own sugar cane. A small number of raw sugar mills engage in the processing of bagasse into other products such as pulp for paper. In Florida, some processors run a cattle operation in conjunction with their milling activities. They utilize the blackstrap molasses which is fortified with other elements as a feed for the cattle. 5/ Tasks connected with putting the mill and yards into condition for the next season of grinding operation also extend employment periods for some employees. 6/

Seasonality of Operation

Important indicators of seasonality for which data were collected in the survey include length of active operating season, short-term employment trends, and the extent of multiple shift operations.

Length of active season--During 1968, a total of 93 plants primarily engaged in sugar cane processing--9 in Florida, 18 in Puerto Rico, 43 in

1/ The Sugar Journal, April 1966, p. 76.
2/ The Sugar Journal, October 1968, p. 28.
3/ The Sugar Journal, August 1967, p. 47.
4/ The Sugar y Azucar Yearbook, 1965, p. 66.
5/ The Sugar Journal, January 1967, p. 40.
6/ The Sugar Problem in Puerto Rico, Association of Sugar Producers of Puerto Rico, p. 37.

Louisiana, and 23 in Hawaii--used 32.3 million man-hours. Sugar cane processors in Florida and Puerto Rico used 50 percent of annual man-hours in their 16 most active weeks. In Louisiana, processors operated at a much more intensive pace using half of annual man-hours in only 9 weeks. Processing in Hawaii, which accounted for more than half of total annual man-hours, was the least seasonal with the 23 most active weeks required to use 50 percent of annual man-hours.

Area	Annual man-hours	Number of most active weeks accounting for 50 percent of annual man-hours	Number of most active weeks accounting for 75 percent of annual man-hours
Florida	2,775,000	16	29
Puerto Rico	6,566,000	16	29
Louisiana	5,894,000	9	23
Hawaii	17,063,000	23	36

In Florida and Puerto Rico, sugar cane processors used three-fifths of annual man-hours in their 20 most active weeks, the period in which the partial overtime exemption available to them under sections 7(c) and 7(d) would most likely be claimed. By comparison, processors in Louisiana used two-thirds of annual man-hours during the 14 most active weeks in which the partial overtime exemption available to the industry under section 7(c) was most likely to have been claimed.

Area	Percent of annual man-hours used in 10 most active weeks	Percent of annual man-hours used in 14 most active weeks	Percent of annual man-hours used in 20 most active weeks
Florida	34	47	62
Puerto Rico	33	46	61
Louisiana	58	66	72
Hawaii	23	32	45

In Hawaii, the ranking of workweeks showed that in the twentieth week processing plants were still using 88 percent of the man-hours used in the peak week. In contrast, man-hours worked in Louisiana declined between the peak and the fourteenth week by 82 percent. Weekly man-hours in Puerto Rico declined 7 percent between the peak week and the tenth week and in Florida 15 percent. Moreover, by the twentieth week, aggregate man-hours in Puerto Rico had declined 38 percent and in Florida the decline was 44 percent.

The extremely short processing season in Louisiana is manifested by the fact that almost all of the plants processed sugar cane for no more than 14 weeks. In Florida most of the plants processed cane from 15 to 20

weeks and the season ran from 15 to 28 weeks in Puerto Rico. In Hawaii, sugar cane processing is basically a year-round activity.

Area	Number of establishments	Percent of establishments processing sugar cane for: 8 weeks or less	9-14 weeks	15-20 weeks	21-28 weeks	29 weeks or more
Florida	9	0	22	78	0	0
Puerto Rico	18	0	11	44	44	0
Louisiana	43	9	88	2	0	0
Hawaii	23	0	0	0	0	100

Although the processing of sugar cane occurs over a very short period in Louisiana, other activities such as refining served to extend plant operations. This is shown by the fact that three-fifths of the processors in Louisiana required 21 weeks or more to use three-fourths of their annual man-hours (Table 51). In Florida and Puerto Rico, plants were also in operation for periods that extended beyond the time spent in processing of sugar cane. In both areas, nine-tenths of the processors required more than 20 weeks to use three-fourths of their annual man-hours.

Employment trends--Variations in the level of employment is another indication of seasonality of operations. However, when workweeks were ranked by man-hours, only in Louisiana was there a sharp employment decline during the 20 most active weeks. Beginning with 5,300 nonsupervisory employees in the peak week, employment dropped to 4,000 in the tenth week and to 1,500 by the twentieth week (Table 52). Employment declined gradually in Florida and Puerto Rico during the 20 highest weeks. In Hawaii, employment declined even more slowly from 9,000 in the peak week to 8,500 in the twentieth week. Moreover, even in the lowest week, 4,900 nonsupervisory employees were still employed in Hawaii.

Multiple shift operations--When feasible, establishments often operate multiple shifts to utilize their processing facilities more fully, reduce the length of individual employee workweeks and occasionally shorten the length of the overall processing period. All but 1 of the 93 sugar cane processing plants in the industry operated two or more shifts during some part of 1968.

Ninety-eight percent of the plants in Louisiana operated two or more shifts for no more than 14 weeks of the season. In Florida, 89 percent of the plants operated two or more shifts from 15 to 20 weeks. In Puerto Rico, 44 percent of the plants used multiple shifts from 15 to

20 weeks and the same proportion did so for 21 to 28 weeks. All plants in Hawaii used two or more shifts for 29 weeks or longer.

Area	Multiple shift establishments					
		Percent operating two or more shifts for				
	Number	1-8 weeks	9-14 weeks	15-20 weeks	21-28 weeks	29 weeks or more
Florida	9	0	11	89	0	0
Puerto Rico	18	0	11	44	44	0
Louisiana	42	10	83	2	0	0
Hawaii	23	0	0	0	0	100

The data on the number of man-hours worked on the first shift in multiple shift establishments indicate that the additional shifts were most important in Puerto Rico, followed by Florida, Louisiana, and then Hawaii. In Puerto Rico, for example, about nine-tenths of the sugar cane processing plants used less than 50 percent of man-hours on the first shift during their peak week (Table 53). Two-thirds of Florida's processing plants used less than 50 percent of man-hours on the first shift in their peak week and a third used from 65 to 79 percent of man-hours on the first shift. Slightly over one-half of the processors in Hawaii used 80 percent or more of man-hours on the first shift during their peak week.

Weekly man-hours

All establishments--Virtually all of the man-hours in Louisiana processing plants in the peak and seventh week were worked by nonsupervisory employees working more than 40 hours a week (Table 54). By the fourteenth highest week, the proportion had dropped sharply to 37 percent, reflecting the shortness of the processing season in Louisiana. The proportions of aggregate hours accounted for by workweeks of over 40 hours in Florida closely paralleled those in Louisiana through the seventh week, but the proportions in Florida remained high--about nine-tenths--through the seventeenth week before declining to two-thirds in the twentieth week. In Puerto Rico, workweeks of over 40 hours accounted for 65 percent of the aggregate hours in the peak week, declining to 57 percent in the fourteenth highest week and to 45 percent in the twentieth week. In Hawaii, hours worked in workweeks of over 40 hours comprised a slightly declining but significant proportion of aggregate hours in each of the selected workweeks, ranging from 72 percent in the peak week to 66 percent in the twentieth week.

During the peak, seventh, and tenth weeks, the vast majority of the hours worked in workweeks of over 40 hours in Louisiana extended past the 50-hour statutory limit of the exemption under section 7(c). In Florida, the same held true through the fourteenth week.

In Puerto Rico, workweeks of over 50 hours were not as prevalent; they accounted for one-sixth to one-fifth of aggregate man-hours in each of the selected workweeks. In Hawaii, total hours worked by employees working over 50 hours accounted for about a third of aggregate man-hours in the selected workweeks.

Shift operations--Because of the prevalence of multiple shifts in all four areas, the distributions of aggregate hours by weekly hours of work in multiple shift establishments were very similar to those for all establishments.

Plant size--In Louisiana, the 20 largest processors, those with 100 to 249 nonsupervisory workers in the peak week, accounted for about three-fifths of aggregate man-hours in each of the six selected weeks (Appendix Table N-35). The remaining two-fifths were used by the 23 establishments with 25 to 99 nonsupervisory employees. Workweeks of over 40 hours were of about the same importance in both employment-size classes through the tenth week. Thereafter, such workweeks comprised a lesser proportion of aggregate hours in the larger plants--no more than three-tenths compared with two-fifths or more in the smaller plants.

Eleven sugar cane processing plants in Puerto Rico employed 250 or more nonsupervisory employees in the peak week and seven employed 100 to 249 workers (Appendix Table N-34). The larger processors accounted for about three-fourths of aggregate hours worked in each of the six selected workweeks. The proportion of aggregate hours worked in workweeks of over 40 hours decreased from 63 percent to 46 percent between the peak and twentieth week in the larger size plants and from 70 to 43 percent in the smaller plants.

All of the processing plants located in Florida employed 100 or more nonsupervisory employees in the peak week; seven employed 100-249 employees and two 250 or more employees (Appendix Table N-33).

Of the 33 sugar cane processing plants in Hawaii, 10 employed 250 or more nonsupervisory employees in the peak week, eight had 100 to 249, and five had from 25 to 99 workers (Appendix Table N-36). The largest processors accounted for 85 percent of the 406,000 aggregate hours worked in the peak week in all plants. About the same ratio obtained in the other selected weeks studied. The proportions of aggregate man-hours accounted for by employees working over 40 hours ranged from two-thirds to three-fourths in plants with 250 or more employees during the six selected weeks. These proportions were higher than the corresponding proportions for the 100 to 249 employee-size group, but with the exception of the peak week, were lower than those in the smallest plants.

Man-hours in Excess of 40 a Week

Hours worked in excess of 40 by individual employees represented extremely large percentages of total man-hours in sugar cane processing plants in

Louisiana--50 percent in the peak week, 46 percent in the seventh week, and 33 percent in the tenth week (Table 55). By the fourteenth week, however, such hours had declined sharply to only 5 percent of total hours. In Florida, hours worked in excess of 40 declined from 32 percent in the peak week to 15 percent by the twentieth week with the sharpest drop occurring after the seventeenth week. In the comparable period, hours in excess of 40 declined from 15 to 10 percent in Hawaii and from 13 to 11 percent in Puerto Rico.

Average man-hours in excess of 40 per employee working over 40 hours was highest in Louisiana--42 in the peak week. By the fourteenth week, the limit of the exemption period under section 7(c), the average had dropped to 6 hours. Florida had the second highest average number of man-hours in excess of 40 per employee working over 40 hours--20 in the peak week declining to 11 in the twentieth week. The average for Puerto Rico was 10 man-hours in the peak week, down to 9 in the intervening weeks and up to 12 in the twentieth week. In Hawaii, average man-hours in excess of 40 per employee working over 40 were the same as in Puerto Rico through the fourteenth week, but unlike Puerto Rico continued downward.

	Average man-hours in excess of 40 per employee working over 40 hours					
Area	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week
Florida	20	18	17	17	14	11
Puerto Rico	10	9	9	9	9	12
Louisiana	42	35	26	6	8	6
Hawaii	10	9	9	9	7	7

During the peak, seventh, and tenth weeks in sugar cane processing plants in Louisiana, man-hours in excess of 50 per individual employee accounted for 77, 72, and 64 percent, respectively, of the man-hours worked in excess of 40; man-hours over 50 worked in the other three selected weeks studied comprised less than 2 percent of total man-hours.

In Florida, man-hours worked in excess of 50 as a percent of man-hours worked in excess of 40 declined from 50 percent in the peak week to 38 percent in the twentieth week. Comparable hours in Hawaii were 37 percent in the peak and only 11 percent in the twentieth week. In

Puerto Rico, hours over 50 as a percent of hours over 40 fluctuated from 12 to 40 percent during the six selected weeks studied.

Area	Man-hours worked in excess of 50 as a percent of man-hours worked in excess of 40					
	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week
Florida	50	44	44	41	35	38
Puerto Rico	24	16	17	19	12	40
Louisiana	77	72	64	1/	1/	1/
Hawaii	37	31	31	26	11	11

1/ The number of man-hours worked in excess of 50 rounded to zero.

Overtime Hours at Premium Rates

During the peak, seventh, and tenth weeks, 1 percent or less of total man-hours were paid for at premium rates of not less than one and one-half times the regular rate in Louisiana's sugarcane processing industry. Moreover, in the other selected weeks only about 3 percent of total aggregate man-hours were paid for at premium rates. This suggests that sugar cane processing plants in Louisiana for the most part claimed the overtime exemptions available under sections 7(c) and 13(b)(15). In Puerto Rico, 10 percent of total man-hours were paid for at premium rates in the peak week, 9 percent in the fourteenth week and 11 percent in the twentieth week. In Florida, 18 percent of total man-hours were paid for at premium rates in the peak week and 12 percent in the twentieth week. In Hawaii, man-hours paid for at premium rates as a percent of total man-hours was 15 percent in the peak week, declining to 11 percent in the twentieth week.

Area	Percent of total man-hours paid for at premium rates					
	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week
Florida	18	16	16	17	12	12
Puerto Rico	10	8	9	9	7	11
Louisiana	1/	1	1/	3	3	3
Hawaii	15	14	14	13	11	11

1/ Less than 0.5 percent.

The relationship between man-hours over 40 and man-hours paid for at premium rates in workweeks of over 40 hours clearly indicates that sugar cane processors in Louisiana made maximum use of the overtime exemptions available to them. Through the tenth week, less than 1 percent of the man-hours over 40 were paid for at premium rates in Louisiana (Table 56); the proportions were two-thirds or more in the other three selected weeks but the number of hours in excess of 40 was minimal (the proportions may include some premium pay for hours other than those in excess of 40 per week).

In Florida and Puerto Rico, where sugar cane processors may claim 20 weeks of partial exemption under section 7(c) and 7(d) as well as the unlimited exemption under section 13(b)(15), the available exemptions were markedly underutilized. This was more pronounced in Puerto Rico where the proportions of man-hours over 40 paid for at premium rates ranged from 65 to 87 percent during the selected weeks studied. In Florida, such proportions ranged from 53 to 88 percent. It is noteworthy that man-hours paid for at premium rates in workweeks of over 50 hours, the exemption limit under section 7(c), exceeded the man-hours worked in excess of 50 in all selected workweeks in both Florida and Puerto Rico (Table 57). Processors in Hawaii could not use the unlimited exemption under section 13(b)(15) since all of them are covered by union agreements requiring time and one-half after 40 hours a week and 8 hours a day.

Weekly Hours of Work

Among the four areas, there were large variations in the distribution of employees by weekly hours of work similar to those noted for the distribution of aggregate hours by weekly hours of work. In Louisiana, a small fraction of the employees worked 40 hours or less during the peak and seventh weeks; the overwhelming majority worked over 50 hours (Table 58). The proportion working 40 hours or less climbed to almost a third in the tenth week, two-thirds in the fourteenth and three-fourths in the seventeenth and twentieth weeks.

In Puerto Rico plants, the proportion of employees working 40 hours or less ranged from 46 percent in the peak week to 68 percent in the twentieth week. The proportion working over 50 hours never exceeded 15 percent and those in the middle category, working over 40 hours up to 50 hours, varied from one-fifth to two-fifths of the nonsupervisory work force.

In Florida, the proportion of employees working 40 hours or less increased gradually from 10 percent in the peak week to 46 percent in the twentieth week and the proportion working over 50 hours declined from 84 percent in the peak week to 25 percent in the twentieth week.

In Hawaii sugar cane processing plants, the distribution of employees by weekly hours of work remained fairly stable during the six selected

weeks studied. In the peak week, for example, 35 percent of the employees worked 40 hours or less, 37 percent worked over 40 but no more than 50 hours, and 28 percent worked over 50 hours. In the twentieth week, the distribution of hours worked in the same hours categories was 41, 37, and 22 percent.

Relationship Between Daily and Weekly Hours of Work

In the peak week of operation in Louisiana's sugar cane processing industry, 91 percent of the employees worked over 50 hours a week; 87 percent of the employees worked over 10 hours at least one day and over 50 hours a week (Table 59). By the fourteenth week, the corresponding proportions working such hours were down to 4 percent and 2 percent, respectively.

In Florida, 84 percent of the employees worked over 50 hours during the peak week, but only 13 percent worked over 10 hours at least one day in workweeks of over 50 hours. This suggests that a large proportion of employees worked up to seven days in the peak week since 82 percent of all employees worked 8 or fewer hours a day. The relationship between daily hours in excess of 10 worked in conjunction with workweeks of over 50 hours remained basically the same through the fourteenth week. By the twentieth week, only 25 percent of the employees worked over 50 hours a week and 8 percent worked over 10 hours at least one day in workweeks of over 50 hours.

During the peak week in Puerto Rico, only 15 percent of employees worked over 50 hours and half of these employees worked over 10 hours at least one day. By the fourteenth week, the proportion of employees working over 50 hours a week dropped to 10 percent but increased to 13 percent in the twentieth week. Those working over 10 hours at least one day in workweeks of over 50 hours declined slightly except for the twentieth week when they increased to 9 percent, surpassing even the peak week.

The relationship of weekly and daily hours in Hawaii's sugar cane processing plants has no significance since neither the section 7(c) nor the section 7(d) seasonal overtime exemption applies.

Collective Bargaining Agreements

All four areas had collective bargaining agreements which included overtime pay provisions (Appendix Table O-1).

All 23 sugar cane processing plants in Hawaii had collective bargaining agreements which provided premium overtime pay after 40 hours a week and 8 hours a day to all except 100 of the 9,000 plant, maintenance, clerical, and "other" employees (Appendix Tables N-72 and O-2).

Seventeen of the 18 sugar cane processing plants in Puerto Rico had collective bargaining agreements. Of the 5,000 employees in these plants,

4,500 were covered under 29 collective bargaining agreements. Plant workers and maintenance workers were the major occupational groups covered as only 5 agreements applied to clerical workers. The agreements provided for premium overtime pay after 40 hours a week and 8 a day for 1,300 workers, and after 48 hours a week and 8 a day for 2,900 workers. Three-hundred employees worked in establishments without premium overtime pay provisions (Appendix Table N-70).

Of the nine sugar cane processing plants in Florida, five had collective bargaining agreements covering plant and maintenance employees. Such agreements provided premium overtime pay after 40 hours a week to 200 employees and after 48 hours a week to 600 employees (Appendix Table N-69).

In Louisiana, only 6 of the 43 sugar cane processing plants had collective bargaining agreements covering 200 of the 900 nonsupervisory employees in the six plants. Maintenance workers were covered in all six agreements, however, plant workers were included in only one agreement. These agreements provided overtime pay after 40 hours a week and 8 a day; however, waivers nullified such overtime pay provisions for 8 to 14 weeks (Appendix Tables N-71 and N-75).

Table 51. Percent of establishments using 50 percent and 75 percent of annual man-hours in specified number of weeks, by area, 1968

Area	Number of establishments	Percent of establishments using 50 percent of man-hours in: 8 weeks or less	9-14 weeks	15-20 weeks	21 weeks or more	Percent of establishments using 75 percent of man-hours in: 8 weeks or less	9-14 weeks	15-20 weeks	21 weeks or more
Florida	9	11	11	78	0	0	0	11	89
Puerto Rico	18	0	28	72	0	0	11	0	89
Louisiana	43	49	51	0	0	0	19	21	60
Hawaii	23	0	0	0	100	0	0	0	100

Note: Details may not add to 100 percent because of rounding.

Source: Surveys conducted by the U. S. Department of Agriculture for WIPC.

Table 52. Nonsupervisory employment and average nonsupervisory employment per operating establishment, by area, selected workweeks, 1968

Area	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week	Lowest week
			Nonsupervisory employment (in thousands)				
Florida	1.8	1.7	1.6	1.6	1.5	1.4	0.3
Puerto Rico	5.4	5.4	5.3	5.2	4.7	3.7	1.2
Louisiana	5.0	4.8	4.0	1.8	1.6	1.5	1.0
Hawaii	9.0	8.9	8.9	8.5	8.6	8.5	4.9
			Average employment per establishment				
Florida	200	189	178	178	167	156	33
Puerto Rico	300	300	294	289	261	206	67
Louisiana	116	112	93	42	37	35	26
Hawaii	391	387	387	370	374	370	213

Source: Surveys conducted by the U. S. Department of Agriculture for WEPC.

Table 53. Percent distribution of multiple shift establishments by the proportion of aggregate hours accounted for by the first shift, by area, selected workweeks, 1968

Area	Number	Percent with specified proportion of man-hours on first shift: Less than 50	50 to 64	65 to 79	80 or more	Number	Percent with specified proportion of man-hours on first shift: Less than 50	50 to 64	65 to 79	80 or more
		Peak week					7th highest week			
Florida	9	67	0	33	0	9	78	22	0	0
Puerto Rico	18	89	11	0	0	18	89	11	0	0
Louisiana	1/	1/	1/	1/	1/	1/	1/	1/	1/	1/
Hawaii	18	0	28	17	56	23	22	30	13	35
		10th highest week					14th highest week			
Florida	1/	1/	1/	1/	1/	1/	1/	1/	1/	1/
Puerto Rico	18	89	11	0	0	18	78	22	0	0
Louisiana	30	10	87	3	0	2/	2/	2/	2/	2/
Hawaii	23	22	30	13	35	23	30	22	13	35
		17th highest week					20th highest week			
Florida	1/	1/	1/	1/	1/	4	75	25	0	0
Puerto Rico	1/	1/	1/	1/	1/	13	54	38	8	0
Louisiana	0	0	0	0	0	0	0	0	0	0
Hawaii	23	30	22	13	35	20	20	25	15	40

1/ Not published to protect confidential data for fewer than 3 single shift establishments.
2/ Not published to protect confidential data for fewer than 3 multiple shift establishments.

Note: Details may not add to 100 percent because of rounding.

Source: Surveys conducted by the U. S. Department of Agriculture for WMPC.

Table 54. Percent of aggregate hours worked by employees working specified weekly hours, by area, selected workweeks, 1968

Area	Over 40 hours	Over 40 and including 50 hours	Over 50 hours	Over 40 hours	Over 40 and including 50 hours	Over 50 hours
		Peak week			7th highest week	
Florida	96	5	90	96	8	88
Puerto Rico	65	44	21	62	45	17
Louisiana	98	2	97	98	6	92
Hawaii	72	36	36	70	36	33
		10th highest week			14th highest week	
Florida	94	12	82	91	10	81
Puerto Rico	61	44	17	57	42	15
Louisiana	84	8	76	37	32	5
Hawaii	71	36	35	69	38	31
		17th highest week			20th highest week	
Florida	88	30	57	67	32	34
Puerto Rico	52	37	15	45	24	21
Louisiana	29	21	8	27	22	5
Hawaii	68	39	29	66	38	27

Note: Details may not add to totals because of rounding.

Source: Surveys conducted by the U. S. Department of Agriculture for WHPC.

Table 55. Number and percent of man-hours worked in excess of 40, by area, selected workweeks, 1968

Area	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week
			Number of man-hours (in thousands)			
Florida	32	27	25	22	17	8
Puerto Rico	29	25	23	21	17	15
Louisiana	197	160	73	3	3	2
Hawaii	60	52	52	46	37	36
			Percent of man-hours			
Florida	32	30	28	27	23	15
Puerto Rico	13	12	11	10	9	11
Louisiana	50	46	33	5	5	4
Hawaii	15	13	14	12	10	10

Source: Surveys conducted by the U. S. Department of Agriculture for WHPC.

Table 56. Percent of man-hours in excess of 40 paid for at premium rates in workweeks of over 40 hours, by area, selected workweeks, 1968

Area	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week
			Man-hours over 40 (in thousands)			
Florida	32	27	25	22	17	8
Puerto Rico	29	25	23	21	17	15
Louisiana	197	160	73	3	3	2
Hawaii	60	52	52	46	37	36
			Man-hours paid for at premium rates in workweeks over 40 hours			
Florida	18	15	14	13	9	7
Puerto Rico	22	17	16	14	11	13
Louisiana	1	1	0	3	2	2
Hawaii	60	52	53	46	37	36
			Percent of man-hours over 40 paid for at premium rates			
Florida	56	56	56	59	53	88
Puerto Rico	76	68	70	67	65	87
Louisiana	1/	1/	1/	100	67	100
Hawaii	100	100	102	100	100	100

1/ Less than one percent.

Source: Surveys conducted by the U. S. Department of Agriculture for WHPC.

Table 57. Man-hours worked in excess of 50 hours and man-hours paid for at premium rates in workweeks of over 50 hours, by area, selected workweeks, 1968

(Man-hours in thousands)

Region	Peak week	7th highest week	10th highest week	14th highest week	17th highest week	20th highest week
Man-hours worked in excess of 50						
Florida	16	12	11	9	6	3
Puerto Rico	7	4	4	4	2	6
Louisiana	152	116	47	0	0	0
Hawaii	22	16	16	12	4	4
Man-hours paid for at premium rates						
Florida	18	15	14	13	8	5
Puerto Rico	12	8	8	7	6	10
Louisiana	1	1	*	1	1	1
Hawaii	46	39	40	33	24	23

* Less than 500 man-hours.

Source: Surveys conducted by the U.S. Department of Agriculture for WHPC.

Table 58. Percent of nonsupervisory employees working specified weekly hours, by area, selected workweeks, 1968

Area	40 hours or less	Over 40 and including 50 hours	Over 50 hours	40 hours or less	Over 40 and including 50 hours	Over 50 hours
	Peak week			7th highest week		
Florida	10	6	84	9	10	82
Puerto Rico	46	39	15	49	39	12
Louisiana	6	2	91	6	9	85
Hawaii	35	37	28	38	36	26
	10th highest week			14th highest week		
Florida	12	14	75	15	12	73
Puerto Rico	50	38	12	56	34	10
Louisiana	31	9	59	68	28	4
Hawaii	37	36	27	37	38	25
	17th highest week			20th highest week		
Florida	20	31	48	45	29	25
Puerto Rico	60	30	10	68	19	13
Louisiana	76	18	6	78	19	4
Hawaii	38	38	24	41	37	22

Note: Details may not add to 100 percent because of rounding.

Source: Surveys conducted by the U. S. Department of Agriculture for WHPC.

Table 59. Percent of nonsupervisory employees working specified daily and weekly hours, by area, selected work weeks, 1968

Area	8 or fewer hours every day	Over 8 hours at least one day but over 10	Over 10 hours at least one day	Over 50 hours a week Total	Over 10 hours at least one day	8 or fewer hours every day	Over 8 hours at least one day but over 10	Over 10 hours at least one day	Over 50 hours a week Total	Over 10 hours at least one day
	Peak week					7th highest week				
Florida	82	4	13	84	13	80	3	17	82	16
Puerto Rico	83	8	9	15	7	84	7	9	12	7
Louisiana	5	3	92	91	87	5	3	92	85	81
Hawaii	43	32	25	28	21	45	30	25	26	21
	10th highest week					14th highest week				
Florida	79	4	16	75	16	82	4	13	73	12
Puerto Rico	85	7	8	12	6	85	6	8	10	6
Louisiana	13	6	81	59	58	58	21	20	4	2
Hawaii	45	29	26	27	21	45	31	24	25	21
	17th highest week					20th highest week				
Florida	83	5	11	48	9	72	17	11	25	8
Puerto Rico	84	7	9	10	6	80	8	12	13	9
Louisiana	64	25	10	6	2	68	23	9	4	1
Hawaii	45	31	24	24	21	48	30	22	22	19

Note: Details may not add to 100 percent because of rounding.

Source: Surveys conducted by the U. S. Department of Agriculture for WHPC.

STATE OVERTIME PAY STANDARDS UNDER MINIMUM WAGE OR MAXIMUM HOURS LAWS FOR EMPLOYEES ENGAGED IN THE HANDLING AND PROCESSING OF AGRICULTURAL OR HORTICULTURAL COMMODITIES

Twenty-one States, the District of Columbia, and Puerto Rico have provisions for premium pay for hours worked in excess of a specified number per day, per week, or both for some or all employee engaged in the processing of agricultural and horticultural commodities. Some of these jurisdictions establish overtime standards under their minimum wage laws or orders while others regulate overtime pay under their maximum hours statutes which generally are applicable to women and minors only. The jurisdictions which provide overtime protection for at least some workers engaged in the processing of agricultural and horticultural products are:

Alaska
Arkansas
California
Colorado
District of Columbia
Hawaii
Idaho
Kentucky
Maine
Massachusetts
Nevada
New Jersey
New Mexico
New York
North Carolina
Oregon
Pennsylvania
Puerto Rico
Rhode Island
Vermont
West Virginia
Wisconsin
Wyoming

The laws of seven States and Puerto Rico require premium pay for hours worked beyond a certain number per day and per week. In Alaska and California, overtime pay is required for work in excess of 8 hours a day and 40 hours a week. In five jurisdictions--Idaho, Nevada, New Mexico, Puerto Rico, and Wyoming--overtime pay is required after 8 hours a day and 48 hours a week. In Wisconsin, premium pay is required after 8 hours a day and 48 hours a week on night work, but for over 9 hours a day and 50 hours a week for day work (Table 60).

Twelve jurisdictions have only weekly overtime standards with overtime pay required for hours ranging from 40 to 55 a week. Arkansas requires premium pay for hours worked over 8 a day and all hours on the 7th day. Oregon requires premium pay for hours worked in excess of 10 hours a day and for all hours on the 7th day. One State--Colorado--has a daily overtime standard only--after 8 hours a day. However, overtime work is permitted only in emergencies.

Twelve jurisdictions extend overtime protection to men as well as women and minors. In 10 jurisdictions, the overtime standard applies only to women and minors or to females only. The North Carolina overtime standard applies to males only.

In seven States--Alaska, Arkansas, Idaho, Kentucky, Maine, North Carolina, and Pennsylvania--a complete overtime exemption is provided for workers engaged in certain agricultural processing activities. In five other States--California, Hawaii, Massachusetts, New Jersey, and Wisconsin--an overtime exemption may be taken for a specified period during the year. In the remaining 11 jurisdictions--Colorado, District of Columbia, Nevada, New Mexico, New York, Oregon, Puerto Rico, Rhode Island, Vermont, West Virginia, and Wyoming--there are no exemptions from the overtime requirement for covered workers.

Table 60. Overtime pay standards applicable to the handling and processing of agricultural or horticultural commodities under State minimum wage or maximum hours laws, February 1, 1970

State	Employees covered	Overtime standards		Exemptions from overtime standards	
		Rate	Hours	Type of establishment or activity	Period
Alaska	All	1 1/2 times the regular rate	Over 8 a day, 40 a week	Handling, packing, storing, drying, pasteurizing, preparing in their raw or natural state, or canning agricultural or horticultural commodities for market or making cheese, butter or other dairy products	Year-round
Arkansas	Women, 16 and over	1 1/2 times the regular rate	Over 8 a day and on 7th day 1/	Cotton factories; processors or canners of fresh fruits and vegetables that are subject to the FLSA	Year-round
California	Women and minors	1 1/2 times the regular rate	Over 8 up to and including 12 a day, over 40 on 6th day, 1st 8 hours on 7th day	Activities exempt from the overtime provisions of FLSA	Exempt workweeks under FLSA
		2 times the regular rate	Over 12 a day and 8 on 7th day		
Colorado	Women	1 1/2 times the regular rate	Over 8 a day 1/		
District of Columbia	All	1 1/2 times the regular rate	Over 40 a week		

See footnotes at end of table.

Table 60. Overtime pay standards applicable to the handling and processing of agricultural or horticultural commodities under State minimum wage or maximum hours laws, February 1, 1970 (Continued)

State	Employees covered	Overtime standards		Exemptions from overtime standards	
		Rate	Hours	Type of establishment or activity	Period
Hawaii	All	1 1/2 times the regular rate	Over 40 a week	First processing of milk, buttermilk, whey, skim milk, or cream into dairy products; processing of sugar cane molasses or sugar cane into sugar (but not refined sugar) or into syrup, or the first processing of or canning or packing of any agricultural or horticultural commodity. Any place of employment primarily engaged in the first processing of, or in the canning of seasonal fresh fruits	20 weeks 2/
Idaho	Women, 16 and over	1 1/2 times the regular rate	Over 8 a day, 48 a week	Packing, curing, canning or drying of perishable fruits and vegetables	Year-round
Kentucky	All	1 1/2 times the minimum rate	Over 44 a week	First processing of dairy products	Year-round
Maine	All	1 1/2 times the regular rat	Over 48 a week	Canning, processing, preserving, freezing, drying, marketing, storing, packing for shipment of perishable foods, agricultural produce, and canning of perishable goods	Year-round
Massachusetts	All	1 1/2 times the regular rate	Over 40 a week	Activities that have been found by the Commissioner of Labor to be seasonal in nature (conducted during a period not to exceed 120 days)	120 days
Nevada	Women	1 1/2 times the regular rate	Over 8 a day, 48 a week 1/		

See footnotes at end of table.

Table 60. Overtime pay standards applicable to the handling and processing of agricultural or horticultural commodities under State minimum wage or maximum hours law, February 1, 1970 (Continued)

State	Employees covered	Overtime standards		Exemptions from overtime standards	
		Rate	Hours	Type of establishment or activity	Period
New Jersey	All	1 1/2 times the regular rate	Over 40 a week	First processing, canning, or packing of perishable or seasonal fresh fruits and vegetables	20 weeks 3/
New Mexico	Women, 16 and over	1 1/2 times the regular rate	Over 8 a day, 48 a week 1/		
New York	All	1 1/2 times the minimum rate	Over 40 a week		
North Carolina	Men 4/	1 1/2 times the regular rate	Over 55 a week	Cotton gins, cottonseed oil mills, tobacco redrying, tobacco warehouses, fruit and vegetable processing plants	Year-round
Oregon	Women and minors	1 1/2 times the regular rate	Over 10 a day, 1st 8 hours on 7th day		
		2 times the regular rate	Over 8 on 7th day		
Pennsylvania	All	1 1/2 times the regular rate	Over 40 a week	Employment within the area of production by a country elevator with 5 or fewer employees; ginning of cotton in any place where it is grown in commercial quantities; and processing of sugar beets, sugar-beet molasses, sugarcane, or maple sap into sugar (other than refined sugar) or syrup	

See footnotes at end of table.