

# CHANGES IN THE LOGGING LABOR FORCE

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### ABSTRACT

Employment in the logging industry dropped 28 percent between 1950 and 1970, while output of industrial roundwood increased 31 percent. Today's loggers are older, better educated, and more skilled. A large proportion are self-employed, many work less than a full year, and a substantial number have incomes below the poverty level. Mechanization of timber harvesting will continue to affect the size and makeup of the labor force.

**KEYWORDS:** forest labor, employment, mechanization

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THE LOGGING LABOR FORCE in the United States has changed during the last two decades—drastically in some ways and to a lesser degree in others. The logger of the 1970s is a little older, better educated, more skilled, and earns more than his 1950 counterpart. While total employment in logging has declined, the number of women and skilled workers has actually increased.

Compared to other manufacturing industries, logging has the lowest proportion of female workers, the highest proportion of Negroes, and an exceptionally large number of workers with limited schooling. In addition, a large proportion of the labor force is self-employed, many work less than a full year, and a substantial number have incomes at or near the poverty level.

One of the few sources of data on persons associated with the logging industry is the Census of Population (*U.S. Bureau of Census 1973*). It provides not only a detailed description of today's logger, but an opportunity to find out how he is changing and to compare him with other workers. In this paper we use the Census to examine the logging labor force with the intent of improving our knowledge of the industry's past and providing a basis for foretelling its future.

*Output up and employment down.*—To supply America's need for wood products in 1970, the logging industry harvested 11.1 billion cubic feet of industrial roundwood (*USDA Forest Service 1973*). This was a 31 percent increase over the 8.5 billion cubic feet harvested in 1950. The key to achieving this dramatic increase in output was the mechanization of nearly all phases of timber harvesting. The chainsaw, hydraulic shear, rubber-tired skidder, portable steel spar, and the multi-functional machines that fell, delimb, bunch, and skid are a few examples of logging equipment that the industry has adopted in its search for better and cheaper ways to harvest timber.

This increased mechanization has affected both the quantity and type of labor needed by the industry. According to the 1970 Census of Population, 123,829 persons were employed in logging, about 48,000 less than in 1950<sup>1</sup> (fig. 1). For every seven loggers who were employed at the time of the Census (in March) there was one who was not working.<sup>2</sup> These individuals had previous experience in logging and were actively searching for work. Many were temporarily out of work because of a seasonal slowdown and were likely to be recalled. Others were probably older workers approaching retirement age or young people with few skills and limited formal education.

In addition to the unemployed, there was a large group of individuals whose last job was in logging, but who were no longer actively seeking employment. Some of these people were workers who had stopped looking for work because they believed their chance of finding a job was nil. Others who had withdrawn from the logging labor force were students, retired workers, housewives, inmates of institutions, and persons doing incidental unpaid family work.

There were over 20,000 of these people who had last worked in the logging industry between 1968 and 1970. Half of them were in the prime working age group, 16 to 44. All together they form a pool of experienced workers that the logging industry might draw from during a time of national emergency.

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<sup>1</sup>The Census of Population estimate of logging employment for 1970 is 63 percent higher than the estimate published by the Annual Survey of Manufacturers, even though both define the logging industry in terms of SIC code 241. The ASM's practice of surveying only establishments with 10 or more employees and the classification of some woods operations as secondary processing industries account for most of the difference in employment statistics.

<sup>2</sup>Nationally, the unemployment rate for men was 4.4 percent in 1970 and 5.1 percent in 1950.

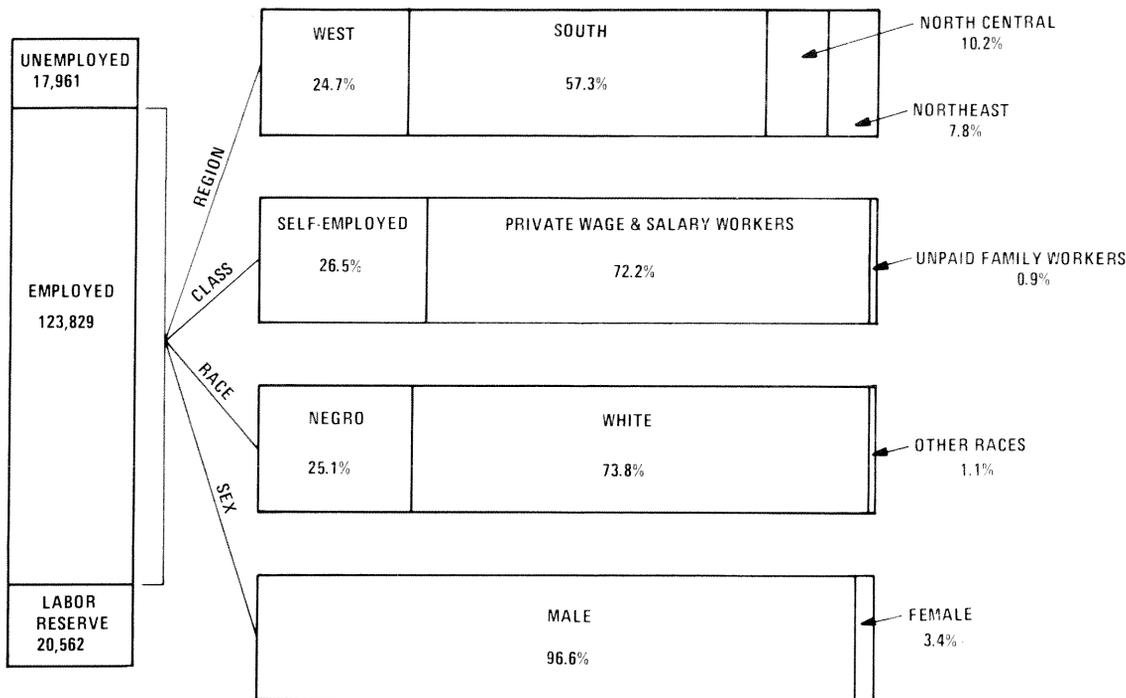


Figure 1.—Distribution of persons associated with the logging industry, 1970.

The surprisingly large number of loggers who were either unemployed or who had stopped looking for jobs and become part of the labor reserve can be attributed mainly to the increased mechanization of timber harvesting. From 1950 to 1970, the output of industrial roundwood increased by 31 percent while logging employment dropped by 28 percent. Fewer workers were needed by the industry to satisfy the increasing demand for roundwood.

The existence of nearly 18,000 unemployed experienced loggers may appear to contradict reports that there is a shortage of forest workers. However, it should be recognized that such reports are usually limited to specific geographic areas and to specific occupations. As the following discussion will show, some regions were affected less than others by the decline in employment, and there was an increasing demand for workers in the skilled occupations. Shortages, therefore, could have developed because the unemployed workers did not possess the skills that were in demand, or because they were not living in the region where the jobs were available.

All major regions of the United States showed a drop in logging employment between 1950 and 1970. The greatest decline occurred in the Northeast and West, where the number of loggers fell by more than 40 percent. In the South, employment increased between 1950 and 1960 but declined thereafter for an overall drop of only 10 percent. Presently, the South ranks first in employment, with 57 percent of all loggers residing in the region (fig. 1).

The sharpest decline in employment occurred among the occupational groups with the least skill (fig. 2). According to the system of classification used by the Bureau of Census, there were 60,000 fewer laborers in 1970 than in 1950. Included in this broad category are chokermen, chasers, fellers, buckers, and teamsters using horses or mules. The number of service workers, who include camp cooks, watchmen, and janitors, also showed a big decline.

All other occupational groups had an increase in employment. The number of foremen, log scalers, mechanics, skidder operators, and other workers in the craftsman group increased by 74

percent. Operatives, who include truck drivers and loader operators, showed an increase of 36 percent. The professional, technical, and managerial group also increased, but not as much as the other occupations. Thus while mechanization has reduced the need for laborers and service workers, it has increased the industry's requirements for supervisors, equipment operators, maintenance workers, and other skilled personnel.

Another change that seems to be linked to mechanization is the increasing number of loggers who operated their own logging crews. From 1950 to 1970, the proportion of self-employed loggers rose from 14.9 to 26.5 percent. To some extent, this may reflect a reduction in optimum crew size and the efforts of paper companies to help loggers become independent businessmen.

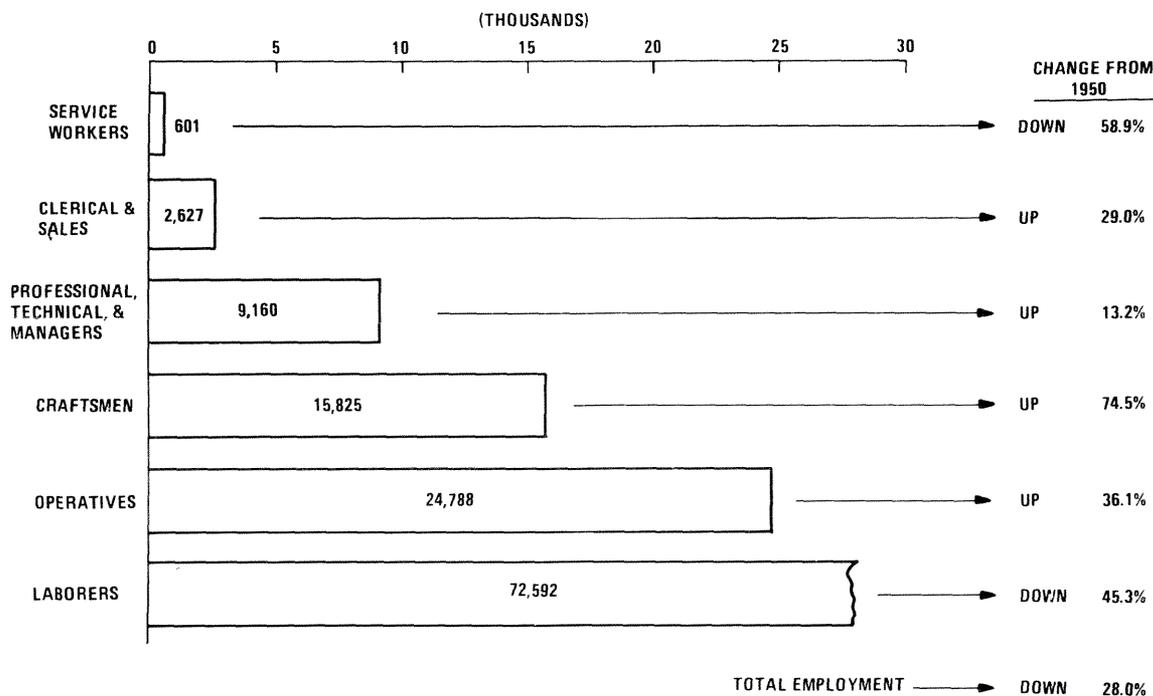
*Few women and many blacks.*—Although the number of women in the logging industry has more than doubled during the last two decades, women still comprise only 3.4 percent of the total work force—the smallest percentage of female workers in any manufacturing industry.

Nearly half of these women occupy white collar jobs such as secretaries, bookkeepers, and office managers. The remainder are employed as truck drivers, log scalers, loader operators, and in other jobs that traditionally have been held by men.

Nationally, one out of every four loggers is black. But almost all of them are in the South, where they account for nearly half of the logging labor force. Because the South has undergone a smaller decline in logging employment than other regions, the number of Negroes in the industry fell by only 10 percent between 1950 and 1970, while white employment dropped by 34 percent.

*Young but getting older*—A distinguishing feature of loggers is that as a group they are slightly younger than workers in other sectors of the wood industry and in most other manufacturing. This is true today as it was in the past. It probably reflects the industry's lower educational requirements and the preference of older workers for jobs that are less demanding physically and afford greater protection from extremes of weather.

Figure 2.—Occupational structure of the employed logging labor force, 1970.



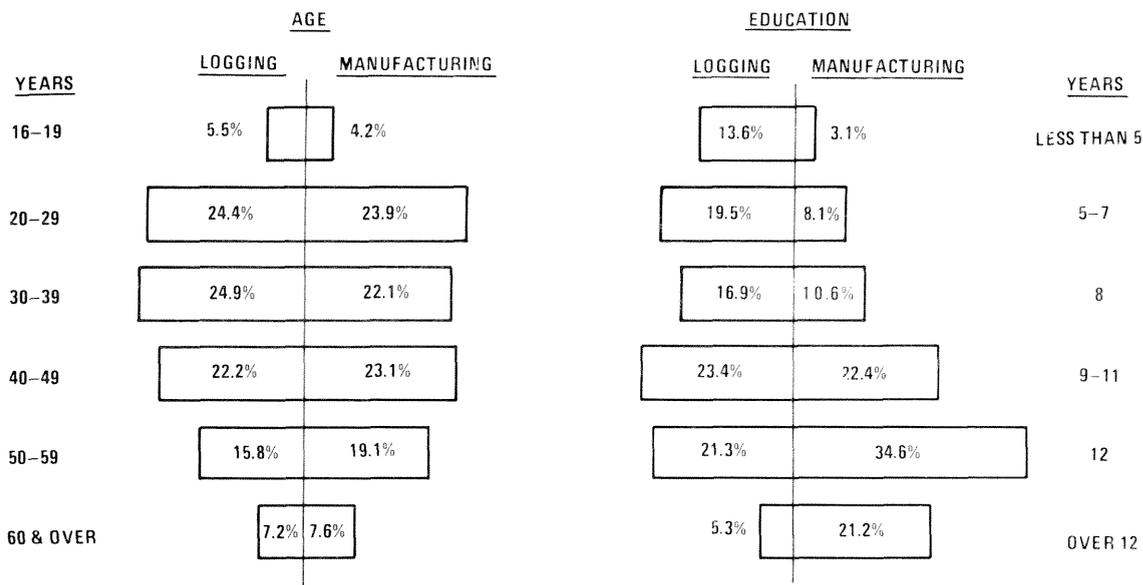


Figure 3.—Age and education distribution of males in logging compared to manufacturing, 1970.

Even though loggers are younger than other manufacturing workers, their median age has been steadily increasing.<sup>3</sup> The median age of men in logging in 1970 was 38—an increase of 2 years since 1950. The fact that there were fewer new job openings than retirements has caused the median to creep upward over time (fig. 3).

There has been a noticeable decline in the proportion of loggers under 20 and over 65 years of age. The first of these changes reflects the current trend toward longer school attendance and the existence of child labor laws that restrict employment of persons under the age of 18. The earlier retirements have been encouraged by more liberal social security benefits and the growth of private pension plans.

*Education lags.*—In the past, logging did not require much formal education. A worker's greatest assets were a strong back and a willingness to learn through on-the-job training. It is therefore understandable that loggers as a group lag behind other workers in schooling.

In 1970, one out of every two men in logging had less than 9 years of formal education. One

out of every three had less than 8 years. Loggers have less formal education than any other group of manufacturing workers.

During recent years, education levels have not increased in logging to the same extent as in other industries. While male workers in manufacturing showed an increase from 1960 to 1970 of over a year in median school years completed, the corresponding increase in logging was only 0.8 years. Women in logging showed an equal change, but their median education level was already 2.8 years greater than that of men.

*Earnings up but still low.*—The increased use of skilled labor by the logging industry is one of the major reasons why the annual earnings of loggers have risen faster than the average for all manufacturing. However, even though earnings have more than doubled since 1950, loggers still have lower incomes than workers in any other manufacturing industry. The median for men during 1969 was \$4,488, or slightly more than half that of all men employed in manufacturing.

In general, the more formal education a logger had, the higher his earnings were likely to be. The earnings for loggers with 4 years of high school were twice those of loggers with 8 years or less of schooling. Men in the 25- to 34-year age group tended to have higher earnings than those who were either younger or older.

<sup>3</sup>The median is the middle value in a group of values that are arrayed from low to high or high to low. Its principal advantage over the mean is that it is not unduly influenced by unusually high or low values.

Whites had much higher earnings than Negroes, and men were better paid than women.

Total family income is another indicator of how well loggers are doing financially. This measure takes into account the earnings of all family members, plus income from such sources as dividends, interest, rentals, unemployment insurance, and public assistance. A poverty index can be devised by adjusting total family income for such factors as family size, age and sex of the family head, number of children, and farm or nonfarm residence. The official "poverty level" for a nonfarm family of four was \$3,743 in 1969.

A look at these income statistics shows that 25.1 percent of the men and 29.7 percent of the women who were part of the logging work force headed families with a total income that was below the poverty level. In comparison, only 3.6 percent of the male and 15.2 percent of the female family heads employed in manufacturing were in the poverty group.

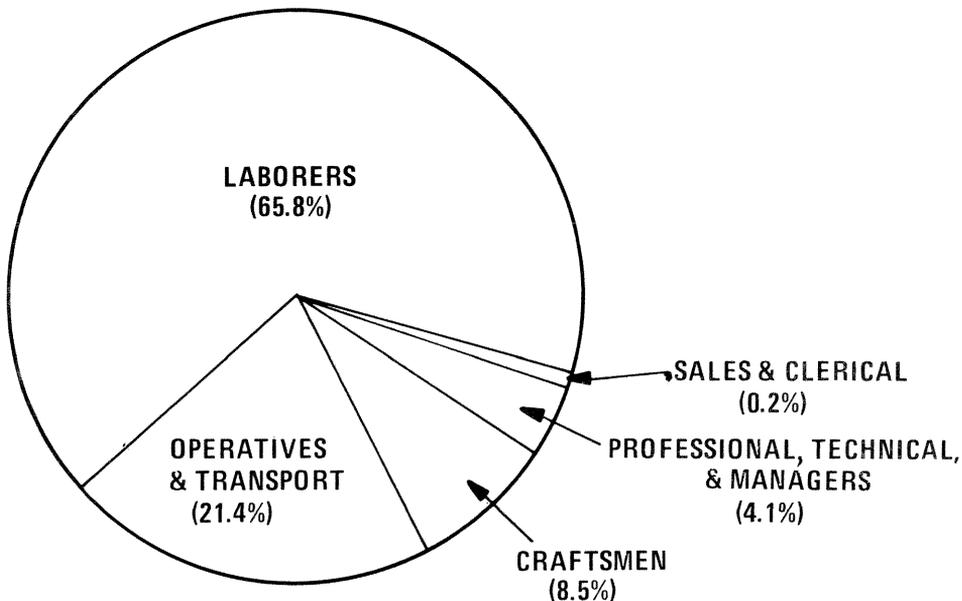
Poverty was much more common among black loggers than among whites. Fifty-five percent of the male Negro loggers headed families with incomes in the poverty range, while only 16.8 percent of the whites were in the same category. As might be expected, most of the

loggers of both races who had family incomes below the poverty level were employed as laborers (fig. 4).

One reason why earnings are low is that many loggers do not work year-round. According to the Census Bureau, only 45 percent of the men in logging worked 50 to 52 weeks in 1969, as compared to 77 percent in all manufacturing (fig. 5). Another 44 percent of the logging work force was employed only 27 to 49 weeks out of the year. These percentages may appear to be quite low, but they do represent progress toward more year-round employment. In 1949, only one out of every three loggers worked 50 to 52 weeks.

There is still a large gap between the earnings of loggers and those of other workers, even when only full-time workers are considered. In 1969, the median earnings for loggers who worked 50 to 52 weeks and more than 30 hours each week were \$5,648, or only 64 percent of the earnings of the comparable group in manufacturing. When earnings are compared by occupation, differences between workers in the wood industry and other manufacturing are largest for operatives, craftsmen, and managers, and smallest for laborers, sales, and clerical workers.

**Figure 4.—Occupations of workers in the logging labor force who head families with incomes below the poverty level, 1969.**



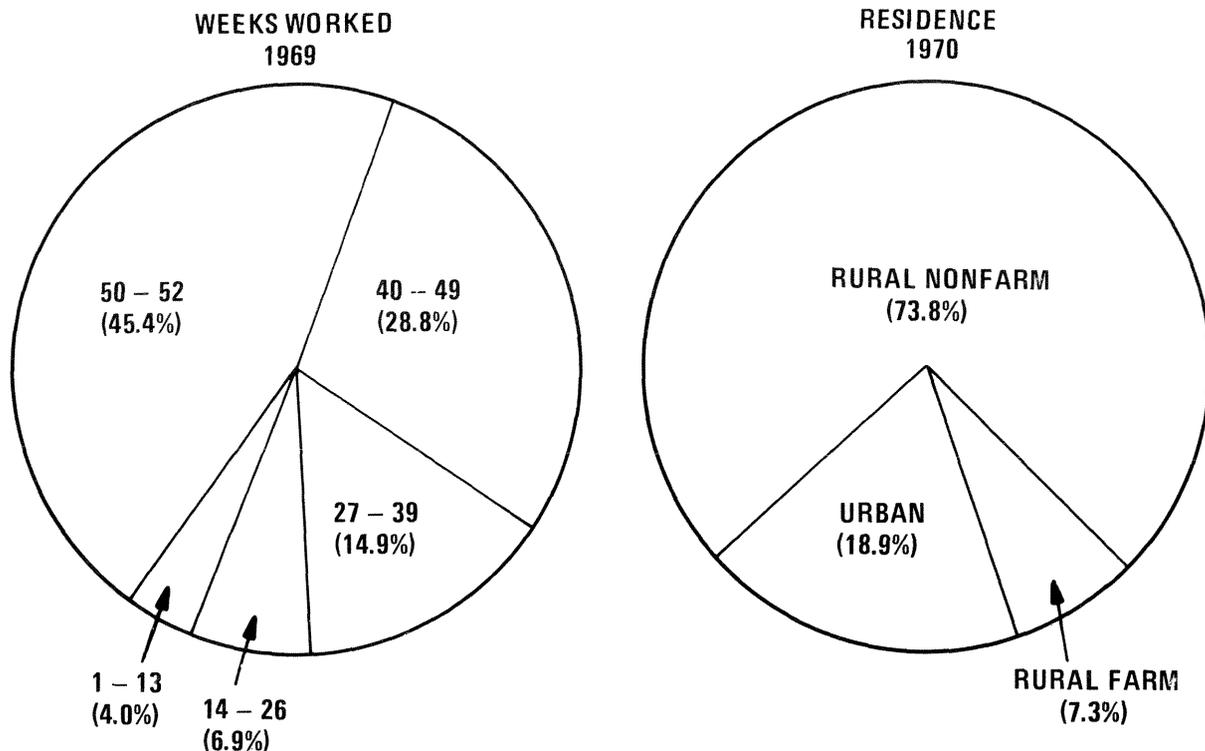


Figure 5.—Number of weeks worked and residence of persons employed in the logging industry.

In the past, many loggers were actually farmers who supplemented their farm income by working in the woods during the winter months. This seasonal movement of workers from farms to woods appears to have just about ended.

During 1970, only 7.3 percent of the persons employed in logging lived on farms, as compared to 13.9 percent in 1960 and 28.5 percent in 1950 (fig. 5). Most loggers still live in rural areas, even though they no longer operate farms. A significant number (18.9 percent) live in small towns of over 2,500 people and on the fringes of metropolitan areas.

*Future outlook.*—In assessing the future, it is convenient to view the logging labor force as comprising two components or groups. The first group consists of loggers who are the true professionals of the industry. They are highly efficient, well-trained workers who are employed year-round, earn a good living, and use the most modern timber-harvesting equipment.

In contrast, the second group, which we shall call the “part-timers”, is involved in logging because it is often their only employment alternative. These individuals may be small farmers or workers who have lost their regular jobs and are waiting for employers to begin hiring again. Still others in this group are either unable or unwilling to find permanent jobs because they have limited formal education and an overriding desire to work when and how they wish. These “in and outers” have no permanent attachment to the logging industry. They look upon logging not as a lifetime occupation but as a temporary job that will supplement their incomes from public assistance, unemployment insurance, farming, and miscellaneous jobs.

The “part-timers” are the marginal workers of the logging industry. They are mainly responsible for the industry’s bleak statistics on weeks worked, earnings, and families living below the poverty level. They work intermittently, have limited tools and equipment, and earn much less than professional loggers. Although there is no

way of telling how many of these part-time loggers there are, I would estimate that they account for one-fourth of total industry employment.

In the future, I foresee timber harvesting becoming increasingly more mechanized with the development of new equipment and the more widespread use of what is currently available. The latest statistics show that in 1972 the logging industry purchased \$157 million worth of new capital equipment, or about twice as much as it did during the early 1960s (*U.S. Bureau of the Census 1975*). This continuing substitution of capital for labor will have a pronounced effect upon the logging labor force.

First of all, it is likely to further reduce industry employment even with the projected increase in the demand for roundwood. The decline in employment will occur primarily among the part-time loggers because they are less suited for the type of jobs that will dominate the logging industry in the future.

Many part-time loggers do not possess the training potential or the temperament required to operate and maintain sophisticated timber-harvesting equipment. And many of the part-time loggers who are self-employed have neither the financing to purchase nor the business skills to efficiently utilize modern logging equipment. As a result, the productivity of the professional logger will increase while the productivity of the part-time logger will remain about the same. The wider this gap in productivity between the two groups becomes, the more difficult it will be for the part-time logger to exist alongside the professional.

Large investments in equipment will become more and more necessary for success in the logging business. However, this does not mean that the part-time logger will totally disappear. There will always be some who will be able to operate successfully on small timber tracts, in rough terrain, and in other situations where the

usefulness of sophisticated mechanized equipment is limited.

In addition to the decline in the number of part-time loggers, there will be many other changes that will accompany the increased mechanization of timber harvesting. For investments in mechanized equipment to be profitable, logging must be conducted with as little downtime as possible. Therefore, more loggers will have an opportunity to work on a full-time, year-round basis. The operation and maintenance of this mechanized equipment will demand a more skilled and better educated labor force. Large numbers of the industry's new employees will be graduates of vocational-technical schools and company training programs as greater emphasis is given to formal education and off-the-job training. The relative earnings of loggers should improve, reflecting their greater skills and steadier employment.

One can only guess at what some of the other changes may be that will affect the logger and his industry. Will the companies that now purchase roundwood be forced to do more of their own logging as the escalating prices of equipment make it more difficult for the independent contractor to stay in business? Can the piece rate system survive in an industry with costly machines and skilled labor? And finally, how will recent legal developments that permit the organization of loggers affect the structure of the industry?

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