

EMPLOYMENT TRENDS: WOMEN IN CONSTRUCTION

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ABSTRACT

The paper builds upon an article first prepared by one of the authors in 1997 and presented at the Southeastern Section of the Associated Schools of Construction annual meeting in Atlanta, Georgia. It examines the trend of an increasing number of women employed as workers in construction. Data are presented showing current and, where possible, projected employment. An updated comparison of average wages in the construction industry with more traditional occupations for women is included. Personnel related barriers and obstacles relating to women in construction are discussed, as are the management problems associated with the change in the employment pattern.

KEYWORDS

Women, Construction, Workforce, Change, Training

1. INTRODUCTION

The construction industry stands at the forefront of the major industries in the United States in its resistance in adapting to a changing world. Other major industries have been more successful. Domestic automobile manufacturers have regained a significant part of the share of their market lost to foreign manufacturers in the decades since 1960, albeit to some extent by purchasing, either outright or partially, the manufacturing operations of their foreign competitors. Domestic heavy machinery and industrial equipment sales show an upward slope and recovery from the 1970-80 time frame when this basic industry was decimated by foreign competition. In the period from 1990 through 2001, the Bureau of Labor Statistics (BLS) data reflect that the average productivity for all industry in the United States increased at an average rate of 3.75 %. While the BLS computes these data for most major industries, they do not provide any for construction, the industry with the third largest number of individual firms in the country and accounting for approximately 7% of the Gross Domestic Product. However, if one uses the data for framed residential construction as a surrogate, these show an average productivity increase over the same period of about 0.7%, or roughly one fifth of that for the other parts of the industrial and manufacturing sections (BLS, 2001).

Construction trade publications are replete with the current management buzzwords: partnering, quality control, and total quality management. However, the reality belies any sense of forward progress. Office computers and office automation aside, construction managers still operate with about the same philosophy of management that they have for decades. With a few notable exceptions the mold is a very mechanistic, top down management style. In McGregor's terms, very Theory X, not much towards Theory Y (MacGregor, 1957). Segments of the industry are light years behind the rest of the nation and as the country races into the 21st century, the construction industry lags the other major industries in almost every other measure of forward progress, including the employment of women in the workforce.

2. DISCUSSION

Recent census data indicate that the proportion of women in the work force, which had an upward trend for the period 1970 through 1980, continued to grow during the last decade but at a slower rate (Statistical Abstract, 2000). A projection through the year 2010 indicates no significant change from the current levels. At the same time, the proportion of women in the construction trade, starting at a low figure, increased more rapidly. These data, actual and estimated, are plotted in Figure 1. (Data are not available to allow an extrapolation of the composition of the construction workforce with any reasonable degree of comfort.) While the work force as a whole has a greater proportion of female workers than construction, the notable fact is that the construction proportion has more than quadrupled in the last fifteen years.

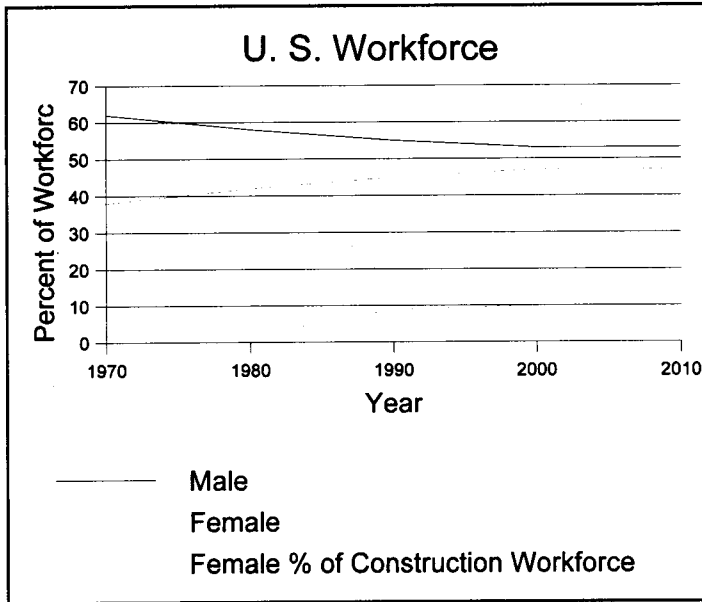


Figure 1: U. S. Workforce

Despite the rapid growth of women in construction between 1980 and 1997 (the last year for which data are available) women have generally opted to find employment in other work areas. This can be attributed to several factors:

- construction has the third highest accident rate, per 100 workers, of any industry in the United States. It is not surprising that individuals opt for a safer work environment;
- construction is often hard, dirty work;
- workers in the construction trades experience unemployment cycles with amplitudes that exceed those for other industries;
- many feel that women do not have the physical capabilities that construction requires;
- traditionally, women do not work in the construction industry.

The last point is amply justified by a listing of occupations considered as non-traditional for women. Wider Opportunities for Women (WOW) works nationally and in its home community of Washington, DC to achieve economic independence and equality of opportunity for women and girls. The organization lists 31 occupations as non-traditional for women, of which 26 are in the construction industry (Wider Opportunities for Women, 2001).

For those with the entrepreneurial spirit the primary motivation for entering into construction appears to be personal satisfaction. However, even in ownership, women are under represented in construction. Census data show that only 7.5% of construction firms are owned by women, and only one third of these had any employees (Statistical Abstract, 2000). Within the trades, the compelling reason for many women to seek employment in the construction industry is primarily economic. Women have discovered that there are essentially no differences in the wage scales between genders in construction for those doing the same tasks and with the same level of training and competence. This is not necessarily true in other fields where data show that if individuals work full time, non-stop, from graduation to retirement, the average **male high school** graduate will earn slightly in excess of \$1 million while the average **female**

college graduate will earn approximately \$846,000.

The construction wage "bonus" is even more apparent if one compares the constant dollar average weekly wage in more traditional work areas for women (retail and services) with those in construction, as is done in Table 1. There is a marked disparity between the industries and thus the incentive for construction related work. For many women the higher wages of the construction industry are a necessity. Women entering the construction industry find that the entry level positions pay significantly more than entry level positions in the more traditional fields. This higher wage level brings them closer to financial independence and at the same time provides the expectation that additional advancement and a more secure future is possible. Table 1 is in constant 1982 dollars to show an historical trend unaffected by inflation. In current dollars, the BLS statistics currently show that the average weekly wage for construction workers is \$704, while that for all private industry (including construction) is \$474 (Bureau of Labor Statistics, 2000).

Table 1: Average Weekly Earnings in Constant 1982 Dollars (Statistical Abstract, 2000)

| YEAR | CONSTRUCTION | RETAIL | SERVICE |
|------|--------------|--------|---------|
| 1980 | 430 | 172 | 223 |
| 1985 | 421 | 158 | 233 |
| 1990 | 395 | 146 | 240 |
| 1995 | 380 | 143 | 239 |
| 1999 | 397 | 156 | 259 |

One barrier to women with the desire to enter the construction trades at a level above that of common laborer is the lack of training. The lack of trained workers is endemic throughout the industry and little is being done on a formalized basis (apprenticeship) to correct the problem. (Data on informal, on-the-job training (OJT) is essentially non-existent.) The federal Office of Apprenticeship Training, Employer and Labor Services provides statistics for the number of individuals enrolled in formal training and a portion of these are provided in Table 2. It should be noted that several states do not provide data to the automated reporting system, so the statistics cannot be said to provide a true national picture of enrollment. However, the data are the most complete that are available.

Table 2: Apprenticeship Distribution Among Selected Training Programs (Department of Labor, 2001)

| Category | Total Apprentices | Minorities | % | Women | % |
|---------------|-------------------|------------|----|-------|----|
| Construction | 162,848 | 33,347 | 20 | 6,031 | 4 |
| Health | 3,447 | 894 | 26 | 2,055 | 59 |
| Services | 2,896 | 1,016 | 35 | 512 | 18 |
| Manufacturing | 19,863 | 2,241 | 12 | 1,179 | 6 |

The statistics indicate that, while women make up approximately 47% of the national workforce, and 9% of the construction work force, their participation in construction related apprenticeship training is very low.

Setting aside training and working conditions which affect men and women alike, readings on the subject make it clear that one of the greatest barriers to women in construction is the attitude of the workers and the executives within the industry. One writer (Pateneuade) has stated "Construction is the last bastion of real knee-jerk male chauvinism." Yet another (Gonzales) has said "The mere mention of construction work ...(conjures up)...images of macho men in hard hats, wielding hammers and pouring cement (sic)," while Hathcock noted, "...the first image that comes to mind is a muscle-bound man ...welding ...on a forty story building." Nowhere in such expressions is there a welcome mat for less than robust individuals, much less for women.

The construction industry has been overwhelmingly male dominated for years, and on many jobsites women construction workers are not welcome. Sexual harassment and anti-women attitudes are still prevalent despite the fact that discrimination based on gender is illegal. Data presented in a report issued by the Occupational Safety and Health Administration (OSHA, 1999) stated that the National Institute of Occupational Safety and Health (NIOSH) determined 41% of female construction workers suffered from gender harassment in a one year period. In a separate study, conducted by the Chicago Women in Trades (CWIT) organization and the results of which are included in the OSHA, 88% of the respondents reported sexual harassment. According to a 1996 *USA Today* analysis of U.S. Equal Employment Opportunity Commission and Bureau of Labor Statistics data, female construction workers had the second highest rate of sexual harassment complaints per 100,000 employed women. (Female miners had the highest rate.)

Sexual harassment in the workplace is not only an equal employment opportunity issue but is also increasingly recognized as a safety and health issue. A hostile workplace presents safety and health concerns on several levels, ranging from a lack of training and safety information to physical assault. Distractions while working can lead to not taking proper safety precautions, resulting in on-the-job injuries. The effects of a hostile workplace can be reflected in acute as well as chronic stress reactions. Indeed, the Occupational Safety and Health Administration (OSHA) has begun to recognize workplace violence as an occupational safety and health issue.

According to the CWIT study, tradeswomen find the sexist attitudes (and accompanying behavior) present on construction sites intolerable and stress producing. They reported negative behavior ranging from belittling remarks and constant checking of their work to threats of physical violence. Fifty-two percent of the survey respondents reported that, at one time or another, men had refused to work with them during their construction careers. One former female carpenter explained, "The problem is that there's a mixture of skills you don't have as a woman, and, at the same time, you're dealing with hostile men. You could deal with the dangerous work if the men treated you right, or you could handle the men if the work wasn't so dangerous. It's the combination that's so hard."

Inadequate information, and the lack of education and training about workplace safety and health greatly concern women workers. The culture and attitudes of construction workers, supervisors, and companies about health and safety often condone risk taking and unsafe work practices, passing "bad" habits from one generation of workers to the next. The workers in the studies commented that the attitudes of some journeymen and other co-workers toward apprentices, particularly female apprentices, negatively affected the amount and kind of on-the-job training that was provided. Apprentices are not always provided with information and training on how to work correctly and safely, and opportunities to learn through practice may be withheld. Female workers are not always given sufficient opportunity to learn or test new skills. Due to the hostility that often accompanies it, women in particular do not benefit from the informal training common among their male peers. The OSHA study also indicated that female workers considered many of their male co-workers did not seem interested in participating in on-the-job safety education and training, and that some supervisors and bosses did not necessarily encourage such training. Related to this issue was the sense that, in many instances, productivity comes before safety. Data from NIOSH provided in the OSHA report indicated seventy-eight percent of the female construction workers reported that significant shortcuts are taken during the work routine which could put a worker's health and safety at risk.

Despite OSHA regulations which should provide some degree of protection, women often feel that they have to take things into their own hands, as reflected in the following comment: "We should insist the employer take responsibility, but they often don't. If we, as a very small group, can have some autonomy to make some changes for ourselves, like to tell women, 'bring your earplugs, bring your masks, bring your eye protection'.... [We could] get a start on protecting ourselves." The same individual observed that "younger workers pick up the unsafe habits of the older workers: I work with apprentices and they're the younger ones that are coming up and they're out there and they're picking up these nasty, crappy attitudes and stuff from the journeymen that they're working around, because that's what they see them doing, and it seems to work fine and, you know, you can't combat that without ... an attitude change."

For those women who are entrepreneurs and working to create their own niche, women-owned firms are typically considered as minority or disadvantaged firms and eligible for government assistance in obtaining work or contracts. Certainly there is no dearth of literature available telling them how to set up and manage their business. Many states and separate jurisdictions have adopted legislation requiring that a specified percent of construction dollars be funneled to women business enterprises through set asides, preferential treatment in bidding, or mandatory quotas in construction contracts. The rules covering these programs are undergoing rapid change, but it appears unlikely that the incentives will totally disappear. However, with rare exceptions these set asides or quotas do not affect the actual work force. In most cases it is possible for women owned or controlled firms to receive the benefits of the program without any of their operational personnel being female.

There are also private sector organizations assisting the entrepreneurial, professional, and skilled working women in the construction industry. Among these, probably the best known and respected is the National Association of Women in Construction (NAWIC), founded in Ft. Worth, Texas, in 1955. Since its founding, NAWIC has grown to a membership of 6,500 with more than 200 chapters in 47 U.S. States and in three Canadian provinces. In 1996, NAWIC signed an International Affiliation Agreement with NAWIC-Australia. NAWIC's affiliate "Down Under" already has 11 chapters throughout its borders. In 1998, NAWIC signed an International Affiliation Agreement with New Zealand, and another in 1999 with South African Women in Construction (SAWiC). In its 45 years of service to its membership, NAWIC has advanced the causes of all women in construction whose careers range from business ownership to the skilled trades. NAWIC works with other industry and governmental entities to promote and advance women in construction. These partnerships let NAWIC team with other groups to promote training among women in the skilled trades, cooperate in educational programs, and promote women-owned businesses.

Unfortunately, the government and privately aided success in the entrepreneurial area, and government interference in employment practices, has not translated into an understanding of the gender related problems or barriers within the construction trades. For most construction firms it is business as usual without consideration of the changes that would ease the lot of an increasing proportion of women in the workplace. The actual, day to day, logistics required to accommodate the women is usually not an issue. The number of portable toilets, water cans, rest periods, and the like are often touted as problems when in fact they can be easily provided without significant changes or significantly increased costs. The real problem areas that management need to address are management style; catching up with other industries in such areas as flex-time, empowerment, training; and...the ultimate problem...attitude, perceptions, and the resistance to change.

Still, the trend is clear. An increasing percentage of the construction work force is women. Moving construction firms and organizations into the acceptance of this change to the work force is one of the greatest management challenges facing the construction industry at the present time.

Innovative scheduling for projects has been a source of increased productivity and profitability for construction firms. However, innovations in work force scheduling have not been a priority. A construction project is built by a combination of teams, and generally the teams must act together or in a relatively rigid sequence. The absence of any member of a team will adversely affect the output of that crew and therefore the entire operation. On large projects there is little leeway in the trades for flex-time for the individual. Concrete pours require that all members of the finishing crew be there at the same time and stay until their part of the effort is complete. However, while it is not currently the norm, flexible hours for entire crews can be accommodated in some projects and for selected trades. An example is the crew that installs ceiling tile. Under ideal conditions this work should be done when other crews are not present. Members of the crew generally walk on stilts or from rolling scaffolds, requiring a clean and unobstructed work environment. It may be advantageous to allow crews such as this to work alternative hours when the project is not fully manned.

To a large extent, the normal accounting and bookkeeping functions of a construction firm can be done from home offices or during other than normal office hours. All that is required is the appropriate computer software, hardware, and telephone connections for the work to be done elsewhere. While obviously unsuitable for small firms, where the bookkeeper is often the receptionist-secretary-sole office staff, the use of home workers may make a great deal of sense for larger firms. This "outside facility" may even save money since there is no requirement for office space. Child or dependent care is another place where innovative construction firms could provide relief for working women who cannot take advantage of flex-time or who work in the hands-on trades.

However, these logistical types of problems are both surmountable and almost insignificant compared to the greater challenges of perception and attitude previously cited. The project working environment for the tradesmen and laborers has historically been male dominated. Until recently that was also true for the middle level managers and subcontractors. With increasing numbers of women in the construction trades and mid-level management, roles will change. Women are becoming construction managers, supervisors, and crew leaders. Studies have shown, and common sense tells us, that subordinates may react differently to male and female supervisors. Consequently, senior management may find themselves confronted by a resistance to the social changes at both the supervisory and trade level. The resistance to change may come from several sources: fear of the loss of the traditional male image and roles; vested interests from construction organizations and peer groups; differing assessments of the capabilities of the women; and the expectations that this new element in the work force will somehow be favored and treated differently.

Reluctance to accept change is a two sided coin, affecting not only the incumbent male dominated work force but also the incoming women. For the male, it looks like the end of an era and further encroachment on a preserve that, until recently, was almost totally masculine. Individuals that revel in strength, endurance, and, to a degree, crudeness, are not likely to welcome a change to that environment. This image is not just their perception but reflective of comments made elsewhere in this paper. To be replaced or supplanted by a worker who does not carry or satisfy the same image may stretch the limits of toleration. The reverse is equally true for the incoming women: the necessity to perform where strength and endurance are requirements; to either be unaffected by or to tolerate the relative crudeness; and the necessity of doing at least as well as their male counterparts in quality and productivity all may be beyond their level of tolerance. The management dilemma is obvious: how to reconcile the competing perceptions and attitudes of the two groups. The solution is not as apparent as the problem.

Firms that take a pro-active stance to accommodate the changing composition of the workforce may find the 'inevitable' more palatable in the short term and the transition smoother in the long run. The changes that are required are not changes in organizational goals or even in the manner that these goals are to be accomplished. Instead, for these problems, managers are entering into the world of human behavior and dealing with management terms that have become familiar to the rest of the world.

The growing number of women in the workforce is a trend that will continue until an equilibrium point is achieved. Looking at Figure 1, this may have already occurred in the short term for the workforce as a whole. The equilibrium point for construction may be more male dominated than in some other fields, such as nursing, where the reverse will probably be true. There are only so many women who will find the higher wages attractive or the personal rewards sufficiently significant that they will want to work in the industry. However, just as there are increasing numbers of males in nursing and allied fields, there will be increasing numbers of women in the construction fields at all levels.

The key to gender integration in the construction industry lies in training. Not diversity training or leadership training, but training in the day to day work of the construction trades. Gender integration is not an excuse, but rather just a part of the requirement. The shortage of skilled craftsmen for all trades is so acute that the quality of work on all but the rarest of projects borders on unacceptable. Walls are not plumb, forms are not aligned, and the sound of the chipping hammer removing "bulges" in spandrel beams is common. The industry has gone to oversize and jumbo switch and receptacle plates due to the lack of ability or care of those installing dry wall to cut the proper size hole for the electrical box. Vocational training for entry level positions is sorely lacking and it is in this area that management can accomplish two necessary objectives: a better trained work force and the integration of women in the trades.

When formal training is not possible, job level managers can assign mentors to women entering the construction trades. The mentor should be someone within the trade who has not only the job related skills but the intellectual capability and interest in passing these skills on to another, regardless of gender. Success of the mentor process depends greatly upon the relationship that develops between the individuals over time and the perception of the mentor that their efforts are worth while, for them, the trainee, and the firm. A positive reward for a job well done, be it a 'pat on the back' or something more substantive will help to ensure that the mentor provides the type of guidance and training that is required.

Social scientists have likened a change process to a freeze-thaw-freeze cycle where it is necessary to "thaw" the ideas and perceptions in the minds of individuals, introduce the change, and then once again freeze in the new mode of operation. Others have mapped it on leadership diagrams where the actions of the leaders varied according to the state of readiness of the employees to accept a new direction, be it a change in substance or a change in style (Hersey & Blanchard, 1993). Which ever topology is used, how one sets change in motion is a problem. At the outset it was stated that construction management tended towards a mechanistic approach. As Bresnen noted, the very nature of the business: "... high levels of ... specialization; full specifications of the technical methods; ... a hierarchal structure of control, authority, and communications..," all dictate that this is to be expected (Bresnen, 1990). It seems axiomatic for this management philosophy that changes in style or substance probably will have to be directive rather than bubbling up from the field. (So much for the participative and empowerment concepts at this stage.) Senior management can direct more flexibility in scheduling, providing of proper health and comfort items, and dependent care, and these logistical items will be provided. Senior management can also move the organization towards replacing training where it is missing, and augmenting training where it is scarce. Avoiding the perception that the women are being given preferential treatment, which would lead to their rejection by the male dominated work force, is easier said than done. Industry leaders can view the assimilation of women in construction as an inevitable event and wait for it to happen. On the other hand they can commence planning the proper logistics and adequate training cycles that will smooth the

path as well as provide for superior craftsmen. The traits manifested by many construction leaders who have given us the less than successful safety programs of today will be equally ineffective in adapting to the changes in the workforce for tomorrow. Senior and mid-level managers who take the opportunity to look further ahead than the next project will be able to assess the need for changes in management style. The direction remains the same, i.e., increased productivity and profits. Only the avenue changes. Returning to the "what counts is what counts," it is obvious that what counts in construction and all other profit oriented industries is the ability to make that profit consistently, legally, and ethically, and with the work force of the future.

In an industry that is being buffeted by fierce competition (both foreign and domestic), low productivity, and an inadequate supply of craftsmen, senior and upper level management have a very full agenda. Not all organizations and managers are capable of coping with "unpredictable social, technical, and economic changes (which) create turbulent conditions..." However, survival as profitable and enduring enterprises depends on the leadership and the ability of construction managers to adapt to a changing world. Because of the rigors and physical demands of certain trades and occupations it is not reasonable to expect that there will be a one to one match of women and men in particular fields. But only the most mentally hidebound of individuals can close their minds to the changes that will occur. Those managers who exercise leadership which enables them to move their firms in the direction of employment for the most qualified individuals, regardless of gender, will move their firms in the direction of greater profitability. They will also nudge the construction industry forward in the 21st century.

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