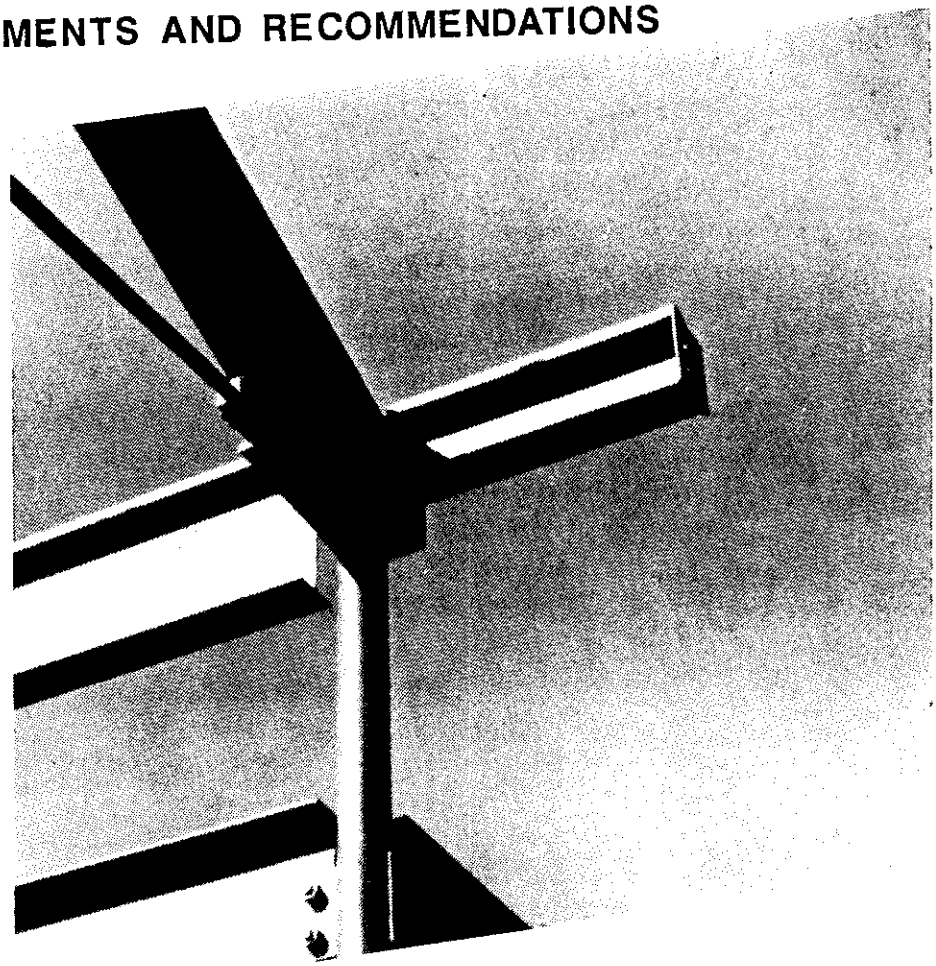
TECHNICAL PUBLICATION NO. 51

AN ANALYSIS OF THE SHORTAGE OF SKILLED CARPENTERS IN FLORIDA AS REPORTED BY UNION CONTRACTORS: IMPEDIMENTS AND RECOMMENDATIONS



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SUMMARY OF TECHNICAL REPORT NUMBER 51

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BY
DARREN S. JONES, ALI MARKUS, BRISBANE H. BROWN, JR.
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The School of Building Construction at the University of Florida, in conjunction with the Building Construction Industry Advisory Committee, has undertaken a study concerning a manpower shortage in the construction industry in the state of Florida. This is such a broad topic that several studies are being conducted of segments of the construction industry, and then a comprehensive report will be made as a part of a research grant from the Building Construction Industry Advisory Committee. This report covers only contractors who have signed labor agreements with the United Brotherhood of Carpenters and Joiners of America. Graduate students, under the close supervision of faculty, developed a number of surveys intent upon isolating the causes and effects of a shortage of skilled carpenters and to identify the steps that may be taken in order to prevent, or at least minimize, such a shortage. This research report was designed to address the obstacles faced by the industry and to make specific recommendations as to what courses of action may be taken by those persons and organizations involved. This work reports the status of the shortage of skilled carpenters as reported by union contractors and the enlightening recommendations could be quite useful in coping with the problem.

Fifty-two union contractors responded to the survey. Of those, 40, or 80 % of the respondents expressed a need for more skilled carpenters in the state of Florida. In fact, 58 % felt that there are not enough skilled carpenters in the state to handle the present work load. In light of the projected growth of Florida in the next decade, this shortage could serve to hamper the industry in its efforts to keep up with demand through the 1990's.

To aggravate the problem, union contractors feel that only 57 % of those carpenters in their employ would be considered skilled in the trade. A general decline in craftsmanship was considered the most important contributing factor to the shortage of skilled workers. Eighty percent of the respondents felt that carpenters should undergo some sort of formal training.

The union contractors felt that union apprenticeship programs and on-the-job training programs provided adequately skilled carpenters; other training programs were not used extensively. It was also found that the level of communication

between the union contractors and training programs was quite remote. Stronger communication between the parties was considered highly desirable, and union contractors felt that formal meetings between the groups would be the best method for establishing such a link.

It is clear that the union contractors in the state of Florida face a potential crisis. Falling numbers of new workers in the job market will contribute to the problem. Comparatively low wage rates for carpenters in Florida and an impression of low prestige in the field also have a sizeable impact. The boom in population, and therefore demand for housing, clearly will make the situation more acute. Those parties involved should take steps to remedy the manpower shortage in the industry before it becomes too critical to manage in a satisfactory manner. Meetings between the union contractors and training institutions should be a good start.

Copies of this report can be obtained by contacting:

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AN ANALYSIS OF THE SHORTAGE OF SKILLED CARPENTERS IN FLORIDA AS REPORTED BY UNION CONTRACTORS: IMPEDIMENTS AND RECOMMENDATIONS

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The guidance and support of the following have immensely contributed to the successful completion of this project.

First and foremost, sincere appreciation for the Chairman of the Supervisory Committee, Dr. Brisbane H. Brown, Jr., for his guidance and expert assistance. Additionally, I would like to thank the members of the Supervisory Committee:

Dr. J. Morris Trimmer

Professor Richard Furman

E. Jimmy Jones, Member General Executive Board, Fourth District, United Brotherhood of Carpenters and Joiners of America, for his assistance and distribution of the questionnaires.

A special thank you to Mr. Ali Markus, Head of the Research Team, for his continuing assistance, along with rest of the project's team.

Most importantly, I would like to dedicate this work to my parents, Mr. and Mrs. B. H. Jones, for without their love and support, none of this would have been possible.

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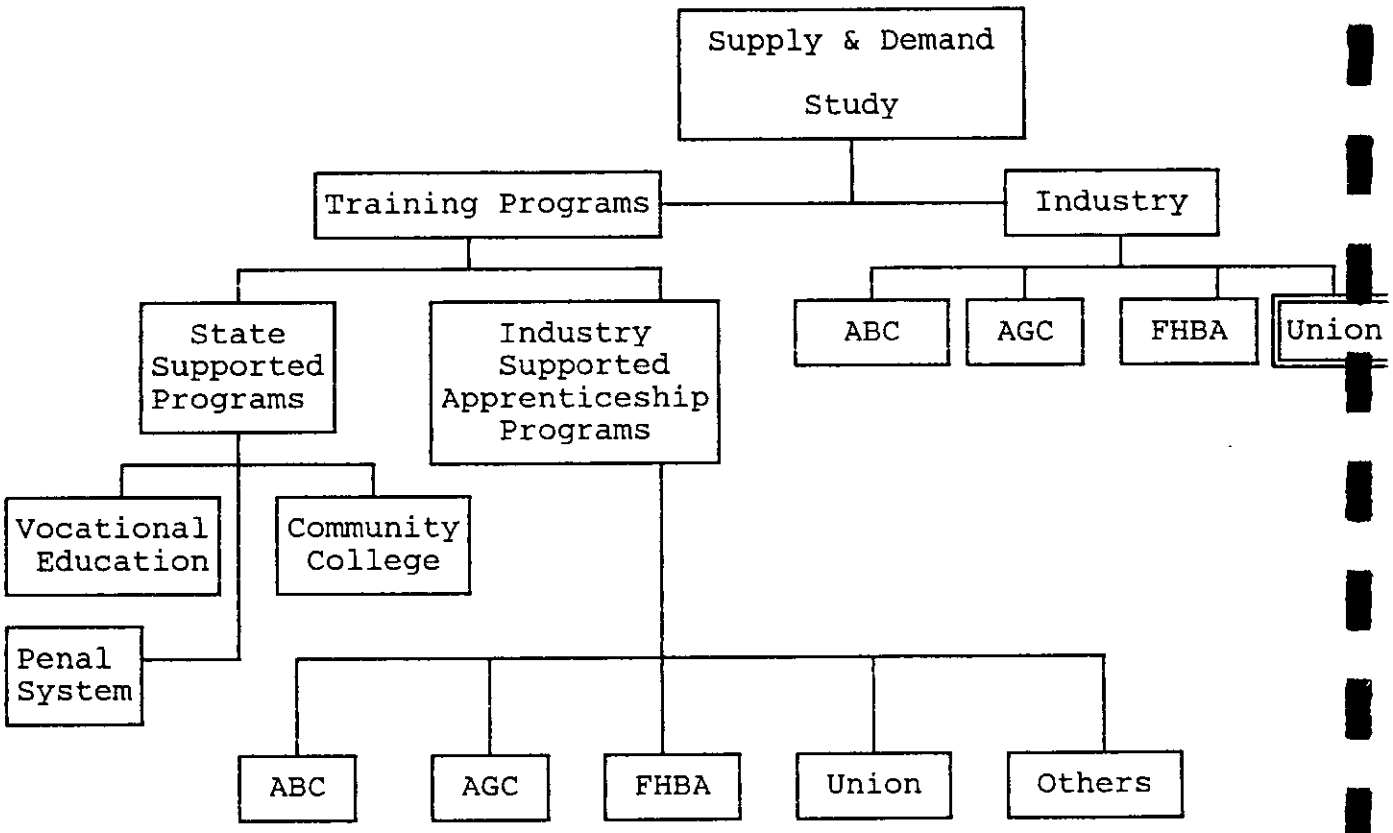
CHAPTER 1

INTRODUCTION

OVERVIEW

The University of Florida School of Building Construction, in cooperation with the Building Construction Industry Advisory Committee (BCIAC), is conducting a major research project which will examine current recruitment, training and employment of construction craftsmen in Florida. Additionally, it will determine impediments to an adequate supply of skilled construction craftsmen and develop recommendations to meet this demand. The carpentry trade was chosen to be used as the study vehicle, as it is the largest skilled trade in the construction industry. This overall project has been divided into seven studies as shown in Figure 1-1. The scope of this study is to determine if contractors, who have signed agreements with the United Brotherhood of Carpenters and Joiners of America in the State of Florida (hereafter referred to as union contractors), have enough skilled carpenters to hire, and to analyze reasons for the shortage, if any. The survey of union contractors will be conducted through a questionnaire. Furthermore, this study will examine the impediments to an adequate supply of skilled carpenters in the union sector of the construction industry in Florida, with conclusions and recommendations.

SCOPE OF TOTAL RESEARCH PROJECT



LEGEND:

═══ - scope of research for this particular project

ABC - Associated Builders and Contractors

AGC - Associated General Contractors

FHBA - Florida Home Builders Association

Union - United Brotherhood of Carpenters and Joiners of America

Others - Any individual or group program which is non-union and does not belong to any one particular building organization. This group will be referred to throughout this report as "other (non-union)"

Figure 1-1

INTRODUCTION

In 1986, the current dollar value of new construction in the United States was about $ 375 billion, which was approximately 8.9 percent of the gross national product (GNP).[1] Construction activity is predicted to grow in 1987 due to lower interests rates, continued growth in GNP, and increased spending for public works. However, the rate of growth will slow as declines in nonresidential construction offset increases in homebuilding and public works.[2] The outlook for the construction industry for the remainder of this decade is favorable. The macroeconomic forecast predicts favorable conditions for construction, such as: slow inflation, declining interests rates, solid rates of economic growth, declining federal budget deficits, and declining trade deficits. With these optimistic factors, the overall value of construction put in place should equal or exceed the current record level for the next five years.[3]

Although the overall outlook is good, the U.S. construction industry will be faced with several challenges over the next five years. Foreign competition will play a larger role in the industry, as most of the construction contractors entering the U.S. market are well-financed and often possess construction

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[1] U.S. Department of Commerce, 1987 U.S. Industrial Outlook (1987), p. 1-1.

[2] Ibid., p. 1-3.

[3] Ibid., p. 1-3.

expertise equal or superior to American capability. The sizeable cost of liability insurance will probably begin to stabilize in coming years, but future trends in liability insurance are dependent on legislative and judiciary developments. Finally, "the supply of young workers available to the construction industry will dwindle because of demographic trends and overall economic prosperity. Unless there are substantial productivity gains, labor shortages and labor quality could become major problems."[4]

The Construction Labor Research Council has substantiated this issue concerning the shortage in the labor supply, and extended the prediction to cover the first half of the next decade:

> The years 1990-1995 have the potential for seeing significant shortages of skilled manpower in the construction industry. Even without industry growth, there will be the need to replace an increasing number of workers in an aging labor force during a period of reduced growth in the number of new entrants into the labor market. Likely growth in the construction industry over the same years will make the problem more severe.
>
> Demographic data gives a fairly clear picture of the future labor supply. During the years 1990-1995 the labor force is expected to expand at a rate of 1.0 percent each year. This is a dramatic deceleration from the 1.6 percent rate of the 1980's and 2.6 percent rate of the 1970's. The historically low birth rates of the 1970's will, therefore, impact the labor market of the 1990's.[5]

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[4] Ibid., p. 1-3.

[5] Construction Labor Research Council, "Meeting the Future Need for Construction Labor, 1990 - 1995" (Washington D.C., October, 1985), p. 2.

The replacement demands in the industry are due to workers retiring, dying, or leaving the industry for other employment. Based on information from the Bureau of Labor Statistics, there is a need to replace 180,000 construction workers each year. Of these, 114,000 are skilled craftsmen, of which 27,050 are carpenters. These estimates will be too low by the mid - 1990's due to the aging construction work force. The aging construction workers will be retiring, dying, or leaving the industry in even greater numbers during these years, increasing the predicted replacement demand each year.[6]

Based on a conservative employment growth rate of two percent, it is predicted that an additional 83,000 construction workers per year will be needed. This figure includes 60,000 needed skilled craftsmen, of which 10,850 are carpenters. The total predicted annual needs for new construction workers are: 37,900 carpenters (the largest need of any single skilled trade); 136,100 other skilled craftsmen; and 89,000 other construction workers.[7]

As the nation faces this shortage of manpower in the construction industry, Florida's position for this obstacle will be exacerbated by an unprecedented population growth rate. "Employment in the construction industry, as well as in other industries, has shifted from the Midwest and Northeastern States to the 'Sun Belt' States: Florida, Alabama, Mississippi,

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[6] Construction Labor Research Council, pp. 8-9.

[7] Ibid., pp. 8-9.

Louisiana, Texas, New Mexico, Arizona, and California."[8] Florida's 1986 population of 11,675,000 [9] is expected to be more than 14,765,800 [10] by the year 2000, ranking it as the third most populous state behind California and Texas. The growth rate will be four times faster than the national rate. Florida will certainly see an increase in construction activity to accommodate this growth. All areas of construction will be affected - both residential and commercial, and particularly an increase in heavy construction to provide an adequate infrastructure for present and future needs. Many new construction jobs will be created, which poses the serious concern of a shortage of skilled craftsmen in the state.

The carpentry trade is the largest single skilled trade in the construction industry, and is second in size to unskilled labor which constitutes the largest segment of the industry. It follows that with Florida's predicted growth and replacement needs, the carpentry trade will require the largest number of additional workers of all the skilled trades. For this reason, the carpentry trade was chosen as the study vehicle to examine potential construction labor shortages in Florida.

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[8] John Lukasiewicz and John Tschetter, "Employment Trends in the Building Trades," Occupational Outlook Quarterly, Spring, 1983, p. 4.

[9] "State Overview," Florida Trend, vol. 29, no. 13, Yearbook 1987, p. 53.

[10] Anne H. Shoemyen and Susan S. Floyd, eds., 1986 Florida Statistical Abstract (Gainesville, Florida: The University of Florida Presses, 1986), p. 37.

PURPOSE OF THE STUDY

The goals of the study are:

1. Determine if union contractors face any problems in hiring skilled carpenters in Florida.
2. Analyze why a shortage of skilled carpenters exists.
3. Determine what are the impediments to an adequate supply of skilled carpenters in Florida.
4. Determine what skills union contractors desire carpenters to possess.
5. Examine the interaction between union contractors and various training programs and determine how well these training programs are meeting the carpentry needs of the union contractors.
6. Determine the level of communication that exists between the union contractors and the training programs.
7. Elicit views and opinions of the union contractors as to what would alleviate the shortage of skilled carpenters.
8. Develop conclusions and recommendations on what can be done to remedy the shortage of skilled carpenters.

CHAPTER 2

LABOR AND THE

CONSTRUCTION TRENDS IN FLORIDA

SOURCES OF LABOR

The avoidance of a shortage of construction labor is dependent upon the number of new workers entering the industry. Unfortunately, the historical source of new entrants into the industry has been young persons reaching the working age, and this pool of labor has recently been shrinking. "The number of 18 to 24 year olds in 1987 is less than in 1980, and will continue to decrease through 1995. For every six persons in this age category in 1980, there will be only five in 1995."[11] Compounding this problem is the fact that older workers are now retiring at earlier ages than the traditional age of 65. In fact, only 8 percent of all men in the construction industry are 55 or over.[12]

There is one other source of a potential labor supply. Historically, the United States has dealt with labor shortages through the use of immigration, both legal and illegal. There are many uncertainties involved to be able to guarantee this method as a solution to solving any shortages. However, if present immigration levels remain constant or increase, immigrants could become a significant source of new workers.[13]

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[11] Construction Labor Research Council, "Meeting the Future Needs for Construction Labor, 1990 - 1995" (Washington D.C., October, 1985), p. 3.

[12] Ibid., p. 3.

[13] Ibid., p. 5.

EXISTING AND POTENTIAL LABOR SHORTAGES

In addition to the predicted labor shortages, several large cities are currently experiencing severe labor shortages. "Large areas of the Southeast are short of manpower, with conditions particularly tight in Atlanta, Nashville and the Orlando - Tampa Bay corridor."[14] In an interview for Engineering News Record, Robert Graham, executive director of the Georgia chapter of Associated Builders and Contractors (ABC), claims that there is "a tremendous shortage of skilled craftsmen." Citing predicted downtown Atlanta growth and the $ 1.2 billion Trident submarine base at Kings Bay, Georgia, requiring thousands of workers over the next ten years, Graham continues, "Those two factors will create severe manpower shortages all the way from Atlanta to Jacksonville, Florida."[15]

In an interview for Florida Construction Industry Magazine, Philip H. Bloom, vice president of business development for Blosam Contractors in Jacksonville, was asked to comment on what he thought was the greatest potential detriment facing the construction industry in Florida. After citing Florida's inadequate infrastructure, Mr. Bloom adds, "Another area of great concern is the labor market. Continual development of skilled

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[14] Steven W. Setzer, "Labor Shortages Grip Several Cities," Engineering News Record, 25 September 1986, p. 10.

[15] Ibid., p. 10.

labor and finding and keeping qualified management personnel is perhaps the single most important problem in the construction industry today."[16]

Central Florida will experience additional labor shortages in the near future as Disney officials plan $ 200 million to $ 300 million of new construction plus other large projects planned for the area. Robert Kidder, president of ABC's central Florida chapter, in an interview for Engineering News Record, predicts that, "Disney will have a big impact on manpower. Existing shortages have already created scheduling problems - nothing is getting done on time."[17]

It is the collective opinion of several prominent Florida architects, builders, and economists that there are four particular areas in the state which have demonstrated remarkable growth and will continue to expand.[18] These are:

1. Jacksonville (Duval County) and the surrounding Counties of Clay, Nassau, and St. Johns.
2. Orlando Area (Orange, Osceola, and Seminole Counties)
3. Tampa / St. Petersburg Bay Area (Hillsborough, Pinellas, Manatee, and Sarasota Counties)
4. Palm Beach / Ft. Lauderdale (Palm Beach and Broward Counties)

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16 "Building Trends For the Rest of the Eighties," Florida Construction Industry Magazine, December 1986, pp. 18-19.

17 Setzer, p. 11.

18 "Building Trends for the Rest of the Eighties," pp. 18-22.

Further examination of Florida's planned construction and predicted expansion will assist in pinpointing potential labor shortages. Because of the diversity of the construction trends within the state, Florida can be divided into five distinct regions for ease of analysis. These regions, consistent with the Florida Statistical Abstract's Market Regions, are labeled Northeast, Northwest, Central, Southeast, and Southwest, as shown in Figure 2-1.

Market Regions in Florida

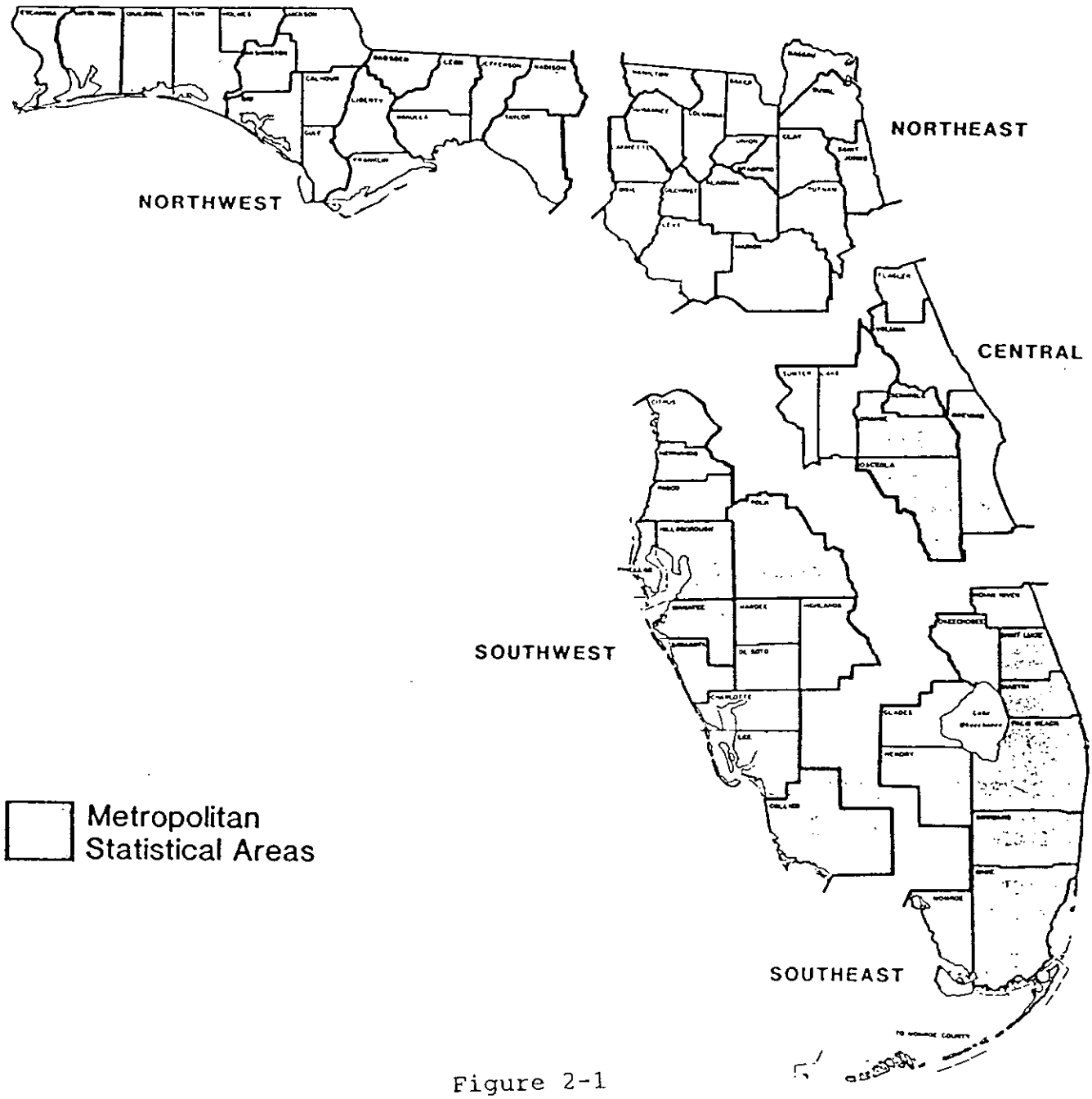

Figure 2-1

Source: 1986 Florida Statistical Abstract

NORTHEAST FLORIDA REGION

Jacksonville is currently a thriving economic and construction market. In 1986, over 20,000 jobs were added to the area, second only to Orlando in the state for absolute employment growth.[19] Major projects currently under development and planned for the future include:[20]

1. The $ 40 million Mayo Clinic opened in 1986.
2. Rouse and Associates develop Jacksonville Center, consisting of a 23-story and a 30-story office buildings and a major hotel.
3. The 22-story Florida National Bank Tower opened in 1986, which is the first phase of the $ 350 million Enterprise Center located downtown.
4. Construction of the $ 30 million downtown people mover began in mid-1987.
5. Plans for St. Johns Harbour, south of Jacksonville in St. Johns County, are announced by Radcliffe Investment Co. of Arkansas and Central States Investment Co. of Memphis. This 30 year, six phase development will include offices, retail space, an industrial park, and more than 13,000 residential units, all at an estimated construction value of $ 1.6 billion.

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[19] Michael Selz, "Jacksonville Shows Signs of Oversupply," Florida Trend, Yearbook 1987, p. 113.

[20] Ibid., pp. 113-115.

6. Renaissance Place, also in downtown, will include three million square feet of office space and a 650 room hotel when completed in 10 to 15 years.

The other major market in Northeast Florida is Ocala and Marion County. In 1986, the U.S. Census Bureau reported that the Ocala area was the third fastest growing in the nation from 1981 to 1985.[21] The area recently opened its first luxury hotel and convention center, the 200 room, $ 14 million Ocala Hilton. Grounding breaking of a 242-acre, $ 107.6 million residential and commercial development named Cala Hills is scheduled for the fall of 1987. Construction in continuing on the $ 160 million Paddock Park. a 242-acre planned community. A $ 10 million pari-mutuel horse track is scheduled to open at the end of 1987. The construction of the $ 210 million Oak Run development has begun and is expected to continue through 2003.[22]

NORTHWEST FLORIDA REGION

In the Northwest portion of Florida, otherwise known as the Panhandle, economic expansion in not as prosperous as elsewhere in the state. However, Tallahassee, located in Leon County, is trying to diversify its economy away from education and government, and into the motion picture industry. In 1986,

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[21] Elizabeth Willson, "Much More than a Pass-Through Place," Florida Trend, Yearbook 1987, p. 105.

[22] Ibid., pp. 105-108.

construction was begun on Pegasus Studios, a $ 2 million sound studio located in Gadsden Station, an industrial park for entertainment oriented businesses. Additional expansion into the industrial market is planned with the construction of Innovation Park, a 208-acre wooded industrial research campus.[23]

The western portion of the Panhandle faces a major challenge of absorbing an overbuilt real estate market, with excesses of all forms except industrial space. Pensacola's office space vacancy rate is currently a high 29 percent. It is predicted that it will take at least 18 months until demand equals supply. Nonetheless, Houston based Development Group Inc. purchased 21,000 acres of Gulf beachfront for $ 200 million. Plans for this project, which have yet to be confirmed, include an international airport, hotels, a port, a theme park, high-rise condominiums, and retail space.[24]

CENTRAL FLORIDA REGION

Orlando has been enjoying construction records since the beginning of the 1980's. However, because the area is somewhat overbuilt, construction activity in the city will slow down a great deal in 1987. Before Orlando can increase its growth rate to that of previous years, commercial vacancy rates near 50 percent, and downtown hotel vacancy rates of over 50 percent,

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[23] Charlotte Wittwer, "Trying to Diversify a Two-Track Economy," Florida Trend, Yearbook 1987, pp. 129-130.

[24] Charlotte Wittwer, "A Push for Industry Begins to Payoff," Florida Trend, Yearbook 1987. pp. 137-140.

must be reduced. Additionally, Orlando's overburdened roads, sewers, and other public works are stifling growth, but efforts are currently under way to solve these infrastructure problems.[25]

Orlando is also entering the film making industry. In 1988, Disney and MGM are planning to open a $ 300 million, 900 employee movie studio, and a studio tour facility in 1989. MCA Inc. announced plans to open Universal Studios Florida in Orlando to compete with Disney. The combined total new employment of these studios is expected to be over 3,400.[26]

The Central Region is the state's leader in high-tech growth, and Orlando officials are currently trying "to turn the stretch of the Bee Line Expressway from Orange County to Cocoa into a corridor that will rival California's Silicon Valley."[27] This objective, if successful, would greatly boost Brevard County's growth, which has been suffering since the Challenger disaster.

In the northern part of the Central Region, work has begun on the 402-room, $ 50 million Daytona Beach Marriott. When completed, it is hoped that it will greatly increase Daytona's convention business which will incite the development of other large projects.[28]

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[25] Gregory Crouch, "Orlando Slows Down to Catch its Breath," Florida Trend, Yearbook 1987, p. 97.

[26] Ibid., p. 98.

[27] Ibid., p. 100.

[28] Ibid., p. 100.

SOUTHEAST FLORIDA REGION

The future outlook for development growth in western Dade and Broward Counties is very encouraging now that Interstate 75 and the Sawgrass Expressway have opened. Experts expect this corridor to become the site of major commercial, industrial, and residential development. Plans for the area already include a 200-acre regional mall, and expectations of at least ten more large scale projects which will require the approval of the Department of Regional Impact process. Predictions state that this corridor will be home to more than 700,000 people by the year 2000, which will be one-third of Broward County's population.[29]

In Dade County, several projects that have either recently opened or are currently under construction include: the opening of Rouse Co.'s Bayside Marketplace; completion of Joe Robbie's Dolphins Stadium; continued construction of the $ 50 million, 16,500-seat Miami Arena; the $ 53 million expansion of the Miami Beach Convention Center; and the twelve-block downtown development named Overtown / Park West.[30]

In the northern portion of the region, Palm Beach County continues to be the state's fastest growing county.[31] In

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[29] Matt Walsh, "Dade and Broward Open New Frontiers," Florida Trend, Yearbook 1987, p. 57.

[30] Ibid., p. 58-60.

[31] Ibid., p. 58.

December, 1987, the 49-mile addition to Interstate 95 is expected to open, which will connect Palm Beach, Martin, and St. Lucie Counties. Developers are currently acquiring large parcels of land along this corridor for future development. Also in December, the $ 60 million Treasure Coast mall in northern Martin County will open, and is expected to instigate additional developments.[32]

The population growth in this region has been enormous, and is expected to steadily increase, creating a tremendous market for residential development. The most ambitious project currently planned is Thomas J. Whites Corp.'s creation of a new city called St. Lucie West. Over the next 25 years, more than 15,000 residential units and supporting commercial developments are proposed for the 4,600-acre property.[33]

SOUTHWEST FLORIDA REGION

In 1986, Naples received the title of the fastest growing metropolitan area in the United States from the U.S. Department of Commerce. National publicity of the area has spurred even further growth in every facet of the economy. Surrounding communities are experiencing similar growth patterns. In Fort Myers, its Downtown Redevelopment Authority is spending $ 11 million for the construction of a new civic center, two parking

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32 John Taylor, "Development Finds its Way Up the Coast," Florida Trend, Yearbook 1987, pp. 65-66.

33 Ibid., p. 66.

garages, and a festival marketplace. Private development will include the construction of a 10-story office building.[34]

The Tampa Bay Area is enjoying its continued record-level growth. St. Petersburg has begun construction of the $ 66 million multipurpose domed stadium, which, when completed, is hoped to be a catalyst for economic revival of the downtown area. In Tampa, plans are underway to build up to a 55-story office building. The only drawback to the Bay Area's further expansion is mounting road system problems. A report by the State Comprehensive Plan Committee estimates that, "Hillsborough County must provide $ 1 billion in infrastructure improvements if it is to accommodate growth over the next 15 years."[35]

Lakeland, in Polk County, is the other major market in the Southwest Region. Situated in an enviable location between Orlando and Tampa, Polk County's future is very bright, especially as the state's distribution center since it is located so centrally. Planned projects for the area include: the $ 500 million Oakbridge residential and retail project in southern Lakeland; West Lakeland, a $ 1.9 billion residential, industrial, and retail development to house 29,000 people; and an eight square mile industrial and resort project named Green Valley.[36]

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[34] Bonnie Welch, "A New Attitude Embraces Growth," Florida Trend, Yearbook 1987, pp. 73-74.

[35] John Taylor, "Tampa Bay Takes Big-League Strides," Florida Trend, Yearbook 1987, pp. 81-82.

[36] Elizabeth Willson, "Lakeland Makes the Most of Location," Florida Trend, Yearbook 1987, pp. 89-90.

The overall construction industry in Florida has a very favorable outlook for the next 15 to 20 years. With the predicted population expansion, the single family home market is expected to be the most prosperous of the different areas in construction. The largest obstacle Florida currently faces is correcting existing infrastructure inadequacies. The State Comprehensive Plan estimates that $ 52.9 billion (three times the state's 1987 budget) is needed over the next ten years for essential infrastructure improvements.[37] These enhancements are a necessity if Florida is going to successfully further growth.

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[37] John Koenig, "The Danger Ahead," Florida Trend, Yearbook 1987, p. 45.

CHAPTER 3

THE UNITED BROTHERHOOD OF CARPENTERS AND JOINERS OF AMERICA

The United Brotherhood of Carpenters and Joiners of America (UBC), is one of the largest and oldest labor unions in North America. There are nearly 800,000[38] members in more than 2000 local unions located in every state in the United States and in every province of Canada. The UBC is organized into ten districts covering the United States and Canada with it's headquarters in Washington D.C. Each district has a fulltime executive serving on the General Executive Board. At the regional levels, local unions are further organized into district and state - or provincial, in Canada - councils. The United Brotherhood is now both a craft union, which typically limits membership to skilled craftsmen and their apprentices, and an industrial union, with membership being all or most employees working in a particular plant or industry, regardless of exact job description in that plant. The UBC's industrial membership is primarily those working in allied industries which supply forest products and manufactured goods that craftsmen install. Over 500,000 of the Brotherhood's membership are carpenters, with the balance of the members working as craftsmen, millwrights, floorlayers, drivers, etc.[39]

In Florida, there are 28 Local Union chapters. As of September 30, 1987, the total number of registered union

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[38] United Brotherhood of Carpenters and Joiners of America, AFL-CIO, This is the UBC, (Washington D.C., 1981), p. 6.

[39] Ibid., pp. 9-10.

carpenters in Florida was 11,304,[40] of which 409 are apprentices.[41] Although exact membership history data are not available, according to E. Jimmy Jones, Member General Executive Board, Fourth District, United Brotherhood of Carpenters and Joiners of America, the total number of union carpenters (journeymen and apprentices) has been slightly decreasing over the past ten years.[42] Current (September 30, 1987) membership in Locals ranges from 20 carpenters in Clearwater to nearly 2,300 in Miami.[43] The UBC also operates eleven apprenticeship programs in the state (the location is given in Figure 3-1). The apprenticeship program is four years in length, consisting of on-the-job training as well as an average of 600 hours of classroom instruction.[44] In addition to training new entrants, the UBC offers training for their journeymen carpenters so they may expand their skills and knowledge to include the latest innovations and techniques.

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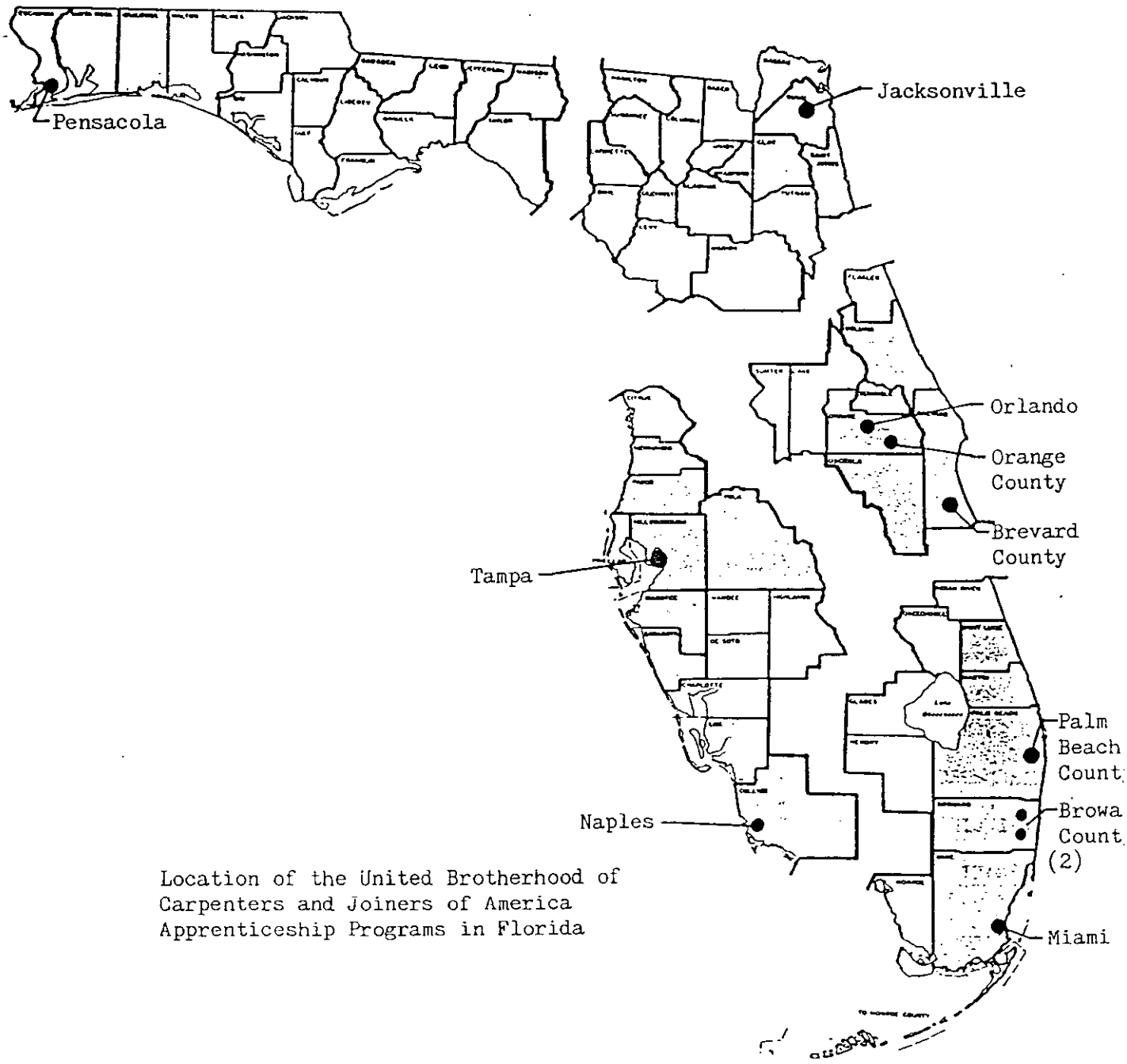
[40] Judith Placa, Secretary for E. Jimmy Jones, Member General Executive, Fourth District, United Brotherhood of Carpenters and Joiners of America, telephone conversation, November 18, 1987.

[41] State of Florida Department of Labor and Employment Security, Bureau of Apprenticeship, telephone conversation with secretary, December 11, 1987.

[42] E. Jimmy Jones, Member General Executive Board, Fourth District, United Brotherhood of Carpenters and Joiners of America, telephone conversation, December 11, 1987.

[43] Placa, telephone conversation, November 18, 1987.

[44] Sheli Romer et al., An Analysis of Carpentry Apprenticeship Programs In Florida; Technical Publication No. 47 School of Building Construction, University of Florida, 1987, p. B-97.



Location of the United Brotherhood of Carpenters and Joiners of America Apprenticeship Programs in Florida

Figure 3-1

The traditional relationship of and employer and unions in the construction industry is closer than in other industries. The workers are sheltered from the volatile economic and employment conditions found in construction by collective bargaining agreements. These agreements guarantee a continuing relationship between union and employer, stronger than could exist between employer and worker. The union insures standards of work to the employer and compensation to the worker.

The United Brotherhood of Carpenters and Joiners of America recently celebrated its centennial. After several organizational months, the Union's first convention was held on August 8, 1881, at the Trades Assembly Hall in Chicago. Thirty-six delegates representing about 4,800 members, adopted the first resolutions promoting better wages and working conditions.[45] Since that time, more than a hundred years of a rich and colorful history have past. The United Brotherhood has overcome many obstacles and raised carpenter's labor conditions to existing levels. The common goals that bound those men last century have not changed for today's members. The perpetual spirit of the Brotherhood is represented in an excerpt from an editorial written by Andrew P. Casilli, Broward County VOC (Voluntary Organizing Committee) Chairmen, published in South Florida Carpenter's V.O.C., Newsletter, in May 1987.

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[45] Walter Galenson, The United Brotherhood of Carpenters: The First Hundred Years (Cambridge: Harvard University Press, 1983), p. 31.

> The Brotherhood is much like an old clock that it still ticks in spite of the years of wear that it has endured. It has worked, and continues to work, because it was well made and well maintained by those whose care it was entrusted.
>
> We are the inheritance of the Brotherhood. It is our duty, our time in history to keep the dreams of our forefathers before us. The men of the past who suffered economic hardships and imprisonment, the men who were victims of the capitalists. The capitalists, those with a great concentration of wealth and power, able to control the means of labor and dictate to the workers what they would receive for the labor they performed.
>
> Our forefathers faced them, and now, its up to us to face them.

One of the strongest commitments of the Brotherhood is unity, for without this cohesiveness, there would not be the power of numbers. "The UBC is concerned, at all levels, with lifting the standard of living of its members."[46] This is achieved by negotiating collective bargaining agreements for higher wages, better working conditions, and pensions for health and welfare programs. The Brotherhood, from the national level down, also aides its members with specific needs. The national organization has assisted its Floridian Brothers several times in the past century.

In 1889, the General Executive Board sent $200 to the Jacksonville Local when members could not find work in town. The members were not allowed to leave the city to work in other

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46 The United Brotherhood of Carpenters and Joiners of America, AFL-CIO, p. 13.

jurisdictions because they were quarantined due to an epidemic. This allowed the Jacksonville workers to keep shelter and food until they could return to work.[47]

Again in 1906, the Brotherhood assisted its Jacksonville Local, where members complained that some Brotherhood members came to the area from the North during the winter months, and worked for nonunion contractors. In the Union's national monthly magazine, The Carpenter, the General Executive Board urged traveling carpenters to work only under union conditions to not undercut the local residents employment.[48]

For almost half of the twentieth century, elderly carpenters could retire to the Home for Aged Carpenters, in Lakeland, Florida. The Home was dedicated on March 12, 1929, at a cost of $ 775,548. The Brotherhood of Carpenters provided programs and services unmatched in magnitude by any other organization extending care for their over-aged members in the 1920's.[49] Any retired member with thirty years or more of good standing was allowed to retire in the Home. Additionally, the Home maintained a small but fully staffed hospital for the chronically ill. Meals, entertainment, special diets, and anything an aged carpenter might need was provided by the Home. In fact, each carpenter was supplied with "two new suits each year, two pairs

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[47] Galenson, p. 54.

[48] Ibid., p. 135.

[49] Maxwell C. Raddock, Portrait of an American Labor Leader: William L. Hutcheson (New York: American Institute of Social Sciences, 1955), p. 156.

of shoes, shirts, underwear and shaving equipment."[50] John J. Leary, Jr., wrote an article for New York World magazine in the late 1930's of his impressions of the Home for Aged Carpenters.

> Fancy if you can laboring men enjoying the comforts of a first-class city hotel plus an 18-hole golf course, said to be the finest in the South, a private lake to fish in and an orange grove of 1000 acres to ramble through - all without cost to themselves. That, in a nutshell, is what the United Brotherhood of Carpenters and Joiners of America is providing for its superannuated and incapacitated members in the $ 3,000,000 - Home just outside the city limits of Lakeland, Florida.[51]

Unfortunately, the Home was forced to close in 1972, due to increased operational costs and new state regulations for old age care which would have required a half-million dollars in improvements. "Progress often entails paradox. Organized labor's success in providing pensions for working men, in this instance, was ultimately responsible for the closing of the Home."[52]

In the fall of 1980, the General Executive Board assigned thirty staff representatives to Florida to work with Local and District Council organizations. Because Florida is a right-to-work state "where anti-union employer groups are strong," their

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[50] Ibid., p. 418.

[51] Thomas R. Brooks, The Road to Dignity: A Century of Conflict (New York: Atheneum, 1981), pp. 109-111.

[52] Ibid., pp. 202-203.

mission was to overcome the "concerted open shop movement."[53] This task was assisted by parallel efforts of the American Federation of Labor - Congress of Industrial Organizations (AFL-CIO) Building Trades Department.

The United Brotherhood of Carpenters and Joiners of America has grown from a small organization to one of the giants of the trade union world in the past century. The Brotherhood has faced many obstacles and temporary setbacks, but has "overcome them all, and emerged stronger than ever."[54] It has achieved its original goals of increasing wages and improving working conditions. However, these goals still exist, and the United Brotherhood will continue striving to lift the standard of living of its members. Another major contribution of the Brotherhood was the establishment of their excellent apprenticeship programs. Today's United Brotherhood is well-administered, well-financed, solidly structured, and ready to face any obstacle and triumph over it. The members are prepared to carry their Brotherhood traditions well into the next century.

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[53] Galenson, p. 371.

[54] Galenson, p. 383.

CHAPTER 4

QUESTIONNAIRE DEVELOPMENT

Information and required data was obtained using the Survey Research Method by means of a questionnaire. The research focused on the effects of a shortage of skilled carpenters on Florida contractors who have signed agreements with the United Brotherhood of Carpenters and Joiners of America. There are 169 active union contractors in Florida. Questionnaires were sent to this entire survey population. Of the total 169 questionnaires mailed , 52 were returned, for a response rate of 30.8 %, which was considered to be adequate to yield results of a high degree of confidence (Refer Appendix C-2 for Formula to Determine Required Sample Size).

QUESTIONNAIRE DEVELOPMENT

The initial questionnaire was developed following an extensive literature search analyzing building activity, construction labor supply trends, general economy, and existing problems in the carpentry trade. Consultants knowledgeable in the construction industry, particularly those involved with unionized construction, were interviewed to seek information about skill related problems and any additional insight to determine the types of questions which should be included in survey.

The questionnaire sent to union contractors contained questions very similar to those in the questionnaires that were

sent to the other segments (ABC, AGC, and FHBA) of the construction industry (Refer Figure 1-1, page 3). All of the questionnaires were designed in this manner so that responses from the different segments of the industry could be easily compared and contrasted. Therefore, certain questions directed at union contractors may seem to have a limited use in the context of unionized construction.

The questionnaire contained 31 questions printed on both sides of one page (See Appendix A-1 and A-2). The questions were designed to be answered in three basic categories: the first, responses were to be numeric, a percentage, or a check-mark; the second, responses were to be 'Yes,' 'No,' or 'Cannot Say'; and the third, where responses were to be on a Likhert scale of one to four.

The questionnaire was divided into six sections covering different topics. **Section one** was devoted to general background data of the respondent firm such as volume of business, type of construction undertaken (residential, commercial, or other), type of operation (open shop, union, or double-breasted), and the number of projects carried per year. **Section two** contained questions seeking specific information about the carpenters such as the number of journeymen carpenters employed, an estimate of those that are considered to be skilled, and number of apprentices employed. Other questions in this section asked average hourly wages paid to the journeymen carpenters and apprentices, average length of employment for journeymen

carpenters and apprentices, where the respondent searches for carpenters to hire, and finally what criteria determines promotion for the carpenters. Questions in **Section three** were to determine the status of the shortage of skilled carpenters in the Florida construction industry, such as availability of skilled carpenters to hire, what tasks a skilled carpenter should be able to preform, and information about paid overtime. **Section Four** contains questions concerning the amount and quality of subcontracted carpentry. **Section five** was to examine the role played by various training programs (union apprenticeship programs, on-the-job training, vocational training centers, open shop apprenticeship programs, and community college training) in preparing skilled carpenters for the construction industry. Questions also examined the amount and forms of communication between the industry and the training programs. The final part, **Section six**, was to solicit opinions on issues such as carpenter licensing and illegal aliens in the labor supply.

CONTENT VALIDITY

The preliminary questionnaire was developed based on information from a literature search and a meeting on February 2, 1987, in Jacksonville, attended by: James McClellan, Financial Secretary of Carpenters Local Union No. 627; Louis E. Toth, Apprenticeship Director of the North Florida Carpenters Joint Apprenticeship Committee; Al Herndon, Apprenticeship Director

Program Manager, Bureau of Apprenticeship, State of Florida Department of Labor and Employment Security; and Ali Markus, head of research team. This draft was then sent to a member of the Associated Builders and Contractors (ABC), a member of the Associated General Contractors (AGC), a member of the Florida Home Builders Association (FHBA), and a union contractor. Their comments were solicited and incorporated into a revised second draft. On May 12, 1987, a meeting in Gainesville, Florida, to discuss this second draft was held with Charles Nipper, Business Representative of Carpenters Local Union No. 1278, David Allen, representative from the United Brotherhood of Carpenters and Joiners of America and President of the Council of Industrial and Public Employees, and Ali Markus. Following this meeting, further suggestions were incorporated into the questionnaire to revise and clarify certain questions and to expand on certain topics, producing the final questionnaire used in the union carpenter study presented herein.

QUESTIONNAIRE ADMINISTRATION

The mailing of the questionnaires was administered by E. Jimmy Jones, Member General Executive Board, United Brotherhood of Carpenters and Joiners of America, in Miami, Florida. For various reasons, the Union does not release their mailing list. Mr. Jones appreciably sent out questionnaires to all of the

active union contractors in Florida, totaling 169.[55] Follow-up mailing procedures were employed until 52 questionnaires had been received yielding the final acceptable response rate of 30.8 % (Refer Appendix C-2). The breakdown of responses in Florida's five market regions, consistent with the Florida Statistical Abstract's Market Regions (See Figure 4-1),[56] was seven (7) responses from the Central Region, five (5) from the Northeast Region, thirty two (32) from the Southeast Region, and eight (8) from the Southwest Region (Refer Table 4-1). At the time of the survey, there were no active union contractors in Northwest Florida Region,[57] so questionnaires were not sent to this area, and thus the number of responses is zero (0) for the Northwest Region.

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[55] E. Jimmy Jones, Member General Executive Board, Fourth District, United Brotherhood of Carpenters and Joiners of America, telephone conversation, September 10, 1987.

[56] Anne H. Shoemyen and Susan S. Floyd, eds., 1986 Florida Statistical Abstract (Gainesville, Florida: The University of Florida Presses, 1986), p. 28.

[57] E. Jimmy Jones, Member General Executive Board, Fourth District, United Brotherhood of Carpenters and Joiners of America, telephone conversation, September 29, 1987.

Market Regions in Florida

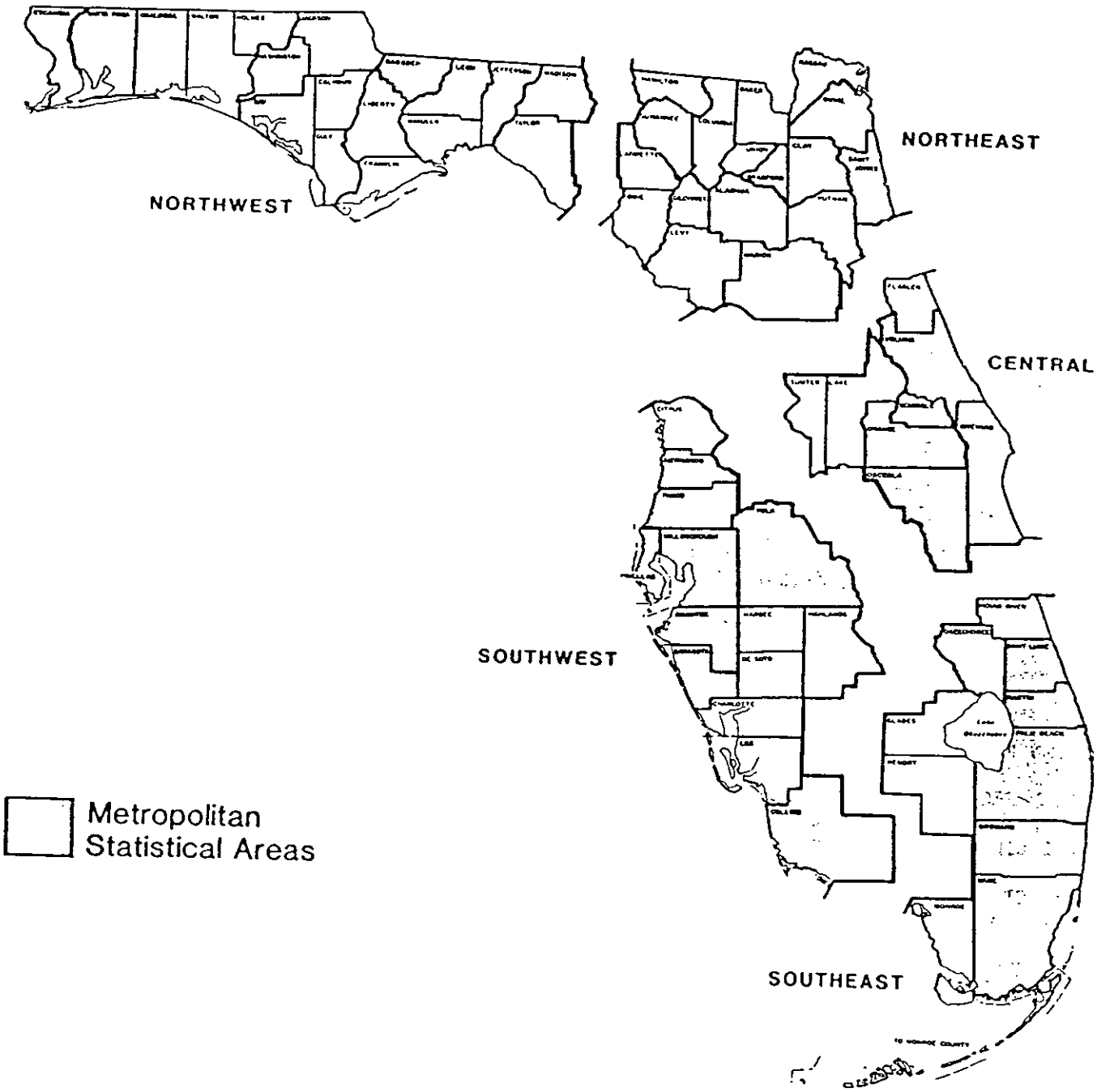

Figure 4-1

Source: 1986 Florida Statistical Abstract

RESPONSES BY REGION

REGION	NUMBER OF RESPONDENTS	PERCENT
Central	7	13.5
Northeast	5	9.6
Northwest	0	0.0
Southeast	32	61.5
Southwest	8	15.4
Total	52	100.0

Table 4.1 Responses by Region.

STATISTICAL ANALYSIS

The statistical analysis of the responses from the 52 questionnaires was preformed by Statistical Analysis System (SAS), using the facilities of the Northeast Regional Data Center of the State University System of Florida. SAS is an integrated data analysis system capable of storage, file handling, data modification, report writing, and statistical analysis. The statistical functions performed by SAS used in this study include averages, means, medians, minimums, maximums, standard deviations, correlations, and frequency distributions.

CHAPTER 5

STATISTICAL ANALYSIS

The analysis of the carpentry trade in the construction industry in Florida, presented in this report, was primarily based on 52 responses received from 169 questionnaires sent to union contractors in the state. This is an acceptable response rate of 30.8 %. A sample of the questionnaire is in appendix A (See appendix A-2, A-3).

In this chapter, the data of the total population, or statewide responses, are analyzed. The following chapter will contain a regional analysis. Detailed regional responses are located in Appendix B. For the purposes of analyzing similar data, the questionnaire can be divided into seven sections as follows :

Section One - Background information on the respondent firms.

Section Two - Specific information about the carpenters employed by union contractors.

Section Three - Questions to determine the status of the shortage of skilled carpenters in the construction industry.

Section Four - Information concerning the skill level of any subcontracted carpentry work.

Section Five - Questions to examine the role played by various training programs in preparing skilled carpenters for the construction industry.

Section Six - Solicitation of opinions on issues such as licensing and illegal aliens in the construction industry.

Section Seven - Pearson Correlations.

1. BACKGROUND INFORMATION OF THE RESPONDENTS

Responses were received from all over the state, with the exception of the northwest region. At the time of this survey, UBC activity in this region was nonexistent. No questionnaires were sent to this region and thus none were received.[58] The number of responses from the different regions of Florida are shown in Table 5-1a.

RESPONSES BY REGION

REGION	NUMBER OF RESPONDENTS	PERCENT
Central	7	13.5
Northeast	5	9.6
Northwest	0	0.0
Southeast	32	61.5
Southwest	8	15.4
Total	52	100.0

Table 5-1a Responses by Region.

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58 E. Jimmy Jones, Member General Executive Board, Fourth District, United Brotherhood of Carpenters and Joiners of America, telephone conversation, September 29, 1987.

Nature and Size of Firms :

Due to the nature of this report, all of the 52 respondents are union contractors. Eight of these respondents, or 15.4 %, are double-breasted operations, with the remaining 44 (84.6 %) respondents being entirely union contractors (Refer Table 5-1b).

TYPE OF OPERATION

TYPE OF OPERATION	NUMBER OF RESPONDENTS	PERCENT
Open Shop	0	0.0
Both (Double-Breasted)	8	15.4
Union	44	84.6
Total Response	52	100.0
No Response to this Question	0	0.0

Table 5-1b Type of Operation

It is commonly acknowledged that unionized construction is typically nonresidential.[59] Out of the respondents surveyed, 71.3 % of the total work was in commercial construction and 20.1 % was other type construction, most commonly industrial work. The remaining 8.6 % work was found to be in residential construction (Refer Table 5-1c).

TYPE OF CONSTRUCTION UNDERTAKEN

TYPE OF CONSTRUCTION	AVERAGE PERCENTAGE
Commercial	71.3
Other	20.1
Residential	8.6

Table 5-2c Type of Construction.
(in percentage)

A total of 46 firms reported their annual business volume for a cumulative total of over $ 1.1 billion. The average volume was $ 24.08 million, however, a few high volume firms (up to $ 700 million) distorted this average. This statistic is more accurately stated along with its median value of $ 3.25 million. At the other end of the scale, one respondent reported an annual

[59] Howard G. Foster, Manpower In Homebuilding: A Preliminary Analysis (Philadelphia, PA, 1974), p. 4.

volume of $ 40,000. Additionally, firms were asked to report the number of projects carried per year, and their average was 65 with a median of 20 projects per year. The range was from two to 800 projects per year (Refer Table 5-1d).

AVERAGE ANNUAL VOLUME OF BUSINESS
FOR UNION CONTRACTORS SURVEYED

BACKGROUND INFORMATION	AVERAGE	MINIMUM	MEDIAN	MAXIMUM
Annual Volume of Business (in millions)	$ 24.08	$ 0.04	$3.25	$ 700.0
Number of Projects Carried per Year	65	2	20	800

Table 5-1d Average Annual Volume of Business.

2. SPECIFIC INFORMATION ABOUT THE CARPENTERS

The respondents showed that, on the average, there are 21 journeymen carpenters employed by each union contractor, with a median of 14 journeymen carpenters per contractor. Out of these, an average of 12 and a median of 8 journeymen carpenters are are rated by their employers as skilled (Refer Table 5-2a). Thus, 57 % of the carpenters at the journeymen level are considered to be skilled. Additionally, each union contractor employs an average of three (a median of one) apprentices or carpenters-in-training. That shows a rather low average of 12.5 % and an even lower median of 6.7 % of all carpenters employed as being apprentices or carpenters-in-training.

SKILL LEVEL OF CARPENTERS

RESPONSE	AVERAGE	MINIMUM	MEDIAN	MAXIMUM
Number of Journeymen Carpenters on the payroll	21	0	14	100
Number of Journeymen Carpenters that are skilled	12	0	8	50
Number of Apprentices or Carpenters-in-training on the payroll	3	0	1	25

Note : Figures have been rounded.

Table 5-2a Number of Carpenters in Employment (By Skill Level)

According to an Engineering News Record nationwide survey taken in September, 1987, union carpenters are the lowest paid group of the three skilled trades (carpenters, bricklayers, and ironworkers) indexed in their report. Additionally, union carpenters reported the lowest wage gains from September, 1986- up only 2.5 % ; compared to a gain of 2.7 % for union ironworkers and a 3.9 % gain for union bricklayers. The national hourly wage, including a fringe benefit package, averaged $ 21.64. This pay scale ranged from $ 11.33 an hour in Greensboro, North Carolina, to $ 31.70 an hour in Fairbanks, Alaska. Average hourly wages for union carpenters in Florida, including fringe benefits, were reported at $13.46 for Tampa, $ 14.84 for Jacksonville, and $ 16.40 for Miami.[60]

The average of the above mentioned Florida wages is $ 14.90 per hour. This figure, keeping in mind that it includes fringe benefits and is reported from large cities, where wages are expected to be somewhat higher, is only $ 1.75 an hour higher than the average hourly wage for journeymen carpenters revealed in the present study - $ 13.15 (See Table 5-2b). Noting that this figure does not include fringe benefits, and is an average of all respondents, including those from outlying towns where wages are expected to be lower, these two figures validate one another.

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[60] Rob McManamy, "Inflation Seeps into Costs," Engineering News Record, September 17, 1987, pp. 52-61.

The average journeyman carpenter hourly wage of $ 13.15 should be compared with the median of $ 12.60 in a range from $ 9.35 to $ 18.00. The average hourly wage for an apprentice or carpenter-in-training is $ 9.30 with a median of $ 8.75 in a range of $ 6.82 to $ 16.00 (Refer Table 5-2b).

WHAT IS THE AVERAGE HOURLY WAGE PAID BY YOUR FIRM TO THE FOLLOWING ?
1. Journeyman Carpenter
2. Apprentice (Carpenter-in-training)

CARPENTER	AVERAGE	MINIMUM	MEDIAN	MAXIMUM
Journeyman Carpenter	$ 13.15	$ 9.35	$ 12.60	$ 18.00
Apprentice (Carpenter-in-training)	$ 9.30	$ 6.82	$ 8.75	$ 16.00

Table 5-2b Hourly Wages (in dollars, without fringe benefits)

In an interview for Engineering News Record, Joseph E. Martin, president of the Florida Trades Building Council in Tallahassee, felt that Florida's wages are substanially lower than the national average because:

> "In Florida, where the open shop has succeeded in creating a textbook environment of almost pure competition, projects go to 'cheaper and cheaper labor.' The situation has created a sharp decline in building workers' competency levels."[61]

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[61] Rani Isaac, "Some Trades Cooling to Give-backs," Engineering News Record, September 18, 1986, p. 61.

The average length of employment for journeymen carpenters is 32 months with the median being 12 months. Apprentices or carpenters-in-training work for an average of 15 months and a median of 12 months. (Refer Table 5-2c). Some of the union contractors indicated that a carpenter's employment duration is dependent on such factors as size of a job, volume of the firm, or performance level. These views were expressed by the following comments on some of the responses:

- Some of our carpenters and apprentices have been employed for years
- Varies with job size and duration
- Some good ones always remain with us
- Some as needed, two to three months on a big job; others as long as needed

HOW LONG, ON THE AVERAGE, DO THE CARPENTERS STAY IN YOUR EMPLOYMENT ?

CARPENTER	AVERAGE	MINIMUM	MEDIAN	MAXIMUM
Journeyman Carpenter	32	1	12	240
Apprentice Carpenter-in-training	16	0	12	120

Note : Figures have been rounded.

Table 5-2c Average Length of Employment (in months)

Contractors were asked where they search for carpenters to hire. Naturally, due to all respondents being union contractors, the highest ranked hiring practice was to use Labor unions (ranked 3.47, between 4, Always and 3, Most of the time). Union apprenticeship programs came in second, followed by Contacts in the construction industry and then the use of Labor (employment) agents. The next five hiring practices (in order) were: Other

WHERE DO YOU SEARCH FOR CARPENTERS ?
Use the following scale:
4. Always
3. Most of the time
2. Sometimes
1. Never

HIRING PRACTICE	AVERAGE
Labor Unions	3.47
Union apprenticeship programs	2.60
Contacts in the construction industry	2.30
Labor agents	2.03
Other construction jobs	1.84
Company on-the-job training	1.54
Advertisements in the papers	1.34
Vocational training centers	1.12
Community college training programs	1.12
Open-shop apprenticeship programs	1.00

Table 5-2d Hiring Practice.

construction jobs, Company on-the-job training, Advertisements in the papers, Vocational training centers, and Community college training programs. Note that these five practices have average rankings between Sometimes (2), and Never (1). The lowest ranked hiring practice used by the respondents was Open-shop apprenticeship programs. This in and of itself is not surprising, with all of the respondents being union contractors. However, its average ranking was 1.00, which means that each respondent has never used an Open-shop apprenticeship program to hire carpenters - not even those respondents whom operate double-breasted firms (Refer Table 5-2d).

Contractors were additionally asked "What criteria determines promotion or an increase in wages of a carpenter in your company?" This question was designed to ascertain the requisites of upward mobility for a carpenter. The majority of the respondents ranked Performance as the most important factor, followed by Experience, which is how long a carpenter has been working in carpentry. Graduation from training programs was ranked third, which indicates some incentive for prospective carpenters to graduate from some training program if they are to enjoy upward mobility in their field. Market wage rate and Seniority, the length of time a carpenter has been with his present employer, have the least importance in determining a carpenter's success (Refer Table 5-2e).

WHAT CRITERIA DETERMINES PROMOTION OR AN INCREASE IN WAGES OF A CARPENTER IN YOUR COMPANY ?

Use the following scale :

4. Always
3. Most of the time
2. Sometimes
1. Never

PROMOTION CRITERIA	AVERAGE
Performance	3.45
Experience	3.02
Graduation from training program	2.73
Market wage rate	2.28
Seniority	1.93

Table 5-2e Promotion Criteria.

3. STATUS OF SHORTAGE OF SKILLED CARPENTERS

Several questions were asked of the contractors to determine the status of skilled carpenters in Florida. As an introductory question, the contractors were asked, "Are there enough skilled carpenters for you to hire?" The majority of the contractors (57.7 %) claim that there are not enough skilled carpenters to hire, thus indicating some type of a shortage. However, many respondents (40.4 %) have had no trouble in finding and hiring carpenters (Refer Table 5-3a).

ARE THERE ENOUGH SKILLED CARPENTERS FOR YOU TO HIRE ?

RESPONSE	NUMBER OF RESPONDENTS	PERCENT
Yes	21	40.4
No	30	57.7
Cannot Say	1	1.9
No Response to this Question	0	0.0

Table 5-3a Availability of Skilled Carpenters.

Next, the contractors were asked, "Do you feel there is a need for more skilled carpenters in commercial construction?" An overwhelming majority of 80.0 % of the respondents felt that there is a definite need for more skilled carpenters. Only 10.0 % of the contractors responded that there is not a need for more carpenters (Refer Table 5-3b).

DO YOU FEEL THERE IS A NEED FOR MORE SKILLED CARPENTERS IN COMMERCIAL CONSTRUCTION ?

RESPONSE	NUMBER OF RESPONDENTS	PERCENT
Yes	40	80.0
No	5	10.0
Cannot Say	5	10.0
No Response to this Question	2	*

Table 5-3b Need for Skilled Carpenters.

The responses for these two questions clearly indicates that there is indeed a shortage of skilled carpenters. Some of the contractors who have not observed a carpenter shortage indicated that they have had an adequately sized crew of competent, skilled carpenters in their employment for years, and thus infrequently search to hire more carpenters.

The next question in the survey was designed to determine exactly what would define a carpenter as being skilled in the opinion of the union contractors. The respondents were asked, "In your opinion, which of the following tasks must a 'skilled carpenter' be able to perform proficiently?", and to rank these tasks. The summarization of these tasks can be found in Table 5-3c. Interestingly, all of the 20 tasks listed received a ranking between 3 and 2, or between Necessary and Desirable. The tasks ranked highest (Construct interior stairs, Issue instructions to crew members, Construction forms) are tasks that are typically more common to commercial rather than residential construction. The tasks ranked of least importance (Build trusses, Apply weather stripping and caulking, Install drywall material) are tasks that are typically either subcontracted or prefabricated. Several respondents added other tasks in which they felt were important for a skilled carpenter to be able to perform. Some of these were:

- Use basic level and transit
- Erect scaffolding
- Concern with safety
- Quality workmanship
- Energy, motivation, positive, and dependable
- Supervise subordinates and subcontractor

IN YOUR OPINION, WHICH OF THE FOLLOWING TASKS MUST A "SKILLED CARPENTER" BE ABLE TO PERFORM PROFICIENTLY ?

Use the following scale :
4. Absolutely Necessary
3. Necessary
2. Desirable
1. Unnecessary

Table 5-3c

TASKS	AVERAGE
Construct interior stairs	2.74
Issue instructions to crew members	2.68
Construction forms (footings, walls, edge, curbs)	2.67
Install exterior wall covering and trim	2.66
Construction forms (piers, columns, beams, slabs, stairs, bridge, deck)	2.65
Install paneling, furring, soffit ceiling	2.65
Install decking and sheathing	2.64
Install cabinets, fixtures and shelving	2.63
Frame partitions	2.63
Frame roofs	2.63
Install structural timber	2.62
Read blueprints	2.60
Preplan forthcoming activities	2.60
Frame floor and sills	2.59
Install door, window frame and units	2.59
Install insulation and sound control material	2.57
Conduct site preparation and layouts	2.56
Build trusses	2.54
Apply weather stripping and caulking	2.50
Install drywall material	2.47

The contractors were asked to comment on whether or not the future carpenter will be required to perform a broader variety of tasks. All three type carpenters are expected to have a somewhat broader task requirement (Refer Table 3d). Additionally, some of the respondents suggested that drywall (metal studs) installers will have to perform a much broader variety of tasks.

WILL THE FUTURE CARPENTER BE PERFORMING A BROADER VARIETY OF TASKS ?

Use the following rating system :

4. Much broader
3. Broader
2. No change
1. Narrower

CARPENTER	AVERAGE
Framing carpenters	2.61
Form carpenters	2.57
Finish carpenters	2.53

Table 5-3d Future Carpenter's Tasks.

When the contractors were asked if they would bid more jobs or increase the volume of their business if there was an adequate supply of skilled carpenters in the industry, 32.7 % answered 'Yes.' However, 40.4 % of the respondents said that they would not increase their present business volume and 26.9 % could not say (Refer Table 5-3f).

WOULD YOU BID MORE JOBS OR INCREASE THE VOLUME OF YOUR BUSINESS IF THERE WAS AN ADEQUATE SUPPLY OF SKILLED CARPENTERS IN THE INDUSTRY ?

RESPONSE	NUMBER OF RESPONDENTS	PERCENT
Yes	17	32.7
No	21	40.4
Cannot Say	14	26.9
No Response to this Question	0	0.0

Table 5-3f Effect of Availability of Skilled Carpenters on Business Volume.

When the contractors were asked if they had ever paid overtime to skilled carpenters in the past year because of a shortage in the market, a majority of 61.5 % reported that they had not. However, a substantial percentage of the contractors (36.5 %) did indeed have to pay overtime to skilled carpenters, blaming a shortage in the market as the cause (Refer Table 5-3g).

HAVE YOU EVER, IN THE PAST YEAR, PAID OVERTIME TO SKILLED CARPENTERS BECAUSE OF ANY SHORTAGE IN THE MARKET ?

RESPONSE	NUMBER OF RESPONDENTS	PERCENT
Yes	19	36.5
No	32	61.5
Cannot Say	1	1.9
No Response to this Question	0	0.0

Table 5-3g Overtime Payments.

Although 36.5 % of the respondents paid overtime to carpenters because of a shortage, an average of only 6.0 % of a carpenter's total hours was estimated to be overtime (Refer Table 5-3h).

WHAT PERCENTAGE OF HOURS WORKED BY CARPENTERS IS OVERTIME ?
Please Estimate.

QUESTION	AVERAGE	MINIMUM	MEDIAN	MAXIMUM
Percentage of overtime hours worked by the carpenters	6.0 %	0.0 %	5.0 %	40.0 %

Table 5-3h Estimated Overtime Hours.
(in percentage)

Even with a shortage of skilled carpenters in the market, this is a very low rate of paid overtime. Contractors have shown a reluctance to pay overtime and would rather increase their crew size to avoid paying overtime. When the question, "Would you hire more skilled carpenters to avoid paying overtime?" was asked, an overwhelming majority of 58.0 % of the respondents answered 'Yes,' while only 20.0 % answered 'No'. 22.0 % of the respondents could not say either way (Refer Table 5-3i).

WOULD YOU HIRE MORE SKILLED CARPENTERS TO AVOID PAYING OVERTIME ?

RESPONSE	NUMBER OF RESPONDENTS	PERCENT
Yes	29	58.0
No	10	20.0
Cannot Say	11	22.0
No Response to this Question	2	*

Table 5-3i More Skilled Carpenters versus Overtime.

A final question concerning the reasons for the shortage of skilled carpenters was asked of the contractors. A general decline in craftsmanship was cited as being the most important factor, followed by more emphasis on cutting costs than quality control, and a low profile of labor unions. The construction boom, lack of training programs, and a greater emphasis on factory built components causing a decreased demand in the skills level of on site carpenters are reasons believed to have some importance as causing a shortage. Finally, low wage rates and part time carpenters were viewed as having little or no importance in contributing to a shortage of skilled carpenters (Refer Table 5-3j).

IN YOUR VIEW, IS THE SHORTAGE OF SKILLED CARPENTERS DUE TO :

Use the following scale :
4. Very important reason
3. Important reason
2. Could be a reason
1. Not a reason at all

REASONS	AVERAGE
General decline in craftsmanship	3.05
More emphasis on cutting cost than quality control	2.79
Low profile of labor unions	2.74
Construction boom	2.68
Lack of training programs	2.55
Because there is greater emphasis on factory built components (trusses etc.), there is a decreased demand in the skills level of on site carpenters	2.30
Low wage rates	2.17
Part time carpenters	1.80

Table 5-3j Reasons for the Shortage of Skilled Carpenters.

A number of the respondents felt that today's younger carpenters do not have the same sense of pride that their forefathers had. This view was expressed by the following comments.

- Not looked at as an honorable career by young people.

- A big shortage of motivated and productive carpenters.

- Young carpenters today do not share the same enthusiasm and motivation that carpenters of yesterday had.

- Where is the old pride ?

Additional opinions of the respondents concerning the cause of the shortage are expressed below:

- Because the carpenters would rather do piece work.

- Lack of work with union carpenters because of their emphasis on cutting their costs and my quality ! (Opinion from contractor in a double-breasted operation).

- Union attitude.

4. INFORMATION ON THE SKILL LEVEL OF SUBCONTRACTED CARPENTRY WORK

About 27 % of the contractors reported that they subcontract some portion of their carpentry work. Of those respondents that do, an average of 23.9 %, with a median of 15.0 %, of their carpentry work is subcontracted (Refer Table 5-4a).

WHAT PERCENTAGE OF CARPENTRY WORK DO YOU SUBCONTRACT ?

QUESTION	AVERAGE	MINIMUM	MEDIAN	MAXIMUM
Percentage of Carpentry work Subcontracted	23.9 %	3.0 %	15.0 %	75.0 %

Table 5-4a Percentage of Carpentry Work Subcontracted.

The analysis of the responses in this section will include only those responses of the above mentioned 27 % (a total of 14 respondents). These contractors were then asked if there were enough firms available to handle their subcontracted carpentry work. More than one-third (38.5 %) of the respondents answered 'Yes,' while 30.8 % of the contractors felt that there were not enough firms available to subcontract their carpentry work. The remaining 30.8 % of the respondents were not in a position to say (Refer Table 5-4b).

IF YOU SUBCONTRACT A MAJORITY OF YOUR CARPENTRY WORK, ARE THERE ENOUGH FIRMS AVAILABLE TO DO YOUR WORK ?

RESPONSE	NUMBER OF RESPONDENTS	PERCENT
Yes	5	38.5
No	4	30.8
Cannot Say	4	30.8
No Response to this Question	39	*

Table 5-4b Availability of Firms to Subcontract Carpentry Work.

The next question attempted to elicit information from the contractors concerning the quality of the subcontracted work. A majority of the respondents (46.7 %) were satisfied with the quality, while 33.3 % felt that the quality was not adequate (Refer Table 5-4c).

ARE YOU SATISFIED WITH THE QUALITY OF THE WORK DONE BY THE FIRMS TO WHOM YOU SUBCONTRACTED WORK ?

RESPONSE	NUMBER OF RESPONDENTS	PERCENT
Yes	7	46.7
No	5	33.3
Cannot Say	3	20.0
No Response to this Question	37	*

Table 5-4c Quality of Subcontracted Work.

Contractors were then asked, "In your opinion, is the skill level of carpenters who work on the subcontracted work adequate?" Exactly one half (50.0 %) of the respondents felt that skill level of these carpenters was inadequate, and 42.9 % felt that it was fine. Only one respondent could not say (Refer Table 5-4d).

IN YOUR OPINION, IS THE SKILL OF THE CARPENTERS WHO WORK ON THE SUBCONTRACTED WORK ADEQUATE ?

RESPONSE	NUMBER OF RESPONDENTS	PERCENT
Yes	6	42.9
No	7	50.0
Cannot Say	1	7.1
No Response to this Question	38	*

Table 5-4d Adequacy of Subcontracted Skills.

In the final question concerning subcontracted carpentry work, in the opinion of the respondents, only 33.7 % of the subcontractor's carpenters were thought to be skilled (Refer Table 5-4e).

IN YOUR OPINION, WHAT PERCENTAGE OF THE SUBCONTRACTOR'S CARPENTERS ARE SKILLED CARPENTERS ?

QUESTION	AVERAGE	MINIMUM	MEDIAN	MAXIMUM
Percentage of subcontractor's carpenters that are skilled	33.7 %	10.0 %	25.0 %	90.0 %

Table 5-4e Percentage of Skilled Subcontractor's Carpenters.

5. ROLE PLAYED BY TRAINING PROGRAMS

As an introductory question in the series concerning the role played by training programs, the contractors were asked to rate different training programs (Union apprenticeship programs, On-the-job training, Vocational training centers, Open shop apprenticeship programs, and Community college training) in their contributions in supplying skilled carpenters to the construction industry (Refer Table 5-5a). In another question, the contractors were asked to rate these same training programs on how well they produce the most qualified carpenters for their needs (Refer Table 5-5b). The rankings for both questions were in identical order. Not surprisingly, due to the nature of this survey, union apprenticeship programs were ranked first on both lists. On-the-job training came in a strong second, however this term can be somewhat misleading. This term implies that one is actually being 'trained' on the job, which would require constant supervision and teaching. While this may be true in some cases, the apprentice engaged in on-the-job training might be more appropriately labeled as receiving hands-on experience. Whatever the term, the importance in its high ranking shows the definite need for extended training outside the classroom and in the field. Vocational training centers were found to be another viable source in producing skilled carpenters for the union contractors. The respondents conceded that open shop apprenticeship programs, ranked fourth, have been successful in producing skilled carpenters, although these programs are not

utilized in supplying their carpenters very often. Community college training programs were found to have little or no importance in producing or supplying skilled carpenters to the union contractors.

ARE THE FOLLOWING TRAINING PROGRAMS MAKING ANY SUBSTANTIAL CONTRIBUTIONS IN SUPPLYING SKILLED CARPENTERS TO THE CONSTRUCTION INDUSTRY ?

Use the following scale :

4. To a large extent
3. To some extent
2. To a small extent
1. Negligible

TRAINING PROGRAM	AVERAGE
Union apprenticeship programs	3.29
On-the-job training	2.93
Vocational training centers	2.03
Open shop apprenticeship programs	1.69
Community college training	1.37

Table 5-5a Contribution of the Training Programs.

IN YOUR OPINION, ARE THE FOLLOWING TRAINING PROGRAMS MAKING ANY SUBSTANTIAL CONTRIBUTIONS IN PRODUCING THE BEST CARPENTERS FOR YOUR NEEDS ?

Rank on a 1 - 4 scale :

4. Being the best
3.
2.
1. Being the worst

TRAINING PROGRAM	AVERAGE
Union apprenticeship programs	3.25
On-the-job training	2.88
Vocational training centers	2.13
Open shop apprenticeship programs	2.00
Community college training	1.79

Table 5-5b Performance of the Training Programs.

The need for carpenters to undergo some type of formal classroom training was viewed as a significant portion of the overall training process. An overwhelming majority of 80.0 % of the respondents felt that classroom training is necessary, while only 8.0 % did not. The balancing 12.0 % of the contractors were not sure what effect classroom training has on carpenters (Refer Table 5-5c).

DO YOU THINK THAT CARPENTERS WORKING IN COMMERCIAL CONSTRUCTION NEED TO UNDERGO SOME CLASSROOM TRAINING PROGRAM ?

RESPONSE	NUMBER OF RESPONDENTS	PERCENT
Yes	40	80.0
No	4	8.0
Cannot Say	6	12.0
No Response to this Question	2	*

Table 5-5c Need for Classroom Training.

When the union contractors were asked to rate the levels of communication between certain training programs and themselves, the only notable communications existed with union apprenticeship programs and on-the-job training (Refer Table 5-5d).

WHAT LEVEL OF COMMUNICATIONS DO YOU HAVE WITH THE FOLLOWING TRAINING PROGRAMS ?

Use the following scale :

4. Very close
3. Close
2. Remote
1. Very remote

TRAINING PROGRAM	AVERAGE
Union apprenticeship programs	2.78
On-the-job training	2.46
Vocational training centers	1.30
Open shop apprenticeship programs	1.20
Community college training	1.13

Table 5-5d Communication Level Between Industry and Training Programs.

The contractors were also asked to rank the best methods for establishing links between the industry and its training programs. Formal meetings between the two groups was found to be the most effective method for creating this linkage. The other methods (in order), attending educational functions,written contact, and sitting in on an advisory committee, were all ranked as having a relatively high degree of importance (Refer Table 5-5e). However, although the respondents rated all of the methods as having significance, it is doubtful that these contractors actually employ the methods very often. This is substantiated with the findings from the previous question (See Table 5-5d).

RANK THE FOLLOWING AS THE BEST METHOD OF ESTABLISHING AN INDUSTRY/TRAINING PROGRAM LINKAGE .
(1,2,3,4; 4 being the most important)

STRATEGY	AVERAGE
Formal meeting of the two groups	3.14
Attending educational functions	2.84
Written contact	2.74
Sitting on an advisory committee	2.62

Table 5-5e Strategy for Industry / Training Program Linkage.

Contractors were then requested to offer their opinions on what factors could provide more effective involvement with training programs for a closer working relationship. Some are listed as follows:

- Directors of training programs should be in closer touch with those who employ carpenters and apprentices.

- Better organization and faculty for existing programs, most of which are under-furnished except for union apprentice programs. Work done in classroom cannot replace on-the-job training for any trade. A combination of both is necessary.

- Make the apprentice think and take pride in his work.

- Personnel who want to achieve or be good at their trade should go to school and not be carried by contractors.

- Provide a preferred bidding list of contractors supporting (both prime and sub) educational or training programs that increase craft ability.

- Make it worthwhile to employers. Sell owners on the benefits of pay for apprentices even when direct results cannot be seen.

- Communication for future needs.

- Tie completion of training program directly to employment with the company on a predetermined basis (depending on availability of projects.

- Training programs should be better organized and conducted on a more serious basis.

One respondent generously offered a short editorial of a possible solution for meeting future labor needs.

> "We have fantastic facilities in some of our high schools. Start training kids in the senior high school age, in combination with the different building trades, or utilize the vocational schools with additional courses in carpentry - electrician - plumbers - welders - etc... We are going to have monies from the (state) lottery for schools. Let's train our 10th, 11th, and 12th grade students a trade in combination with the essentials - math and grammar. Not everybody is college material - we already have too many chiefs. We need more indians <u>trained</u>."

6. OPINIONS AND ISSUES

Finally, there were a several questions in the survey addressing issues which affect the skill level of carpenters. The contractors were asked if, in their opinion, carpenters should be required to have a license to insure better skills and standards. A majority of 57.7 % of the respondents felt that this was not a good idea, although 26.9 % were for licensing and 15.4 % could not say (Refer Table 5-6a).

IN YOUR OPINION, SHOULD THE CARPENTER BE REQUIRED TO HAVE A LICENSE TO INSURE BETTER SKILLS AND STANDARDS ?

RESPONSE	NUMBER OF RESPONDENTS	PERCENT
Yes	14	26.9
No	30	57.7
Cannot Say	8	15.4
No Response to this Question	0	0.0

Table 5-6a Licensing of Carpenters.

Several of the contractors that were in favor of the idea of licensing for carpenters included the following remarks with their responses:

- Licensure, continuing education requirements, and proficiency testing will greatly increase the skill level of all carpenters.

- So much of the important phases of carpentry work is done by subs. If testing and licensing of carpenters and sub-carpenters (especially drywalling and framing) were present, this would greatly upgrade quality.

- Unions refuse to classify carpenters as 'skilled,' 'trim,' framing,' rough,' etc... All are presently classified the same - simply carpenter. All are paid the same, so there is no incentive for the non-skilled carpenter to improve since he is already getting paid the same as a skilled carpenter. Unions should and need to classify them.

- Good training and certification is necessary. Unions should not let a carpenter into the field just because he owns a hammer.

- A more detailed entrance exam for new-union carpenters should be given. Also, a rating card stating in which field the carpenter is proficient in is needed.

With the current immigration policy and its burden put upon the employer of detecting illegal aliens and not employing any without the risk of penalty, there is a growing concern in the construction industry of the actual number of illegal aliens working in this field. It is the opinion of 50.0 % of the respondents that illegal aliens are indeed being hired by other construction firms. Only 7.7 % believed that illegal aliens are not being hired, while 42.3 % were in no position to say (Refer Table 5-6b).

FROM YOUR EXPERIENCE, DO YOU BELIEVE THAT ILLEGAL ALIENS ARE BEING HIRED BY OTHER CONSTRUCTION FIRMS ?

RESPONSE	NUMBER OF RESPONDENTS	PERCENT
Yes	26	50.0
No	4	7.7
Cannot Say	22	42.3
No Response to this Question	0	0.0

Table 5-6b Illegal Alien Carpenters.

It was also the opinion of the contractors that an average of 11.0 %, the median being 10.0 %, of the total number of carpenters in the state of Florida are illegal aliens (Refer Table 5-6c).

IN YOUR OPINION, WHAT PERCENTAGE OF THE CARPENTERS IN FLORIDA ARE ILLEGAL ALIENS ?

QUESTION	AVERAGE	MINIMUM	MEDIAN	MAXIMUM
Percentage of illegal alien carpenters	11.0 %	1.0 %	10.0 %	30.0 %

Table 5-6c Estimated Percentage of Illegal Aliens.

7. PEARSON CORRELATIONS

In addition to the analysis presented thus far, the data were investigated to determine if any Pearson Correlations existed. A correlation, statistically, is the significance of a commonality of the responses between any variables (questions). For example, if the trend of the responses for one question is similar to the trend of the responses of another question, then some correlation exists.

A Pearson Correlation Coefficient is a number ranging between 1.00000 and - 1.00000, which measures the magnitude of the commonality. As a coefficient approaches 1.00000, the correlation between the two variables (questions) is stronger. Likewise, a coefficient that approaches - 1.00000 is indicative of a strong negative, or reverse correlation. For this report, any coefficient greater than 0.50000 or less than - 0.50000 was investigated for significance. It was found that eight positive and five negative correlations were significant. Positive correlations are located in Table 5-7a and the negative correlations are in Table 5-7b. Notations in the bottom right corner of each correlation box, such as Q1, Q2, Q3, etc..., refer to question 1, question 2, and question 3, respectively, of the questionnaire which is located in Appendix A-2 and A-3.

POSITIVE CORRELATIONS

CORRELATIONS		PEARSON CORRELATION COEFFICIENT
As number of the workers drawing journeyman wages increases Q4	The number of skilled carpenters employed increases Q5	0.67744
As number of the workers drawing journeyman wages increases Q4	The number of apprentices employed increases Q6	0.65565
As the number of respondents who are satisfied with the quality of their subcontracted work increases Q16	The number of respondents who feel that the subcontractor's skill level is adequate increases Q17	0.63333
As the length of employment for journeymen carpenters increases Q9a	The length of employment for apprentices increases Q9b	0.60849
As the number of projects per year increases	The number of apprentices employed increases Q6	0.60059
As journeymen carpenters' wages increase Q8a	Wages for apprentices increase Q8b	0.57985
As the number of respondents who would hire more carpenters to avoid paying overtime increases Q12	The number of respondents who feel the need for more skilled carpenters increases Q2	0.54935
As the number of respondents who found enough subcontractors to hire increases Q15	The number of respondents who feel that the subcontractor's skill level is adequate increases Q17	0.50000

Table 5-7a Positive Correlations.

NEGATIVE CORRELATIONS

CORRELATIONS		PEARSON CORRELATION COEFFICIENT
As the percentage commercial work increases	The percentage of other (mostly industrial) work decreases	- 0.78117
As the number of respondents who feel that the subcontractor's skill level is adequate increases Q17	The number of respondents who have paid overtime to their carpenters because of a shortage in the market decreases Q11	- 0.70711
As the wages for apprentices increase Q8b	The percentage of residential work decreases	- 0.65249
As the number of respondents who found enough carpenters to hire increases Q1	The number of respondents who experienced scheduling problems because of a shortage of carpenters decreases Q32	- 0.56992
As the number of respondents who would bid more jobs or increase the volume of their business if more skilled carpenters existed increases Q10	The number of respondents who felt there were enough carpenters to hire decreases Q1	- 0.51005

Table 5-7b Negative Correlations.

This statistical analysis, as it is divided into the several sections, has been formatted so that comparisons, conclusions, and summarizations may be easily developed. Appendix B contains the detailed regional analysis, reported in the chart form, and in the same order as in this chapter. The following chapter (6) contains a summary of the regional analysis and is compared to the statewide responses. Summaries and conclusions based on the collective data are located following the regional analysis summary (Chapter 7).

CHAPTER 6

ANALYSIS BY REGIONS

In this chapter, responses are categorized by regions so they may be easily compared to each other, along with the statewide responses that were presented in Chapter 5 (Refer Table 6-1). A more detailed analysis of regional responses is located in Appendix B.

The average annual volume of business of the respondents in the Central Region was $ 167.8 million, was substantially greater than the average of the other regions. However, the Central Region's median volume of $ 27.0 million, more accurately represents the region's overall status, as a few extremely high volume firms are in this area. The Northeast Region had the highest average number of projects (119, median of 20) carried per year, and an average annual volume of $ 23.4 million (median of $ 20.0 million). Interestingly, the Southeast and Southwest Regions had average annual volumes of less than $ 4.5 million, and an average of 56 and 67 projects per year, respectively, indicating that the respondent's individual project's are typically smaller than elsewhere in the state.

Union contractors surveyed in the Central and Southwest Regions reported no residential construction activity. The highest average percentage of residential construction was reported at 13.5 % in the Southeast Region. The bulk of construction of the respondents surveyed was commercial, as represented in the statewide average of 71.3 %. The Central Region had the largest percent of commercial construction, 78.6 %, while the Northeast Region had the least at 63.0 %. The

remaining type of construction was listed as 'other,' typically industrial, and the Southwest Region had the largest average share at 35.7 %, while the Southeast Region had only an average of 13.8 % 'other' construction.

The highest average hourly wage paid to journeymen carpenters can be found in the Northeast Region, where they receive $ 14.18. Journeymen carpenters only make an average of $ 12.02 per hour in the lowest paying, Southwest Region. Surprisingly, the highest and lowest average hourly wages paid to apprentices are found in the other regions. The high average of $ 10.00 is in the Central Region, and the lowest of $ 6.82 in the Southeast Region.

The average length of employment for both journeymen carpenters and apprentices is of short duration. This implies decreased job security and reduced chances for upward mobility with any particular employer. For journeymen carpenters, the longest average length of employment of forty months was in the Southeast Region, and the shortest of nine months was in the Central Region. The average length of employment for apprentices is even less. The Northeast Region had the longest average of twenty-four months, and the shortest average employment term for apprentices was only one month, in the Southwest Region.

The responding union contractors indicated a definite carpenter shortage. In the Southeast Region, 65.6 %, followed by a close 62.5 % in the Southwest Region, of the respondents cannot find enough carpenters to hire. The Northeast Region appears to

be experiencing the effects of a carpenter shortage the least, with only 20.0 % of the respondents having difficulties in finding carpenters to hire. In the Southwest and Southeast Regions, 85.7 % and 84.4% of the respondents, respectively, felt a need for more skilled carpenters in construction. Although the Northeast region had the lowest percentage, a majority of 60.0 % of the respondents also felt this need. The highest percentage of respondents that have had scheduling problems due to a carpenter shortage was 60.0 % in the Southeast Region, followed by 50.0 % for both the Southwest and Central Regions, while only 20.0 % of the respondents in the Northeast Region experienced this problem. In the southern portion of the state, respondents indicated that they would increase the volume of their work if an adequate supply of carpenters existed (62.5 % in the Southwest Region; 37.5 % in the Southeast Region). However, all of the respondents in both the Northeast and Central Regions claimed that they would not increase their volume. In analyzing the above data, it is apparent the carpenter shortage is more acute in the southern regions of the state.

In the Southeast Region, 43.8 % of the respondents reported to have paid overtime to carpenters because of a shortage, while in the Southwest Region, only 12.5 % reported the same. The highest percentage of respondents who would hire more carpenters to avoid paying overtime was 71.4 % in the Central Region, followed by 64.5 % in the Southeast, 37.5 % in the Southwest, and 25.0 % in the Northeast Region.

All of the respondents in the Central Region felt that carpenters need to undergo some classroom training. The smallest percentage of respondents who felt this way was 40.0 %, in the Northeast Region. Percentages for the southern regions on this topic were slightly higher than the statewide average of 80.0 %.

The highest percentage of respondents in favor of licensing carpenters to insure better skills was 40.0 %, in the Northeast Region. The Southwest Region respondents favored this idea the least, with only 12.5 % desiring licensing.

In the Northeast Region, 80.0 % of the respondents felt that illegal aliens are being hired by other construction firms in Florida. The Southwest Region had the lowest percentage, 37.5 %, of respondents with this opinion. In the Central Region, respondents were of the opinion that 18.3 % of the carpenters working in Florida are illegal aliens. The Southeast Region's respondents had the most conservative opinion of this percentage at 9.8 %.

The regional rankings of criteria determining promotions or increases in wages for carpenters varied little from the averaged state rankings. All of the regions, except the Northeast Region, ranked a carpenter's performance as the most important factor in determining promotion or increased wages. The Northeast Region ranked graduation from a training program as the most important criteria. It is interesting to note that only 40.0 % of Northeast Region's respondents felt that carpenters need to

undergo some classroom training, which was by far the lowest regional percentage on this issue.

The remaining questions in the survey, those concerning training programs and reasons for the shortage of carpenters, are all in the Likhert scale category. There is little, if any, variance in the ranking order of the specific regions from the statewide rankings, described in detail in Chapter 5. The ranking variances that do occur are mostly due to very small differences in individual regional averages. No notable varying regional trends can be established.

The analysis and comparison of regional responses is imperative in detecting differing regional trends. The collective analysis and conclusions are presented in the next chapter.

SUMMARY OF RESPONSES BY REGIONS (1)

ISSUE	STATE-WIDE	CENTRAL REGION	NE REGION	SE REGION	SW REGION
Average Annual Volume of Business (in millions) Median Value (in millions)	$24.1 $3.25	$167.8 $27.0	$23.4 $20.0	$4.15 $3.00	$4.44 $2.00
Number of Projects carried per year	65	65	119	56	67
Avg. Percent of Residential Construction	8.6%	0.0%	3.0%	13.5%	0.0%
Avg. Percent of Commercial Construction	71.3%	78.6%	63.0%	72.7%	64.3%
Avg. Percent of Other Construction	20.1%	21.4%	34.0%	13.8%	35.7%
Avg. No. of Journeymen Carpenters Employed	21	33	25	16	28
Avg. No. of Journeymen that are Skilled	12	27	23	7	17
Avg. No. of Apprentices Employed	3	5	5	2	1
Avg. Journeyman Carpenter Hourly Wage	$13.15	$13.44	$14.18	$13.17	$12.02
Avg. Apprentice Hourly Wage	$9.30	$10.00	$9.17	$6.82	$8.76
Avg. Length of Journeyman Employment (Months)	32	9	31	40	26
Avg. Length of Apprentice Employment (Months)	16	9	24	17	1
Respondents Without Enough Skilled Carpenters to Hire	57.7%	42.9%	20.0%	65.6%	62.5%
Contractors Feeling Need for More Skilled Carpenters in Construction	80.0%	66.7%	60.0%	84.4%	85.7%

Table 6-1 Summary of Responses by Regions - page 1

SUMMARY OF RESPONSES BY REGIONS (2)

ISSUE	STATE-WIDE	CENTRAL REGION	NE REGION	SE REGION	SW REGION
Respondents who have had Scheduling Problems due to a Carpenter Shortage	53.2%	50.0%	20.0%	60.0%	50.0%
Respondents who would Increase Volume of Work if Adequate Supply of Carpenters Existed	32.7%	0.0%	0.0%	37.5%	62.5%
Respondents who have Paid Overtime due to Shortage of Skilled Carpenters	36.5%	42.9%	20.0%	43.8%	12.5%
Percent of Hours worked by Carpenters that's Overtime	6.0%	6.0%	3.5%	6.4%	6.0%
Respondents who would Hire More Skilled Carpenters to Avoid Paying Overtime	58.0%	71.4%	25.0%	64.5%	37.5%
Ave. Percent of Sub-contracted Carpentry Work	23.9%	25.0%	20.0%	24.4%	0.0%
Respondents who have Enough Firms to Sub-contract Carpentry Work	38.5%	50.0%	0.0%	40.0%	0.0%
Respondents Satisfied with Subcontracted Work Quality	46.7%	0.0%	100.0%	50.0%	0.0%
Respondents who feel Skill of Subcontractor's Carpenters is not adequate	50.0%	100.0%	0.0%	44.4%	100.0%
Percent of Subcontrac-tor's Carpenters that are Skilled	33.7%	30.0%	25.0%	38.4%	26.7%
Respondents who think Carpenters need some Classroom Training	80.0%	100.0%	40.0%	81.3%	85.7%

Table 6-1 Continued - page 2

SUMMARY OF RESPONSES BY REGIONS (3)

ISSUE	STATE-WIDE	CENTRAL REGION	NE REGION	SE REGION	SW REGION
Respondents in favor of Licensing Carpenters to Insure Better Skills	26.9%	28.6%	40.0%	28.1%	12.5%
Respondents who feel Illegal Aliens are being Hired by Other Firms	50.0%	42.9%	80.0%	50.0%	37.5%
Opinion of Percentage of Illegal Alien Carpenters in Florida	11.0%	18.3%	10.0%	9.8%	10.0%
Criteria determining Promotion or Increase in Wages for Carpenters. Scale is: 4.Always; 3.Most of the time; 2.Sometimes; 1.Never					
a. Performance	3.45	3.14	2.33	3.27	3.80
b. Experience	3.02	2.57	2.00	2.11	3.00
c. Graduation from training program	2.73	2.57	3.33	2.05	3.17
d. Market wage rate	2.28	2.67	1.00	2.90	2.50
e. Seniority	1.93	1.43	1.00	1.79	1.79
Opinion that Future Carpenter will preform Broader variety of Tasks. Scale is: 4.Much broader; 3.Broader; 2.No change; 1.Narrower					
a. Framing carpenters	2.61	2.29	2.00	2.75	2.83
b. Form carpenters	2.57	2.57	2.00	2.68	2.50
c. Finish carpenters	2.53	2.57	2.20	2.57	2.60

Table 6-1 Continued - page 3

SUMMARY OF RESPONSES BY REGIONS (4)

ISSUE	STATE-WIDE	CENTRAL REGION	NE REGION	SE REGION	SW REGION
Opinion of what Shortage of Carpenters is due to. Scale is: 4.Very important reason; 3.Important reason 2.Could be a reason; 1.Not a reason at all					
a. General decline in craftsmanship	3.05	2.71	2.75	3.04	4.00
b. More emphasis on cutting cost than quality control	2.79	3.00	2.79	2.50	3.50
c. Low profile of labor unions	2.74	2.71	3.00	2.63	3.20
d. Construction boom	2.68	2.57	3.25	2.65	2.33
e. Because of greater emphasis on factory built components	2.30	2.29	2.00	2.31	2.67
f. Low wage rates	2.17	2.86	2.50	1.85	2.75
g. Part time carpenters	1.80	1.86	1.50	1.80	2.00
Ranking of contributions of training programs in Supplying Skilled Carpenters. Scale is: 4.Large extent; 3.Some extent; 2.Small extent; 1.Negligible					
a. Union apprenticeship	3.29	3.60	2.33	3.26	4.00
b. On-the-job training	2.93	2.80	3.00	2.85	3.67
c. Vocational training	2.03	2.40	3.00	1.91	2.00
d. Open shop apprentice.	1.69	1.50	1.00	1.74	2.00
e. Community college	1.37	1.20	2.00	1.42	1.00

Table 6-1 Continued - page 4

SUMMARY OF RESPONSES BY REGIONS (5)

ISSUE	STATE-WIDE	CENTRAL REGION	NE REGION	SE REGION	SW REGION
Ranking of training programs in Producing the Best Skilled Carpenters on 1-4 scale. 4.Best; 1.Worst					
a. Union apprenticeship	3.25	3.14	3.20	3.27	3.33
b. On-the-job training	2.88	2.83	2.50	2.90	3.33
c. Vocational training	2.13	1.80	1.67	2.05	2.50
d. Open shop apprentice.	2.00	2.60	1.33	2.11	2.33
e. Community college	1.79	1.75	1.33	1.79	2.50
Respondents communication level with training programs. Scale is: 4.Very close; 3.Close; 2.Remote; 1. Very remote					
a. Union apprenticeship	2.78	2.43	3.20	2.80	2.75
b. On-the-job training	2.46	2.43	2.00	2.42	3.25
c. Vocational training	1.30	1.00	1.25	1.44	1.00
d. Open shop apprentice.	1.20	1.00	1.25	1.28	1.00
e. Community college	1.13	1.00	1.00	1.16	1.25
Ranking of Best for Industry / Training Program Linkage on scale of 1 to 4; 4 being most important					
a. Formal meeting	3.14	3.00	2.67	3.17	3.67
b. Attending educational functions	2.84	2.67	2.67	2.95	2.67
c. Written contact	2.74	2.33	2.75	2.65	3.75
d. Sitting on an advisory committee	2.62	2.17	3.00	2.73	2.33

Table 6-1 Continued - page 5

CHAPTER 7

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

The carpentry survey of union contractors revealed several notable findings , providing insight into the shortage of skilled carpenters in Florida. Analysis of these key issues will provide methods of solutions to avoid a serious carpenter shortage in coming years.

The results of this study clearly indicate a shortage of skilled carpenters, as a majority of 57.7 % of the union contractors felt that there were not enough carpenters to hire. An even greater majority of 80.0 % of the respondents felt a need for more skilled carpenters in construction. More than half of the union contractors have experienced scheduling problems due to a shortage of carpenters. Almost one-third of the respondents claimed that they would increase the volume of their business or bid more jobs if an adequate supply of skilled carpenters existed. The union contractors were also of the opinion that only fifty-seven percent of their employed carpenters drawing journeymen wages could be considered 'skilled.' Over one-third of the respondents paid overtime wages to their carpenters in the past year because of the shortage of skilled carpenters, and almost two-thirds of the respondents expressed the desire to hire more skilled carpenters to avoid paying overtime.

The shortage of carpenters also extends into subcontracted carpentry work. Of the firms that subcontract part of their carpentry, 61.5 % cannot find enough subcontractors to hire. The

respondents felt that only one-third of subcontractor's carpenters are skilled. Half of the respondents felt that the skill level of the subcontractor's carpenters is not adequate. The present shortage of carpenters is very serious. When compounded with Florida's projected growth rates, if the situation is not corrected soon, it will only get more severe.

The union contractors responding to the survey had an average annual volume of business of $ 24.08 million, and a median value of $ 3.25 million. The average number of projects carried per year was sixty-five, and a median value of twenty projects per year. The variance between the average and median values is the result of a few high volume firms responding to the questionnaire, thus raising the average value. Out of all of the union contractors responding to the survey, 15.4 % operate double-breasted firms. The union contractors reported that an average of 71.3 % of their business was commercial construction. Residential construction averaged 8.6 % of the respondents' business, and the remaining balance of 20.1 % was other construction, typically industrial. On the average, union contractors employ twenty-one journeymen carpenters and three apprentices or carpenters-in-training.

The duration of a carpenter's or apprentice's length of employment with any particular employer is typically very short. This results in diminished job security and decreased chances of promotion within a firm. The respondents indicated that journeymen carpenters are employed for an average of only thirty-

two months. The length of employment for apprentices or carpenters-in-training is less, averaging sixteen months.

Carpenter's wages in Florida are rather low. The union contractors reported that journeymen carpenters average $ 13.15 per hour, and the apprentices are paid an average of $ 9.30 per hour. Low wages are one factor which can be attributed as a reason for the shortage of carpenters in Florida. Carpenters working in some areas the nation earn more than twice as much as Florida carpenters.[62] Low wage rates also hinder potential new entrants from choosing carpentry as a career, which is another important factor credited to the carpenter shortage, as indicated by several of the respondents.

Not surprisingly, due to the fact that all of the respondents have signed agreements with the Union, the contractors use labor unions more than any other source when searching for carpenters to hire. Union apprenticeship programs, contacts in the construction industry, and labor agents are also frequently used to search for carpenters. None of the respondents have ever searched for carpenters from open shop training programs.

According to the respondents, performance and experience, length of time working in carpentry, are the most important factors in determining promotions or raises for carpenters.

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[62] Rob McManamy, "Inflation Seeps Into Costs," Engineering News Record, September 17, 1987, pp.58-61.

Seniority, length of time with a particular firm, has the least influence in promotional criteria.

The respondents rated union apprenticeship programs, followed by on-the-job training, as the most important training programs in both producing and supplying skilled carpenters to the construction industry. Open shop apprenticeship programs, followed by community college training programs, were rated as making the fewest contributions to the industry in these areas. Additionally, eighty percent of the union contractors felt that carpenters working in commercial construction need to undergo some classroom training.

On the subject of the communications link between employers in the construction industry and formal training programs, The Business Roundtable found that:

> Some major problems impede an increase in construction-trades training via vocational education:
>
> - Lack of continuing communication between the construction industry and educators.
>
> - Building trades unions and some large trade associations emphatically prefer the traditional craft apprentice programs.[63]

Additionally, The Business Roundtable noted that:

> The individual building trade and craft unions have exerted considerable influence on construction vocational training in public schools. This influence

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63 "Construction Training through Vocational Education," The Business Roundtable, A Construction Industry Cost Effectiveness Project Report D-3, August, 1982, p. 1.

> has consisted primarily of technical advice about curriculum content, facilities, equipment, and state-of-the-art skills used in the trade.
>
> Entrance into the construction industry's unionized work force has been both restrictive and unrestrictive in a bizarre way. Unions have demanded completion of long-term apprentice programs, yet at the same time allow individuals with little or no formal training to become union members classified as journeymen. Unions have promoted an average four-year apprentice program, resisting competency-based training and acceptance of credit-for-training received from other sources. However, less than a third of all construction workers have learned their trades through apprenticeship.
>
> Up to now, the building trades unions have not viewed public vocational education as a suitable way to help meet the projected shortage of craftworkers. Rarely do we find a vocational education graduate being accepted for advanced standing in a union-sponsored apprentice program. Considering the possible cost effectiveness of vocational education for construction, the less-than-aggressive pursuit of the public education approach adds credence to claims that there has been an artificial control of the labor supply.[64]

The findings from the survey reveal that the union contractors if Florida share this minimal communication with the training programs. The only notable communication level between the respondents and training programs was with the union apprenticeship program and on-the-job training, however, the data indicates that less than close communications exist with these programs. The respondents also believe that formal meetings between the employers and the training programs are the best method for establishing an industry / training program linkage.

More than half of the respondents (57.7 %) were against

---

64 "Construction Training through Vocational Education," p. 6.

licensing for carpenters to insure better skills and standards, although 26.9 % of the union contractors were in favor of licensing. Of interesting note here is that after a union carpenter completes the union's four year apprenticeship program, the carpenter is then classified as a journeyman. For many union contractors, this title is a form of guarantee from the union that the carpenter meets or exceeds expected standards, and is, in a way, viewed as a type of license. For this reason, many of the contractors felt that additional licensing was not required.

One-half of the respondents felt that illegal aliens were being hired by other construction firms in Florida. Furthermore, the union contractors are of the opinion that an average of eleven percent of all carpenters working in Florida are illegal aliens.

A shortage of skilled carpenters definitely exists in Florida, according to union contractors. Carpenter wages in Florida are rather low, which hinders the attraction of young people to the trade as a career. Solutions to the problem must be implemented soon, before the seriousness of the shortage becomes irreversible.

RECOMMENDATIONS

The shortage of skilled carpenters currently a serious problem in the construction industry in Florida. Based on the results of this study, the following recommendations are made to alleviate the present shortage, and prevent it from intensifying.

1. The interaction between employer and training programs must be expanded. It is the training program's role to supply skilled carpenters for the construction industry, therefore employers in the industry need to support and be actively involved with the training programs so they may work more effectively for the construction industry. This can be achieved by the employer being actively involved with his apprentices' training process, and increased communication with the training programs expressing insight of what the industry expects out of skilled carpenters.
2. The study reveals that communication levels between union contractors and training programs are strained. Respondents felt that formal meetings between the two groups is the best method for establishing an industry / training program linkage. Effective communication between these groups is essential to the success of training and supplying skilled carpenters to meet the industry's needs. Union contractors need to comply with the labor agreements that have been signed with the Union, which specifies that both management

(union contractors) and the union apprenticeship programs are jointly responsible for training new craftsmen. The opportunity for union contractors to have input into the apprenticeship programs already exists, but is not fully utilized. This is necessary so that ideas may be exchanged and implemented into the training programs in order to produce skilled carpenters that meet the needs of the industry.

3. A majority of eighty percent of the respondents felt that carpenters need to undergo some classroom training. The carpenters need some incentive for participation in classroom instruction. Incentives must come from the employers, and can be guarantees of higher wages, increased responsibility, and/or expanded job description, upon completion of the additional training. Classroom hours must be flexible to allow carpenters to attend classes around their work schedule.

4. Respondents indicated that on-the-job training in essential in the development of a skilled carpenter. On-the-job training, which is the responsibility of the employer, should be systematically structured, provide supervision and evaluation, particularly in the area of job rotation to ensure training in all carpentry tasks.

5. Wages and job security must be increased in the carpentry trade in order to recruit new entrants into the field. Without an increase in wages, it will be difficult to

guarantee a high standard of skills level in the carpentry trade. Employers must be willing to pay more for carpentry work, if they expect it to meet higher standards of quality.

6. A joint committee, consisting of representatives from the training programs and of carpentry employers, needs to actively recruit young people to the carpentry trade. Potential trainees need to be educated about the positive aspects of choosing the carpentry trade as a career. Union contractors need to work in conjunction with union apprenticeship programs, as well as other training programs, to propagate the carpentry trade as a respectable and secure profession. Presentations should be made at high schools, targeting students whom are deciding career paths.

CHAPTER 8

RECOMMENDATIONS

FOR FUTURE RESEARCH

Throughout the course of research for this study, several topics were unveiled which could be expanded on for future research projects. Among these are:

1. Investigation of the advantages and disadvantages of potential carpenter specialization, as well as specialization of other building trades.
2. An analysis of on-the-job training procedures, with emphasis on desired format and job rotation, for the union contractor's maximum cost effectiveness.
3. Expand the present study to include potential labor shortages of other building trades, including their respective unions, compare and contrast the trends uncovered in the Carpenters Study, and develop conclusions and recommendations.
4. Investigate the new immigration policy and its effects on the labor supply in union construction, particularly in Florida because of its illegal immigration history.
5. Explore the benefits and drawbacks of carpenter licensing in the construction industry, particularly with respect to union contractors.
6. Elicit opinions of the actual union carpenters on the shortage of skilled carpenters and other topics that were raised in this study, to completely understand the entire situation.

7. Investigate the ability of the United Brotherhood of Carpenters and Joiners of America to relocate its members to areas of demand, and determine if this could partially or temporarily offset the shortage of skilled carpenters.
8. Analyze the skills level and competency of carpenters that have completed the union's apprenticeship program, and compare / contrast them with the skills level of graduates of other training and apprenticeship programs.

BIBLIOGRAPHY

Brooks, Thomas R. The Road to Dignity: A Century of Conflict. New York: Atheneum, 1981.

Construction Training Through Vocational Education. Report D-3, The Business Roundtable. New York, 1982.

Crouch, Gregory. "Orlando Slows Down to Catch its Breath." Florida Trend Yearbook, 1987. Vol. 29 No.13, pp. 97-103.

"For the Rest of the Eighties." Florida Construction Industry Magazine, 41 No.6 (1986), 18-22.

Foster, Howard G. Manpower in Homebuilding: A Preliminary Analysis. Philadelphia: University of Pennsylvania Press, 1974.

Galenson, Walter. The United Brotherhood of Carpenters: The First Hundred Years. Cambridge: Harvard University Press, 1983.

Isaac, Rani. "Some Trades Cooling to Give-backs." Engineering News Record, 18 September 1986, pp. 51-61.

Jones, Jimmy E., Member General Executive Board, Fourth District, United Brotherhood of Carpenters and Joiners of America, several telephone conversations, 1987.

Koenig, John. "The Danger Ahead." Florida Trend Yearbook 1987. Vol. 29 No.13, pp. 44-50.

McManamy, Rob. "Inflation Seeps Into Costs." Engineering News Record, 17 September 1987, pp. 51-64.

"Meeting the Future Need for Construction Labor, 1990-1995." Construction Labor Research Council, Robert M. Gasperow, Executive Director. Washington, D.C., October 1985.

Placa, Judith. Secretary for E. Jimmy Jones, Member General Executive Board, Fourth District, United Brotherhood of Carpenters and Joiners of America, telephone conversation, November 18, 1987.

Raddock, Maxwell C. Portrait of an American Labor Leader: William L. Hutcheson. New York: American Institute of Social Sciences, 1955.

Romer, Sheli, Ali Markus, and Brisbane H. Brown, Jr. et al. An Analysis of Carpentry Training Programs In Florida: Technical Publication No. 47. Gainesville: School of Building Construction, University of Florida, 1987.

Selz, Michael. "Jacksonville Shows Signs of Oversupply." Florida Trend Yearbook, 1987. Vol. 29 No.13, pp. 113-119.

Setzer, Steven W. "Labor Shortages Grip Several Cities." Engineering News Record, 25 September 1986, pp. 10-11.

Shoemyen, Anne E., and Susan S. Floyd, eds. 1986 Florida Statistical Abstract. Gainesville: The University Presses of Florida, 1986.

South Florida Carpenter's V.O.C. Newsletter. Vol. 1 No.4, May 1987.

State of Florida Department of Labor and Employment Security, Bureau of Apprenticeship. Telephone conversation with secretary, December 11, 1987.

"State Overview." Florida Trend Yearbook, 1987. Vol. 29 No.13, p. 53.

Taylor, John. "Development Finds its Way Up the Coast." Florida Trend Yearbook, 1987. Vol. 29 No.13, pp. 65-71.

Taylor, John. "Tampa Bay Takes Big-League Strides." Florida Trend Yearbook, 1987. Vol. 29 No.13, pp. 81-87.

Tschetter, John, and John Lukasiewicz. "Employment Trends in the Building Trades." U.S. Department of Labor Occupational Outlook Quarterly. 27 No.1 (1983), pp. 2-9.

United Brotherhood of Carpenters and Joiners of America, AFL-CIO. This is the UBC. Washington D.C., 1981.

U.S. Department of Commerce, Malcolm Baldrige, Secretary. 1987 U.S. Industrial Outlook. January 1987.

Walsh, Matt. "Dade and Broward Open New Frontiers." Florida Trend Yearbook, 1987. Vol. 29 No.13, pp. 57-63.

Welch, Bonnie. "A New Attitude Embraces Growth." Florida Trend Yearbook, 1987. Vol. 29 No.13, pp. 73-79.

Willson, Elizabeth. "Lakeland Makes the Most of its Location." Florida Trend Yearbook, 1987. Vol. 29 No.13, pp. 89-95.

Willson, Elizabeth. "Much More than a Pass Through Place." Florida Trend Yearbook, 1987. Vol. 29 No.13, pp. 105-111.

Wittwer, Charlotte. "A Push for Industry Begins to Pay Off." Florida Trend Yearbook, 1987. Vol. 29 No.13, pp. 137-143.

Wittwer, Charlotte. "Trying to Diversify A Two-Track Economy." Florida Trend Yearbook, 1987. Vol. 29 No.13, pp. 129-135.

APPENDICES

APPENDIX A

QUESTIONNAIRE PACKAGE

QUESTIONNAIRE

Name of firm _____

Contact person _____ Position _____ Phone _____

Annual Volume of Business in Dollars _____

Type of Construction Undertaken: Residential _____ % Commercial _____ % Others: _____ %

Type of Operation: Open Shop _____ Union _____ Both _____

Number of projects carried per year _____

Answer the following as yes, no, or cannot say.

	Yes	No	Cannot Say
1. Are there enough skilled carpenters for you to hire?	_____	_____	_____
2. Do you feel there is a need for more skilled carpenters in commercial construction?	_____	_____	_____
3. Do you think that carpenters working in commercial construction need to undergo some classroom training program?	_____	_____	_____

4. How many workers do you have on your payroll drawing journeyman carpenter wages? _____
5. Of these workers earning journeyman carpenter wages, how many are skilled capenters? _____
6. How many apprentices or carpenters-in-training do you have on your payroll? _____

7. In your opinion, which of the following tasks must a "skilled carpenter" be able to perform proficiently?
Use the following scale: 4. Absolutely necessary 3. Necessary 2. Desirable 1. Unnecessary

a. Read blueprints	4	3	2	1
b. Conduct site preparation and layouts	4	3	2	1
c. Preplan forthcoming activities	4	3	2	1
d. Construction forms (footing, walls, edge, curb)	4	3	2	1
e. Construction forms (piers, columns, beams, slabs, stairs, bridge, deck)	4	3	2	1
f. Frame floor and sills	4	3	2	1
g. Frame partitions	4	3	2	1
h. Frame roofs	4	3	2	1
i. Build trusses	4	3	2	1
j. Install structural timber	4	3	2	1
k. Install decking and sheathing	4	3	2	1
l. Install exterior wall covering and trim	4	3	2	1
m. Apply weather stripping and caulking	4	3	2	1
n. Install door, window frame and units	4	3	2	1
o. Install drywall material	4	3	2	1
p. Construct interior stairs	4	3	2	1
q. Install cabinets, fixtures and shelving	4	3	2	1
r. Install paneling, furring, soffit ceiling	4	3	2	1
s. Install insulation and sound control material	4	3	2	1
t. Issue instructions to crew members	4	3	2	1
u. Other _____	4	3	2	1

8. What is the average hourly wage paid by your firm to the following?

Journeyman carpenter $_____ Apprentice (carpenter-in-training) $_____

9. How long, on the average, do the carpenters stay in your employment? (answer in months)

Journeyman carpenter _____ Apprentice (carpenter-in-training) _____

	yes	no	cannot say
10. Would you bid more jobs or increase the volume of your business if there was an adequate supply of skilled carpenters in the industry?	_____	_____	_____
11. Have you ever, in the past year, paid overtime to skilled carpenters because of any shortage in the market?	_____	_____	_____
12. Would you hire more skilled carpenters to avoid paying overtime?	_____	_____	_____

13. What percentage of hours worked by carpenters is overtime? Please estimate. _____ %

Answer questions number 14 to 18 if you sub-contract any of the carpentry work, otherwise skip to question 19.

14. What percentage of carpentry work do you subcontract? _____ %

	yes	no	cannot say
15. If you sub-contract a majority of your carpentry work, are there enough firms available to do your work?	_____	_____	_____
16. Are you satisfied with the quality of the work done by the firms to whom you sub-contract carpentry work?	_____	_____	_____
17. In your opinion, is the skill of the carpenters who work on the sub-contracted work adequate?	_____	_____	_____

18. In your opinion, what percentage of the sub-contractor's carpenters are skilled carpenters? _____ %

19. Where do you search for carpenters?
Use the following scale: 4. Always 3. Most of the time 2. Sometimes 1. Never

a. Labor agents	4	3	2	1
b. Labor unions	4	3	2	1
c. Vocational training centers	4	3	2	1
d. Union apprenticeship programs	4	3	2	1
e. Open-shop apprenticeship programs	4	3	2	1
f. Advertisements in the papers	4	3	2	1
g. Contacts in the construction industry	4	3	2	1
h. Other construction jobs	4	3	2	1
i. Company on-the-job training	4	3	2	1
j. Community college training programs	4	3	2	1

20. Are the following training programs making any substantial contributions in supplying skilled carpenters to the residential construction industry?
Use the following scale: 4. To a large extent 3. To some extent 2. To a small extent 1. Negligible

a. Vocational training centers	4	3	2	1
b. Union apprenticeship programs	4	3	2	1
c. Open shop apprenticeship programs	4	3	2	1
d. Community College training	4	3	2	1
e. On-the-job training	4	3	2	1

21. Will the future carpenter be performing a broader variety of tasks? Use the following rating system:

4 = much broader 3 = broader 2 = no change 1 = narrower

a. framing carpenters	4	3	2	1
b. form carpenters	4	3	2	1
c. finish carpenters	4	3	2	1
d. other _____	4	3	2	1

22. In your opinion, are the following training programs making any substantial contributions in producing the best carpenters for your needs?
(rank 1 - 4; 4 being the best and 1 being the worst)

a. Vocational training centers	4	3	2	1
b. Union apprenticeship programs	4	3	2	1
c. Open shop apprenticeship programs	4	3	2	1
d. Community college training	4	3	2	1
e. On-the-job training	4	3	2	1

23. What criteria determines promotion or an increase in wages of a carpenter in your company?
Use the following scale: 4. Always 3. Most of the time 2. Sometimes 1. Never

a. Graduation from training program	4	3	2	1
b. Performance	4	3	2	1
c. Experience	4	3	2	1
d. Seniority	4	3	2	1
e. Market wage rate	4	3	2	1

	yes	no	cannot say
24. In your opinion, should the carpenter be required to have a license to insure better skills and standards?	_____	_____	_____
25. From your experience, do you believe that illegal aliens are being hired by other construction firms?	_____	_____	_____

26. In your opinion, what percentage of the carpenters in Florida are illegal aliens? _____ %

27. In your view, is the shortage of skilled carpenters due to:
Use the following scale:
4. very important reason 3. important reason 2. could be the reason 1. not a reason at all

a. Lack of training programs	4	3	2	1
b. Low wage rates	4	3	2	1
c. Part time carpenters	4	3	2	1
d. More emphasis on cutting cost than quality control	4	3	2	1
e. Construction boom	4	3	2	1
g. Low profile of labor unions	4	3	2	1
h. General decline in craftsmanship	4	3	2	1
i. Because there is greater emphasis on factory built components (trusses etc.) there is a decreased demand in the skills level of on site carpenters.	4	3	2	1
j. Others _____	4	3	2	1

28. What would you suggest to help solve the shortage of skilled carpenters?

_____

_____

_____

29. Rank (1, 2, 3, 4 ; 4 being the most important) the following as the best method of establishing an Industry/Training program linkage.

a. Formal meeting of the two groups	4	3	2	1
b. Sitting on an advisory committee	4	3	2	1
c. Attending educational functions	4	3	2	1
d. Written contact	4	3	2	1
e. Others (please specify) _____	4	3	2	1

30. In your opinion, what one factor could provide more effective involvement with training programs for a closer working relationship?

_____

_____

_____

31. What level of communications do you have with the following training programs?
Use the following scale: 4. very close 3. close 2. remote 1. very remote

a. Vocational training centers	4	3	2	1
b. Union apprenticeship programs	4	3	2	1
c. Open shop apprenticeship programs	4	3	2	1
d. Community college training	4	3	2	1
e. On-the-job training	4	3	2	1

32. Has a shortage of carpenters ever directly caused scheduling problems?
Yes _____ No _____

Questionnaire, side two

United Brotherhood of Carpenters and Joiners of America

Office
101 CONSTITUTION AVE., N. W.
WASHINGTON, D. C. 20001

E. JIMMY JONES
MEMBER GENERAL EXECUTIVE BOARD
FOURTH DISTRICT

DISTRICT OFFICE
AMERICAN BANK BUILDING
16300 N.E. 19TH AVE., SUITE 220
NORTH MIAMI BEACH, FL 33162
305/940-8818-48

June 9, 1987

Dear Union Contractor:

Enclosed you will find a letter dated June 4, 1987 from Brisbane H. Brown, Professor and Director of the School of Building Construction at the University of Florida in Gainsville, Florida 32611. Professor Brown requests that you fill out the enclosed Questionnaire.

Several days ago it was brought to my attention that he was not getting enough responses from the Union Contractors to complete his study. I sent one of my Representatives to meet with the Professor and to report back to me his findings. He was received cordially and furnished with the Questionnaire and envelopes for your reply.

I urge all Union Contractors to complete the Questionnaire and send it back in the enclosed addressed envelope.

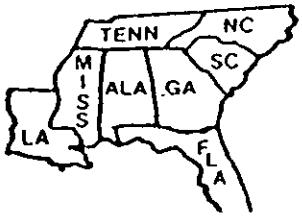
Thank you for your cooperation.

Fraternally yours,

E. Jimmy Jones

E. Jimmy Jones,
4th District Board Member

EJJ/jp
Enclosures



Cover Letter, initial mailing

SCHOOL OF BUILDING CONSTRUCTION
UNIVERSITY OF FLORIDA
GAINESVILLE, 32611

PHONE 904 392-5965
904 392-0202
SUNCOM 622-0202

June 4, 1987

Dear Union Contractor:

In cooperation with the United Brotherhood of Carpenters and Joiners of America and the Building Construction Industry Advisory Committee, the School of Building Construction at the University of Florida is conducting a study to determine whether skilled carpenters are being trained in sufficient numbers to fulfill your needs. We also want to find out what hiring methods are most effective in obtaining skilled carpenters.

Your cooperation will be of great benefit to us as well as the construction industry. Please take a few minutes of your valuable time to fill out the attached questionnaire and return it in the enclosed self addressed stamped envelope. If you have any questions concerning this study or the questionnaire please contact Ali M. Markus at (904) 392-6755.

Thank you for your consideration.

Sincerely,

Brisbane H. Brown, Jr.
Professor and Director

BHB:bh

Cover Letter, initial mailing

SCHOOL OF BUILDING CONSTRUCTION
UNIVERSITY OF FLORIDA
GAINESVILLE, 32611

PHONE 904 392-5965
904 392-0202
SUNCOM 622-0202

September 9, 1987

Dear Union Contractor:

Several weeks ago you received a questionnaire from the School of Building Construction at the University of Florida, in conjunction with the United Brotherhood of Carpenters and Joiners of America and the Building Construction Industry Advisory Committee, concerning a study to determine whether skilled carpenters are being trained in sufficient numbers to fulfill your needs. Unfortunately, the response rate has been rather low. We urgently need responses from Union Contractors in order to complete our study.

Your cooperation will be of great benefit to us as well as the construction industry. Please take a few minutes of your valuable time to fill out the attached questionnaire and return it as soon as possible in the enclosed self addressed stamped envelope. If you have any questions concerning this study or the questionnaire please contact Ali M. Markus at (904) 392-6755.

Thank you for your consideration.

Sincerely,

Brisbane H. Brown, Jr.
Professor

BHB:clm

Cover Letter, follow-up mailing

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School of Building Construction
FAC 101
University of Florida
Gainesville, FL 32611

Self Addressed Envelope

APPENDIX B

TABLES OF RESPONSES BY REGIONS

B-1

CENTRAL REGION

RESPONSES BY REGION

REGION	NUMBER OF RESPONDENTS	PERCENT
Central	7	13.5
Northeast	5	9.6
Northwest	0	0.0
Southeast	32	61.5
Southwest	8	15.4
Total	52	100.0

Table B-1.1 Responses by Region.

TYPE OF OPERATION

TYPE OF OPERATION	CENTRAL REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Open Shop	0	0.0	0	0.0
Both (Double-Breasted)	1	14.3	8	15.4
Union	6	85.7	44	84.6
Total Response	7	100.0	52	100.0
No Response to this Question	0	0.0	0	0.0

Table B-1.2 Type of Operation.

TYPE OF CONSTRUCTION UNDERTAKEN

TYPE OF CONSTRUCTION	CENTRAL REGION	STATEWIDE
	AVERAGE PERCENT	AVERAGE PERCENT
Commercial	78.6	71.3
Other	21.4	20.1
Residential	0.0	8.6

Table B-1.3 Type of Construction.
(in percentage)

AVERAGE ANNUAL VOLUME OF BUSINESS FOR UNION CONTRACTORS SURVEYED

BACKGROUND INFORMATION	CENTRAL REGION		STATEWIDE	
	AVERAGE	MEDIAN	AVERAGE	MEDIAN
Annual Volume of Business (in millions)	$ 167.8	$ 27.0	$ 24.08	$ 3.25
Number of Projects Carried per Year	65	20	65	20

Table B-1.4 Average Volume of Business.

SKILL LEVEL OF CARPENTERS

RESPONSE	CENTRAL REGION			STATEWIDE
	AVERAGE	MINIMUM	MAXIMUM	AVERAGE
Number of Journeymen Carpenters on the payroll	33	10	70	21
Number of Journeymen Carpenters that are skilled	27	6	50	12
Number of Apprentices or Carpenters-in-training on the payroll	5	0	20	3

Note : Figures have been rounded.

Table B-1.5 Number of Carpenters in Employment. (By Skill Level)

WHAT IS THE AVERAGE HOURLY WAGE PAID BY YOUR FIRM TO THE FOLLOWING ?

1. Journeyman Carpenter
2. Apprentice (Carpenter-in-training)

CARPENTER	CENTRAL REGION			STATEWIDE
	AVERAGE	MINIMUM	MAXIMUM	AVERAGE
Journeyman Carpenter	$ 13.44	$ 11.47	$ 16.00	$ 13.15
Apprentice (Carpenter-in-training)	$ 10.00	$ 8.00	$ 13.00	$ 9.30

Table B-1.6 Hourly Wages (in dollars, excluding fringe benefits)

HOW LONG, ON THE AVERAGE, DO THE CARPENTERS STAY IN YOUR EMPLOYMENT ?

CARPENTER	CENTRAL REGION			STATEWIDE
	AVERAGE	MINIMUM	MAXIMUM	AVERAGE
Journeyman Carpenter	9	2	24	32
Apprentice Carpenter-in-training	9	1	24	16

Note : Figures have been rounded.

Table B-1.7 Average Length of Employment. (in months)

WHERE DO YOU SEARCH FOR CARPENTERS ?

Use the following scale:

4. Always
3. Most of the time
2. Sometimes
1. Never

HIRING PRACTICE	CENTRAL REGION AVERAGE	STATEWIDE AVERAGE
Labor Unions	3.71	3.47
Union apprenticeship programs	2.33	2.60
Contacts in the construction industry	2.00	2.30
Labor agents	1.67	2.03
Advertisements in the papers	1.50	1.34
Other construction jobs	1.33	1.84
Company on-the-job training	1.17	1.54
Vocational training centers	1.00	1.12
Community college training programs	1.00	1.12
Open-shop apprenticeship programs	1.00	1.00

Table B-1.8 Hiring Practice.

WHAT CRITERIA DETERMINES PROMOTION OR AN INCREASE IN WAGES OF A CARPENTER IN YOUR COMPANY ?

Use the following scale :

4. Always
3. Most of the time
2. Sometimes
1. Never

PROMOTION CRITERIA	CENTRAL REGION AVERAGE	STATEWIDE AVERAGE
Performance	3.14	3.45
Market wage rate	2.67	2.28
Graduation from training program	2.57	2.73
Experience	2.57	3.02
Seniority	1.43	1.93

Table B-1.9 Promotion Criteria.

ARE THERE ENOUGH SKILLED CARPENTERS FOR YOU TO HIRE ?

RESPONSE	CENTRAL REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	4	57.1	21	40.4
No	3	42.9	30	57.7
Cannot Say	0	0.0	1	1.9
No Response to this Question	0	0.0	0	0.0

Table B-1.10 Availability of Skilled Carpenters.

DO YOU FEEL THERE IS A NEED FOR MORE SKILLED CARPENTERS IN COMMERCIAL CONSTRUCTION ?

RESPONSE	CENTRAL REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	4	66.7	40	80.0
No	1	16.7	5	10.0
Cannot Say	1	16.7	5	10.0
No Response to this Question	1	*	2	*

Table B-1.11 Need for Skilled Carpenters.

IN YOUR OPINION, WHICH OF THE FOLLOWING TASKS MUST A "SKILLED CARPENTER" BE ABLE TO PERFORM PROFICIENTLY ?

Use the following scale :
4. Absolutely Necessary
3. Necessary
2. Desirable
1. Unnecessary

Table B-1.12

TASKS	CENTRAL REGION AVERAGE	STATEWIDE AVERAGE
Install paneling, furring, soffit ceiling	2.71	2.65
Install cabinets, fixtures and shelving	2.71	2.63
Build trusses	2.71	2.54
Install structural timber	2.57	2.62
Install insulation and sound control material	2.57	2.57
Frame roofs	2.43	2.63
Construct interior stairs	2.29	2.74
Install exterior wall covering and trim	2.29	2.66
Preplan forthcoming activities	2.29	2.60
Conduct site preparation and layout	2.29	2.56
Install door, window frame and units	2.29	2.59
Install drywall material	2.29	2.47
Frame partitions	2.17	2.63
Issue instructions to crew members	2.14	2.68
Install decking and sheathing	2.14	2.64
Read blueprints	2.14	2.60
Frame floor and sills	2.14	2.59
Apply weather stripping and caulking	2.14	2.50
Construction forms (footings, walls, edge, curbs)	2.00	2.67
Construction forms (piers, columns, beams, slabs, stairs, bridge, deck)	2.00	2.65

WILL THE FUTURE CARPENTER BE PERFORMING A BROADER VARIETY OF TASKS ?

Use the following rating system :

4. Much broader
3. Broader
2. No change
1. Narrower

CARPENTER	CENTRAL REGION	STATEWIDE
	AVERAGE	AVERAGE
Form carpenters	2.57	2.57
Finish carpenters	2.57	2.53
Framing carpenters	2.29	2.61

Table B-1.13 Future Carpenter's Tasks.

HAS A SHORTAGE OF CARPENTERS EVER DIRECTLY CAUSED SCHEDULING PROBLEMS ?

RESPONSE	CENTRAL REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	3	50.0	25	53.2
No	3	50.0	22	46.8
No Response to this Question	1	*	5	*

Table B-1.14 Shortage and Scheduling Problems.

WOULD YOU BID MORE JOBS OR INCREASE THE VOLUME OF YOUR BUSINESS IF THERE WAS AN ADEQUATE SUPPLY OF SKILLED CARPENTERS IN THE INDUSTRY ?

RESPONSE	CENTRAL REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	0	0.0	17	32.7
No	4	57.1	21	40.4
Cannot Say	3	42.9	14	26.9
No Response to this Question	0	0.0	0	0.0

Table B-1.15 Effect of Availability of Skilled Carpenters on Business Volume.

HAVE YOU EVER, IN THE PAST YEAR, PAID OVERTIME TO SKILLED CARPENTERS BECAUSE OF ANY SHORTAGE IN THE MARKET ?

RESPONSE	CENTRAL REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	3	42.9	19	36.5
No	4	57.1	32	61.5
Cannot Say	0	0.0	1	1.9
No Response to this Question	0	0.0	0	0.0

Table B-1.16 Overtime Payments.

WHAT PERCENTAGE OF HOURS WORKED BY CARPENTERS IS OVERTIME ?
Please Estimate.

QUESTION	CENTRAL REGION			STATEWIDE
	AVERAGE	MINIMUM	MAXIMUM	AVERAGE
Percentage of overtime hours worked by the carpenters	6.0 %	0.0 %	10.0 %	6.0 %

Table B-1.17 Estimated Overtime Hours.
(in percentage)

WOULD YOU HIRE MORE SKILLED CARPENTERS TO AVOID PAYING OVERTIME ?

RESPONSE	CENTRAL REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	5	71.4	29	58.0
No	2	28.6	10	20.0
Cannot Say	0	0.0	11	22.0
No Response to this Question	0	*	2	*

Table B-1.18 More Skilled Carpenters versus Overtime.

IN YOUR VIEW, IS THE SHORTAGE OF SKILLED CARPENTERS DUE TO :

Use the following scale :
4. Very important reason
3. Important reason
2. Could be a reason
1. Not a reason at all

REASONS	CENTRAL REGION AVERAGE	STATEWIDE AVERAGE
More emphasis on cutting cost than quality control	3.00	2.79
Low wage rates	2.86	2.17
General decline in craftsmanship	2.71	3.05
Low profile of labor unions	2.71	2.74
Construction boom	2.57	2.68
Because there is greater emphasis on factory built components (trusses etc.), there is a decreased demand in the skills level of on site carpenters	2.29	2.30
Lack of training programs	2.17	2.55
Part time carpenters	1.86	1.80

Table B-1.19 Reasons for the Shortage of Skilled Carpenters.

WHAT PERCENTAGE OF CARPENTRY WORK DO YOU SUBCONTRACT ?

QUESTION	CENTRAL REGION			STATEWIDE
	AVERAGE	MINIMUM	MAXIMUM	AVERAGE
Percentage of Carpentry work Subcontracted	25.0 %	20.0 %	30.0 %	23.9 %

Table B-1.20 Percentage of Carpentry Work Subcontracted.

IF YOU SUBCONTRACT A MAJORITY OF YOUR CARPENTRY WORK, ARE THERE ENOUGH FIRMS AVAILABLE TO DO YOUR WORK ?

RESPONSE	CENTRAL REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	1	50.0	5	38.5
No	1	50.0	4	30.8
Cannot Say	0	0.0	4	30.8
No Response to this Question	5	*	39	*

Table B-1.21 Availability of Firms to Subcontract Carpentry Work.

ARE YOU SATISFIED WITH THE QUALITY OF THE WORK DONE BY THE FIRMS TO WHOM YOU SUBCONTRACTED WORK ?

RESPONSE	CENTRAL REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	0	0.0	7	46.7
No	2	100.0	5	33.3
Cannot Say	0	0.0	3	20.0
No Response to this Question	5	*	37	*

Table B-1.22 Quality of Subcontracted Work.

IN YOUR OPINION, IS THE SKILL OF THE CARPENTERS WHO WORK ON THE SUBCONTRACTED WORK ADEQUATE ?

RESPONSE	CENTRAL REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	0	0.0	6	42.9
No	2	100.0	7	50.0
Cannot Say	0	0.0	1	7.1
No Response to this Question	5	*	38	*

Table B-1.23 Adequacy of Subcontracted Skills.

IN YOUR OPINION, WHAT PERCENTAGE OF THE SUBCONTRACTOR'S CARPENTERS ARE SKILLED CARPENTERS ?

QUESTION	CENTRAL REGION			STATEWIDE
	AVERAGE	MINIMUM	MAXIMUM	AVERAGE
Percentage of subcontractor's carpenters that are skilled	30.0 %	10.0 %	50.0 %	33.7 %

Table B-1.24 Percentage of Subcontractor's Skilled Carpenters.

ARE THE FOLLOWING TRAINING PROGRAMS MAKING ANY SUBSTANTIAL CONTRIBUTIONS IN SUPPLYING SKILLED CARPENTERS TO THE CONSTRUCTION INDUSTRY ?

Use the following scale :

4. To a large extent
3. To some extent
2. To a small extent
1. Negligible

TRAINING PROGRAM	CENTRAL REGION	STATEWIDE
	AVERAGE	AVERAGE
Union apprenticeship programs	3.60	3.29
On-the-job training	2.80	2.93
Vocational training centers	2.40	2.03
Open shop apprenticeship programs	1.50	1.69
Community college training	1.20	1.37

Table B-1.25 Contribution of the Training Programs.

IN YOUR OPINION, ARE THE FOLLOWING TRAINING PROGRAMS MAKING ANY SUBSTANTIAL CONTRIBUTIONS IN PRODUCING THE BEST CARPENTERS FOR YOUR NEEDS ?

Rank on a 1 - 4 scale :

4. Being the best
3.
2.
1. Being the worst

TRAINING PROGRAM	CENTRAL REGION AVERAGE	STATEWIDE AVERAGE
Union apprenticeship programs	3.14	3.25
On-the-job training	2.83	2.88
Open shop apprenticeship programs	2.60	2.00
Vocational training centers	1.80	2.13
Community college training	1.75	1.79

Table B-1.26 Performance of the Training Programs.

DO YOU THINK THAT CARPENTERS WORKING IN COMMERCIAL CONSTRUCTION NEED TO UNDERGO SOME CLASSROOM TRAINING PROGRAM ?

RESPONSE	CENTRAL REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	6	100.0	40	80.0
No	0	0.0	4	8.0
Cannot Say	0	0.0	6	12.0
No Response to this Question	1	*	2	*

Table B-1.27 Need for Classroom Training.

WHAT LEVEL OF COMMUNICATIONS DO YOU HAVE WITH THE FOLLOWING TRAINING PROGRAMS ?

Use the following scale :

4. Very close
3. Close
2. Remote
1. Very remote

TRAINING PROGRAM	CENTRAL REGION	STATEWIDE
	AVERAGE	AVERAGE
Union apprenticeship programs	2.43	2.78
On-the-job training	2.43	2.46
Vocational training centers	1.00	1.30
Open shop apprenticeship programs	1.00	1.20
Community college training	1.00	1.13

Table B-1.28 Communication Level Between Industry and Training Programs

RANK THE FOLLOWING AS THE BEST METHOD OF ESTABLISHING AN INDUSTRY/TRAINING PROGRAM LINKAGE .

(1,2,3,4; 4 being the most important)

STRATEGY	CENTRAL REGION	STATEWIDE
	AVERAGE	AVERAGE
Formal meeting of the two groups	3.00	3.14
Attending educational functions	2.67	2.84
Written contact	2.33	2.74
Sitting on an advisory committee	2.17	2.62

Table B-1.29 Strategy for Industry / Training Program Linkage.

IN YOUR OPINION, SHOULD THE CARPENTER BE REQUIRED TO HAVE A LICENSE TO INSURE BETTER SKILLS AND STANDARDS ?

RESPONSE	CENTRAL REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENT	PERCENT
Yes	2	28.6	14	26.9
No	5	71.4	30	57.7
Cannot Say	0	0.0	8	15.4
No Response to this Question	0	0.0	0	0.0

Table B-1.30 Licensing of Carpenters.

FROM YOUR EXPERIENCE, DO YOU BELIEVE THAT ILLEGAL ALIENS ARE BEING HIRED BY OTHER CONSTRUCTION FIRMS ?

RESPONSE	CENTRAL REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	3	42.9	26	50.0
No	0	0.0	4	7.7
Cannot Say	4	57.1	22	42.3
No Response to this Question	0	0.0	0	0.0

Table B-1.31 Illegal Alien Carpenters.

B-2

NORTHEAST REGION

RESPONSES BY REGION

REGION	NUMBER OF RESPONDENTS	PERCENT
Northeast	5	9.6
Central	7	13.5
Northwest	0	0.0
Southeast	32	61.5
Southwest	8	15.4
Total	52	100.0

Table B-2.1 Responses by Region.

TYPE OF OPERATION

TYPE OF OPERATION	NORTHEAST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Open Shop	0	0.0	0	0.0
Both (Double-Breasted)	1	20.0	8	15.4
Union	4	80.0	44	84.6
Total Response	5	100.0	52	100.0
No Response to this Question	0	0.0	0	0.0

Table B-2.2 Type of Operation.

TYPE OF CONSTRUCTION UNDERTAKEN

TYPE OF CONSTRUCTION	NORTHEAST REGION	STATEWIDE
	AVERAGE PERCENT	AVERAGE PERCENT
Commercial	63.0	71.3
Other	34.0	20.1
Residential	3.0	8.6

Table B-2.3 Type of Construction.
(in percentage)

AVERAGE ANNUAL VOLUME OF BUSINESS FOR UNION CONTRACTORS SURVEYED

BACKGROUND INFORMATION	NORTHEAST REGION		STATEWIDE	
	AVERAGE	MEDIAN	AVERAGE	MEDIAN
Annual Volume of Business (in millions)	$ 23.4	$ 20.0	$ 24.08	$ 3.25
Number of Projects Carried per Year	119	25	65	20

Table B-2.4 Average Volume of Business.

SKILL LEVEL OF CARPENTERS

RESPONSE	NORTHEAST REGION			STATEWIDE
	AVERAGE	MINIMUM	MAXIMUM	AVERAGE
Number of Journeymen Carpenters on the payroll	25	10	40	21
Number of Journeymen Carpenters that are skilled	23	10	40	12
Number of Apprentices or Carpenters-in-training on the payroll	5	3	10	3

Note : Figures have been rounded.

Table B-2.5 Number of Carpenters in Employment. (By Skill Level)

WHAT IS THE AVERAGE HOURLY WAGE PAID BY YOUR FIRM TO THE FOLLOWING ?

1. Journeyman Carpenter
2. Apprentice (Carpenter-in-training)

CARPENTER	NORTHEAST REGION			STATEWIDE
	AVERAGE	MINIMUM	MAXIMUM	AVERAGE
Journeyman Carpenter	$ 14.18	$ 12.00	$ 15.90	$ 13.15
Apprentice (Carpenter-in-training)	$ 9.17	$ 8.00	$ 10.34	$ 9.30

Table B-2.6 Hourly Wages (in dollars excluding fringe benefits)

HOW LONG, ON THE AVERAGE, DO THE CARPENTERS STAY IN YOUR EMPLOYMENT ?

CARPENTER	NORTHEAST REGION			STATEWIDE
	AVERAGE	MINIMUM	MAXIMUM	AVERAGE
Journeyman Carpenter	31	4	100	32
Apprentice Carpenter-in-training	24	6	48	16

Note : Figures have been rounded.

Table B-2.7 Average Length of Employment. (in months)

WHERE DO YOU SEARCH FOR CARPENTERS ?

Use the following scale:

4. Always
3. Most of the time
2. Sometimes
1. Never

HIRING PRACTICE	NORTHEAST REGION AVERAGE	STATEWIDE AVERAGE
Labor Unions	3.80	3.47
Labor agents	3.00	2.03
Union apprenticeship programs	2.75	2.60
Contacts in the construction industry	1.50	2.30
Company on-the-job training	1.50	1.54
Other construction jobs	1.25	1.84
Advertisements in the papers	1.25	1.34
Vocational training centers	1.00	1.12
Community college training programs	1.00	1.12
Open shop apprenticeship programs	1.00	1.00

Table B-2.8 Hiring Practice.

WHAT CRITERIA DETERMINES PROMOTION OR AN INCREASE IN WAGES OF A CARPENTER IN YOUR COMPANY ?

Use the following scale :

4. Always
3. Most of the time
2. Sometimes
1. Never

PROMOTION CRITERIA	NORTHEAST REGION AVERAGE	STATEWIDE AVERAGE
Graduation from training program	3.33	2.73
Performance	2.33	3.45
Experience	2.00	3.02
Market wage rate	1.00	2.28
Seniority	1.00	1.93

Table B-2.9 Promotion Criteria.

ARE THERE ENOUGH SKILLED CARPENTERS FOR YOU TO HIRE ?

RESPONSE	NORTHEAST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	4	80.0	21	40.4
No	1	20.0	30	57.7
Cannot Say	0	0.0	1	1.9
No Response to this Question	0	0.0	0	0.0

Table B-2.10 Availability of Skilled Carpenters.

DO YOU FEEL THERE IS A NEED FOR MORE SKILLED CARPENTERS IN COMMERCIAL CONSTRUCTION ?

RESPONSE	NORTHEAST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	3	60.0	40	80.0
No	1	20.0	5	10.0
Cannot Say	1	20.0	5	10.0
No Response to this Question	0	*	2	*

Table B-2.11 Need for Skilled Carpenters.

IN YOUR OPINION, WHICH OF THE FOLLOWING TASKS MUST A "SKILLED CARPENTER" BE ABLE TO PERFORM PROFICIENTLY ?

Use the following scale :
4. Absolutely Necessary
3. Necessary
2. Desirable
1. Unnecessary

Table B-2.12

TASKS	NORTHEAST REGION AVERAGE	STATEWIDE AVERAGE
Construction forms (footings, walls, edge, curbs)	3.20	2.67
Construction forms (piers, columns, beams,slabs, stairs, bridge, deck)	3.20	2.65
Frame partitions	3.00	2.63
Frame roofs	3.00	2.63
Frame floor and sills	3.00	2.59
Install decking and sheathing	2.80	2.64
Install structural lumber	2.80	2.62
Preplan forthcoming activities	2.80	2.60
Conduct site preparation and layouts	2.80	2.56
Issue instructions to crew members	2.60	2.68
Read blueprints	2.60	2.60
Construct interior stairs	2.40	2.74
Build trusses	2.20	2.54
Install exterior wall covering and trim	2.00	2.66
Install paneling, furring, soffit ceiling	2.00	2.65
Install cabinets, fixtures, and shelving	2.00	2.63
Install door, window frame, and units	2.00	2.59
Apply weather stripping and caulking	2.00	2.50
Install insulation and sound control material	1.80	2.57
Install drywall material	1.80	2.47

WILL THE FUTURE CARPENTER BE PERFORMING A BROADER VARIETY OF TASKS ?

Use the following rating system :

4. Much broader
3. Broader
2. No change
1. Narrower

CARPENTER	NORTHEAST REGION	STATEWIDE
	AVERAGE	AVERAGE
Finish carpenters	2.20	2.53
Framing carpenters	2.00	2.61
Form carpenters	2.00	2.57

Table B-2.13 Future Carpenter's Tasks.

HAS A SHORTAGE OF CARPENTERS EVER DIRECTLY CAUSED SCHEDULING PROBLEMS ?

RESPONSE	NORTHEAST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	1	20.0	25	53.2
No	4	80.0	22	46.8
No Response to this Question	0	0.0	5	*

Table B-2.14 Shortage and Scheduling Problems.

WOULD YOU BID MORE JOBS OR INCREASE THE VOLUME OF YOUR BUSINESS IF THERE WAS AN ADEQUATE SUPPLY OF SKILLED CARPENTERS IN THE INDUSTRY ?

RESPONSE	NORTHEAST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	0	0.0	17	32.7
No	5	100.0	21	40.4
Cannot Say	0	0.0	14	26.9
No Response to this Question	0	0.0	0	0.0

Table B-2.15 Effect of Availability of Skilled Carpenters on Business Volume.

HAVE YOU EVER, IN THE PAST YEAR, PAID OVERTIME TO SKILLED CARPENTERS BECAUSE OF ANY SHORTAGE IN THE MARKET ?

RESPONSE	NORTHEAST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	1	20.0	19	36.5
No	4	80.0	32	61.5
Cannot Say	0	0.0	1	1.9
No Response to this Question	0	0.0	0	0.0

Table B-2.16 Overtime Payments.

WHAT PERCENTAGE OF HOURS WORKED BY CARPENTERS IS OVERTIME ?
Please Estimate.

QUESTION	NORTHEAST REGION			STATEWIDE
	AVERAGE	MINIMUM	MAXIMUM	AVERAGE
Percentage of overtime hours worked by the carpenters	3.5 %	0.5 %	5.0 %	6.0 %

Table B-2.17 Estimated Overtime Hours.
(in percentage)

WOULD YOU HIRE MORE SKILLED CARPENTERS TO AVOID PAYING OVERTIME ?

RESPONSE	NORTHEAST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	1	25.0	29	58.0
No	2	50.0	10	20.0
Cannot Say	1	25.0	11	22.0
No Response to this Question	0	0.0	2	*

Table B-2.18 More Skilled Carpenters versus Overtime.

IN YOUR VIEW, IS THE SHORTAGE OF SKILLED CARPENTERS DUE TO :

Use the following scale :
4. Very important reason
3. Important reason
2. Could be a reason
1. Not a reason at all

REASONS	NORTHEAST REGION AVERAGE	STATEWIDE AVERAGE
More emphasis on cutting cost than quality control	3.75	2.79
Construction boom	3.25	2.68
Low profile of labor unions	3.00	2.74
Lack of training programs	3.00	2.55
General decline in craftsmanship	2.75	3.05
Low wage rates	2.50	2.17
Because there is greater emphasis on factory built components (trusses etc.), there is a decreased demand in the skills level of on site carpenters	2.00	2.30
Part time carpenters	1.50	1.80

Table B-2.19 Reasons for the Shortage of Skilled Carpenters.

WHAT PERCENTAGE OF CARPENTRY WORK DO YOU SUBCONTRACT ?

QUESTION	NORTHEAST REGION			STATEWIDE
	AVERAGE	MINIMUM	MAXIMUM	AVERAGE
Percentage of Carpentry work Subcontracted	20.0 %	10.0 %	30.0 %	23.9 %

Table B-2.20 Percentage of Carpentry Work Subcontracted.

IF YOU SUBCONTRACT A MAJORITY OF YOUR CARPENTRY WORK, ARE THERE ENOUGH FIRMS AVAILABLE TO DO YOUR WORK ?

RESPONSE	NORTHEAST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	0	0.0	5	38.5
No	0	0.0	4	30.8
Cannot Say	0	0.0	4	30.8
No Response to this Question	5	*	39	*

Table B-2.21 Availability of Firms to Subcontract Carpentry Work.

ARE YOU SATISFIED WITH THE QUALITY OF THE WORK DONE BY THE FIRMS TO WHOM YOU SUBCONTRACTED WORK ?

RESPONSE	NORTHEAST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	2	100.0	7	46.7
No	0	0.0	5	33.3
Cannot Say	0	0.0	3	20.0
No Response to this Question	3	*	37	*

Table B-2.22 Quality of Subcontracted Work.

IN YOUR OPINION, IS THE SKILL OF THE CARPENTERS WHO WORK ON THE SUBCONTRACTED WORK ADEQUATE ?

RESPONSE	NORTHEAST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	2	100.0	6	42.9
No	0	0.0	7	50.0
Cannot Say	0	0.0	1	7.1
No Response to this Question	3	*	38	*

Table B-2.23 Adequacy of Subcontracted Skills.

IN YOUR OPINION, WHAT PERCENTAGE OF THE SUBCONTRACTOR'S CARPENTERS ARE SKILLED CARPENTERS ?

QUESTION	NORTHEAST REGION			STATEWIDE
	AVERAGE	MINIMUM	MAXIMUM	AVERAGE
Percentage of subcontractor's carpenters that are skilled	25.0 %	25.0 %	25.0 %	33.7 %

Table B-2.24 Percentage of Subcontractor's Skilled Carpenters.

ARE THE FOLLOWING TRAINING PROGRAMS MAKING ANY SUBSTANTIAL CONTRIBUTIONS IN SUPPLYING SKILLED CARPENTERS TO THE CONSTRUCTION INDUSTRY ?

Use the following scale :

4. To a large extent
3. To some extent
2. To a small extent
1. Negligible

TRAINING PROGRAM	NORTHEAST REGION	STATEWIDE
	AVERAGE	AVERAGE
On-the-job training	3.00	2.93
Vocational training centers	3.00	2.03
Union apprenticeship programs	2.33	3.29
Community college training	2.00	1.37
Open shop apprenticeship programs	1.00	1.69

Table B-2.25 Contribution of the Training Programs.

IN YOUR OPINION, ARE THE FOLLOWING TRAINING PROGRAMS MAKING ANY SUBSTANTIAL CONTRIBUTIONS IN PRODUCING THE BEST CARPENTERS FOR YOUR NEEDS ?

Rank on a 1 - 4 scale :

4. Being the best
3.
2.
1. Being the worst

TRAINING PROGRAM	NORTHEAST REGION AVERAGE	STATEWIDE AVERAGE
Union apprenticeship programs	3.20	3.25
On-the-job training	2.50	2.88
Vocational training centers	1.67	2.13
Open shop apprenticeship programs	1.33	2.00
Community college training	1.33	1.79

Table B-2.26 Performance of the Training Programs.

DO YOU THINK THAT CARPENTERS WORKING IN COMMERCIAL CONSTRUCTION NEED TO UNDERGO SOME CLASSROOM TRAINING PROGRAM ?

RESPONSE	NORTHEAST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	2	40.0	40	80.0
No	2	40.0	4	8.0
Cannot Say	1	20.0	6	12.0
No Response to this Question	0	0.0	2	*

Table B-2.27 Need for Classroom Training.

WHAT LEVEL OF COMMUNICATIONS DO YOU HAVE WITH THE FOLLOWING TRAINING PROGRAMS ?

Use the following scale :

4. Very close
3. Close
2. Remote
1. Very remote

TRAINING PROGRAM	NORTHEAST REGION AVERAGE	STATEWIDE AVERAGE
Union apprenticeship programs	3.20	2.78
On-the-job training	2.00	2.46
Vocational training centers	1.25	1.30
Open shop apprenticeship programs	1.25	1.20
Community college training	1.00	1.13

Table B-2.28 Communication Level Between Industry and Training Programs

RANK THE FOLLOWING AS THE BEST METHOD OF ESTABLISHING AN INDUSTRY/TRAINING PROGRAM LINKAGE .

(1,2,3,4; 4 being the most important)

STRATEGY	NORTHEAST REGION AVERAGE	STATEWIDE AVERAGE
Sitting on an advisory committee	3.00	2.62
Written contact	2.75	2.74
Formal meeting of the two groups	2.67	3.14
Attending educational functions	2.67	2.84

Table B-2.29 Strategy for Industry / Training Program Linkage.

IN YOUR OPINION, SHOULD THE CARPENTER BE REQUIRED TO HAVE A LICENSE TO INSURE BETTER SKILLS AND STANDARDS ?

RESPONSE	NORTHEAST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENT	PERCENT
Yes	2	40.0	14	26.9
No	3	60.0	30	57.7
Cannot Say	0	0.0	8	15.4
No Response to this Question	0	0.0	0	0.0

Table B-2.30 Licensing of Carpenters.

FROM YOUR EXPERIENCE, DO YOU BELIEVE THAT ILLEGAL ALIENS ARE BEING HIRED BY OTHER CONSTRUCTION FIRMS ?

RESPONSE	NORTHEAST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	4	80.0	26	50.0
No	0	0.0	4	7.7
Cannot Say	1	20.0	22	42.3
No Response to this Question	0	0.0	0	0.0

Table B-2.31 Illegal Alien Carpenters.

IN YOUR OPINION, WHAT PERCENTAGE OF THE CARPENTERS IN FLORIDA ARE ILLEGAL ALIENS ?

QUESTION	NORTHEAST REGION			STATEWIDE
	AVERAGE	MINIMUM	MAXIMUM	AVERAGE
Percentage of illegal alien carpenters	10.0 %	10.0 %	10.0 %	11.0 %

Table B-2.32 Estimated Percentage of Illegal Aliens.

B-3

SOUTHEAST REGION

RESPONSES BY REGION

REGION	NUMBER OF RESPONDENTS	PERCENT
Southeast	32	61.5
Central	7	13.5
Northeast	5	9.6
Northwest	0	0.0
Southwest	8	15.4
Total	52	100.0

Table B-3.1 Responses by Region.

TYPE OF OPERATION

TYPE OF OPERATION	SOUTHEAST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Open Shop	0	0.0	0	0.0
Both (Double-Breasted)	3	9.4	8	15.4
Union	29	90.6	44	84.6
Total Response	32	100.0	52	100.0
No Response to this Question	0	0.0	0	0.0

Table B-3.2 Type of Operation.

TYPE OF CONSTRUCTION UNDERTAKEN

TYPE OF CONSTRUCTION	SOUTHEAST REGION	STATEWIDE
	AVERAGE PERCENT	AVERAGE PERCENT
Commercial	72.7	71.3
Other	13.8	20.1
Residential	13.5	8.6

Table B-3.3 Type of Construction.
(in percentage)

AVERAGE ANNUAL VOLUME OF BUSINESS FOR UNION CONTRACTORS SURVEYED

BACKGROUND INFORMATION	SOUTHEAST REGION		STATEWIDE	
	AVERAGE	MEDIAN	AVERAGE	MEDIAN
Annual Volume of Business (in millions)	$ 4.15	$ 3.0	$ 24.08	$ 3.25
Number of Projects Carried per Year	56	20	65	20

Table B-3.4 Average Volume of Business.

SKILL LEVEL OF CARPENTERS

RESPONSE	SOUTHEAST REGION			STATEWIDE
	AVERAGE	MINIMUM	MAXIMUM	AVERAGE
Number of Journeymen Carpenters on the payroll	16	1	100	21
Number of Journeymen Carpenters that are skilled	7	1	25	12
Number of Apprentices or Carpenters-in-training on the payroll	2	0	25	3

Note : Figures have been rounded.

Table B-3.5 Number of Carpenters in Employment. (By Skill Level)

WHAT IS THE AVERAGE HOURLY WAGE PAID BY YOUR FIRM TO THE FOLLOWING ?

1. Journeyman Carpenter
2. Apprentice (Carpenter-in-training)

CARPENTER	SOUTHEAST REGION			STATEWIDE
	AVERAGE	MINIMUM	MAXIMUM	AVERAGE
Journeyman Carpenter	$ 13.17	$ 12.35	$ 16.00	$ 13.15
Apprentice (Carpenter-in-training)	$ 6.82	$ 9.25	$ 16.00	$ 9.30

Table B-3.6 Hourly Wages (in dollars excluding fringe benefits)

HOW LONG, ON THE AVERAGE, DO THE CARPENTERS STAY IN YOUR EMPLOYMENT ?

CARPENTER	SOUTHEAST REGION			STATEWIDE
	AVERAGE	MINIMUM	MAXIMUM	AVERAGE
Journeyman Carpenter	40	1	240	32
Apprentice Carpenter-in-training	17	0	120	16

Note : Figures have been rounded.

Table B-3.7 Average Length of Employment. (in months)

WHERE DO YOU SEARCH FOR CARPENTERS ?

Use the following scale:

4. Always
3. Most of the time
2. Sometimes
1. Never

HIRING PRACTICE	SOUTHEAST REGION AVERAGE	STATEWIDE AVERAGE
Labor Unions	3.27	3.47
Union apprenticeship programs	2.64	2.60
Contacts in the construction industry	2.50	2.30
Labor agents	2.04	2.03
Other construction jobs	2.00	1.84
Company on-the-job training	1.59	1.54
Advertisements in the papers	1.36	1.34
Vocational training centers	1.18	1.12
Community college training programs	1.18	1.12
Open-shop apprenticeship programs	1.00	1.00

Table B-3.8 Hiring Practice.

WHAT CRITERIA DETERMINES PROMOTION OR AN INCREASE IN WAGES OF A CARPENTER IN YOUR COMPANY ?

Use the following scale :

4. Always
3. Most of the time
2. Sometimes
1. Never

PROMOTION CRITERIA	SOUTHEAST REGION AVERAGE	STATEWIDE AVERAGE
Performance	3.27	3.45
Market wage rate	2.90	2.28
Experience	2.11	3.02
Graduation from training program	2.05	2.73
Seniority	1.79	1.93

Table B-3.9 Promotion Criteria.

ARE THERE ENOUGH SKILLED CARPENTERS FOR YOU TO HIRE ?

RESPONSE	SOUTHEAST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	10	31.3	21	40.4
No	21	65.6	30	57.7
Cannot Say	1	3.1	1	1.9
No Response to this Question	0	0.0	0	0.0

Table B-3.10 Availability of Skilled Carpenters.

DO YOU FEEL THERE IS A NEED FOR MORE SKILLED CARPENTERS IN COMMERCIAL CONSTRUCTION ?

RESPONSE	SOUTHEAST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	27	84.4	40	80.0
No	3	9.4	5	10.0
Cannot Say	2	6.3	5	10.0
No Response to this Question	0	0.0	2	*

Table B-3.11 Need for Skilled Carpenters.

IN YOUR OPINION, WHICH OF THE FOLLOWING TASKS MUST A "SKILLED CARPENTER" BE ABLE TO PERFORM PROFICIENTLY ?

Use the following scale :
4. Absolutely Necessary
3. Necessary
2. Desirable
1. Unnecessary

Table B-3.12

TASKS	SOUTHEAST REGION AVERAGE	STATEWIDE AVERAGE
Construct interior stairs	2.94	2.74
Install exterior wall covering and trim	2.83	2.66
Issue instructions to crew members	2.79	2.68
Construction forms (footings, walls, edge, curbs)	2.72	2.67
Install insulation and sound control material	2.70	2.57
Install decking and sheathing	2.68	2.64
Apply weather stripping and caulking	2.67	2.50
Install paneling, furring, soffit ceiling	2.66	2.65
Read blueprints	2.66	2.60
Construction forms (piers, columns, beams, slabs, stairs, bridge, deck)	2.65	2.65
Install cabinets, fixtures, and shelving	2.64	2.63
Build trusses	2.63	2.54
Install structural timber	2.62	2.62
Install door, window frame and units	2.61	2.59
Frame roofs	2.60	2.63
Conduct site preparations and layouts	2.60	2.56
Preplan forthcoming activities	2.59	2.60
Frame partitions	2.58	2.63
Frame floor and sills	2.57	2.59
Install drywall material	2.55	2.47

WILL THE FUTURE CARPENTER BE PERFORMING A BROADER VARIETY OF TASKS ?

Use the following rating system :

4. Much broader
3. Broader
2. No change
1. Narrower

CARPENTER	SOUTHEAST REGION	STATEWIDE
	AVERAGE	AVERAGE
Framing carpenters	2.75	2.61
Form carpenters	2.68	2.57
Finish carpenters	2.57	2.53

Table B-3.13 Future Carpenter's Tasks.

HAS A SHORTAGE OF CARPENTERS EVER DIRECTLY CAUSED SCHEDULING PROBLEMS ?

RESPONSE	SOUTHEAST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	18	60.0	25	53.2
No	12	40.0	22	46.8
No Response to this Question	2	*	5	*

Table B-3.14 Shortage and Scheduling Problems.

WOULD YOU BID MORE JOBS OR INCREASE THE VOLUME OF YOUR BUSINESS IF THERE WAS AN ADEQUATE SUPPLY OF SKILLED CARPENTERS IN THE INDUSTRY ?

RESPONSE	SOUTHEAST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	12	37.5	17	32.7
No	10	31.3	21	40.4
Cannot Say	10	31.3	14	26.9
No Response to this Question	0	0.0	0	0.0

Table B-3.15 Effect of Availability of Skilled Carpenters on Business Volume.

HAVE YOU EVER, IN THE PAST YEAR, PAID OVERTIME TO SKILLED CARPENTERS BECAUSE OF ANY SHORTAGE IN THE MARKET ?

RESPONSE	SOUTHEAST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	14	43.8	19	36.5
No	18	56.3	32	61.5
Cannot Say	0	0.0	1	1.9
No Response to this Question	0	0.0	0	0.0

Table B-3.16 Overtime Payments.

WHAT PERCENTAGE OF HOURS WORKED BY CARPENTERS IS OVERTIME ?
Please Estimate.

QUESTION	SOUTHEAST REGION			STATEWIDE
	AVERAGE	MINIMUM	MAXIMUM	AVERAGE
Percentage of overtime hours worked by the carpenters	6.4 %	0.0 %	40.0 %	6.0 %

Table B-3.17 Estimated Overtime Hours.
(in percentage)

WOULD YOU HIRE MORE SKILLED CARPENTERS TO AVOID PAYING OVERTIME ?

RESPONSE	SOUTHEAST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	20	64.5	29	58.0
No	5	16.1	10	20.0
Cannot Say	6	19.4	11	22.0
No Response to this Question	1	*	2	*

Table B-3.18 More Skilled Carpenters versus Overtime.

IN YOUR VIEW, IS THE SHORTAGE OF SKILLED CARPENTERS DUE TO :

Use the following scale :

4. Very important reason
3. Important reason
2. Could be a reason
1. Not a reason at all

REASONS	SOUTHEAST REGION AVERAGE	STATEWIDE AVERAGE
General decline in craftsmanship	3.04	3.05
Construction boom	2.65	2.68
Low profile of labor unions	2.63	2.74
More emphasis on cutting cost than quality control	2.50	2.79
Lack of training programs	2.46	2.55
Because there is greater emphasis on factory built components (trusses etc.), there is a decreased demand in the skills level of on site carpenters	2.31	2.30
Low wage rates	1.85	2.17
Part time carpenters	1.80	1.80

Table B-3.19 Reasons for the Shortage of Skilled Carpenters.

WHAT PERCENTAGE OF CARPENTRY WORK DO YOU SUBCONTRACT ?

QUESTION	SOUTHEAST REGION			STATEWIDE
	AVERAGE	MINIMUM	MAXIMUM	AVERAGE
Percentage of Carpentry work Subcontracted	24.4 %	3.0 %	75.0 %	23.9 %

Table B-3.20 Percentage of Carpentry Work Subcontracted.

IF YOU SUBCONTRACT A MAJORITY OF YOUR CARPENTRY WORK, ARE THERE ENOUGH FIRMS AVAILABLE TO DO YOUR WORK ?

RESPONSE	SOUTHEAST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	4	40.0	5	38.5
No	3	30.0	4	30.8
Cannot Say	3	30.0	4	30.8
No Response to this Question	22	*	39	*

Table B-3.21 Availability of Firms to Subcontract Carpentry Work.

ARE YOU SATISFIED WITH THE QUALITY OF THE WORK DONE BY THE FIRMS TO WHOM YOU SUBCONTRACTED WORK ?

RESPONSE	SOUTHEAST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	5	50.0	7	46.7
No	2	20.0	5	33.3
Cannot Say	3	30.0	3	20.0
No Response to this Question	22	*	37	*

Table B-3.22 Quality of Subcontracted Work.

IN YOUR OPINION, IS THE SKILL OF THE CARPENTERS WHO WORK ON THE SUBCONTRACTED WORK ADEQUATE ?

RESPONSE	SOUTHEAST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	4	44.4	6	42.9
No	4	44.4	7	50.0
Cannot Say	1	11.1	1	7.1
No Response to this Question	23	*	38	*

Table B-3.23 Adequacy of Subcontracted Skills.

IN YOUR OPINION, WHAT PERCENTAGE OF THE SUBCONTRACTOR'S CARPENTERS ARE SKILLED CARPENTERS ?

QUESTION	SOUTHEAST REGION			STATEWIDE
	AVERAGE	MINIMUM	MAXIMUM	AVERAGE
Percentage of subcontractor's carpenters that are skilled	38.4 %	10.0 %	90.0 %	33.7 %

Table B-3.24 Percentage of Subcontractor's Skilled Carpenters.

ARE THE FOLLOWING TRAINING PROGRAMS MAKING ANY SUBSTANTIAL CONTRIBUTIONS IN SUPPLYING SKILLED CARPENTERS TO THE CONSTRUCTION INDUSTRY ?

Use the following scale :

4. To a large extent
3. To some extent
2. To a small extent
1. Negligible

TRAINING PROGRAM	SOUTHEAST REGION	STATEWIDE
	AVERAGE	AVERAGE
Union apprenticeship programs	3.26	3.29
On-the-job training	2.85	2.93
Vocational training centers	1.91	2.03
Open shop apprenticeship programs	1.74	1.69
Community college training	1.42	1.37

Table B-3.25 Contribution of the Training Programs.

IN YOUR OPINION, ARE THE FOLLOWING TRAINING PROGRAMS MAKING ANY SUBSTANTIAL CONTRIBUTIONS IN PRODUCING THE BEST CARPENTERS FOR YOUR NEEDS ?

Rank on a 1 - 4 scale :

4. Being the best
3.
2.
1. Being the worst

TRAINING PROGRAM	SOUTHEAST REGION AVERAGE	STATEWIDE AVERAGE
Union apprenticeship programs	3.27	3.25
On-the-job training	2.90	2.88
Open shop apprenticeship programs	2.11	2.00
Vocational training centers	2.05	2.13
Community college training	1.79	1.79

Table B-3.26 Performance of the Training Programs.

DO YOU THINK THAT CARPENTERS WORKING IN COMMERCIAL CONSTRUCTION NEED TO UNDERGO SOME CLASSROOM TRAINING PROGRAM ?

RESPONSE	SOUTHEAST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	26	81.3	40	80.0
No	2	6.3	4	8.0
Cannot Say	4	12.5	6	12.0
No Response to this Question	0	0.0	2	*

Table B-3.27 Need for Classroom Training.

WHAT LEVEL OF COMMUNICATIONS DO YOU HAVE WITH THE FOLLOWING TRAINING PROGRAMS ?

Use the following scale :

4. Very close
3. Close
2. Remote
1. Very remote

TRAINING PROGRAM	SOUTHEAST REGION AVERAGE	STATEWIDE AVERAGE
Union apprenticeship programs	2.80	2.78
On-the-job training	2.42	2.46
Vocational training centers	1.44	1.30
Open shop apprenticeship programs	1.28	1.20
Community college training	1.16	1.13

Table B-3.28 Communication Level Between Industry and Training Programs

RANK THE FOLLOWING AS THE BEST METHOD OF ESTABLISHING AN INDUSTRY/TRAINING PROGRAM LINKAGE .

(1,2,3,4; 4 being the most important)

STRATEGY	SOUTHEAST REGION AVERAGE	STATEWIDE AVERAGE
Formal meeting of the two groups	3.17	3.14
Attending educational functions	2.95	2.84
Sitting on an advisory committee	2.73	2.62
Written contact	2.65	2.74

Table B-3.29 Strategy for Industry / Training Program Linkage.

IN YOUR OPINION, SHOULD THE CARPENTER BE REQUIRED TO HAVE A LICENSE TO INSURE BETTER SKILLS AND STANDARDS ?

RESPONSE	SOUTHEAST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENT	PERCENT
Yes	9	28.1	14	26.9
No	19	59.4	30	57.7
Cannot Say	4	12.5	8	15.4
No Response to this Question	0	0.0	0	0.0

Table B-3.30 Licensing of Carpenters.

FROM YOUR EXPERIENCE, DO YOU BELIEVE THAT ILLEGAL ALIENS ARE BEING HIRED BY OTHER CONSTRUCTION FIRMS ?

RESPONSE	SOUTHEAST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	16	50.0	26	50.0
No	3	9.4	4	7.7
Cannot Say	13	40.6	22	42.3
No Response to this Question	0	0.0	0	0.0

Table B-3.31 Illegal Alien Carpenters.

IN YOUR OPINION, WHAT PERCENTAGE OF THE CARPENTERS IN FLORIDA ARE ILLEGAL ALIENS ?

QUESTION	SOUTHEAST REGION			STATEWIDE
	AVERAGE	MINIMUM	MAXIMUM	AVERAGE
Percentage of illegal alien carpenters	9.8 %	1.0 %	30.0 %	11.0 %

Table B-3.32 Estimated Percentage of Illegal Aliens.

B-4

SOUTHWEST REGION

RESPONSES BY REGION

REGION	NUMBER OF RESPONDENTS	PERCENT
Southwest	8	15.4
Central	7	13.5
Northeast	5	9.6
Northwest	0	0.0
Southeast	32	61.5
Total	52	100.0

Table B-4.1 Responses by Region.

TYPE OF OPERATION

TYPE OF OPERATION	SOUTHWEST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Open Shop	0	0.0	0	0.0
Both (Double-Breasted)	3	37.5	8	15.4
Union	5	62.5	44	84.6
Total Response	8	100.0	52	100.0
No Response to this Question	0	0.0	0	0.0

Table B-4.2 Type of Operation.

TYPE OF CONSTRUCTION UNDERTAKEN

TYPE OF CONSTRUCTION	SOUTHWEST REGION	STATEWIDE
	AVERAGE PERCENT	AVERAGE PERCENT
Commercial	64.3	71.3
Other	35.7	20.1
Residential	0.0	8.6

Table B-4.3 Type of Construction.
(in percentage)

AVERAGE ANNUAL VOLUME OF BUSINESS FOR UNION CONTRACTORS SURVEYED

BACKGROUND INFORMATION	SOUTHWEST REGION		STATEWIDE	
	AVERAGE	MEDIAN	AVERAGE	MEDIAN
Annual Volume of Business (in millions)	$ 4.44	$ 2.0	$ 24.08	$ 3.25
Number of Projects Carried per Year	67	60	65	20

Table B-4.4 Average Volume of Business.

SKILL LEVEL OF CARPENTERS

RESPONSE	SOUTHWEST REGION			STATEWIDE
	AVERAGE	MINIMUM	MAXIMUM	AVERAGE
Number of Journeymen Carpenters on the payroll	28	0	81	21
Number of Journeymen Carpenters that are skilled	17	0	41	12
Number of Apprentices or Carpenters-in-training on the payroll	1	0	4	3

Note : Figures have been rounded.

Table B-4.5 Number of Carpenters in Employment. (By Skill Level)

WHAT IS THE AVERAGE HOURLY WAGE PAID BY YOUR FIRM TO THE FOLLOWING ?

1. Journeyman Carpenter
2. Apprentice (Carpenter-in-training)

CARPENTER	SOUTHWEST REGION			STATEWIDE
	AVERAGE	MINIMUM	MAXIMUM	AVERAGE
Journeyman Carpenter	$ 12.02	$ 9.35	$ 18.00	$ 13.15
Apprentice (Carpenter-in-training)	$ 8.76	$ 7.00	$ 12.00	$ 9.30

Table B-4.6 Hourly Wages (in dollars excluding fringe benefits)

HOW LONG, ON THE AVERAGE, DO THE CARPENTERS STAY IN YOUR EMPLOYMENT ?

CARPENTER	SOUTHWEST REGION			STATEWIDE
	AVERAGE	MINIMUM	MAXIMUM	AVERAGE
Journeyman Carpenter	26	2	60	32
Apprentice Carpenter-in-training	10	2	24	16

Note : Figures have been rounded.

Table B-4.7 Average Length of Employment. (in months)

WHERE DO YOU SEARCH FOR CARPENTERS ?

Use the following scale:

4. Always
3. Most of the time
2. Sometimes
1. Never

HIRING PRACTICE	SOUTHWEST REGION AVERAGE	STATEWIDE AVERAGE
Labor Unions	3.63	3.47
Union apprenticeship programs	2.60	2.60
Contacts in the construction industry	2.33	2.30
Other construction jobs	2.50	1.84
Company on-the-job training	2.00	1.54
Labor agents	1.00	2.03
Advertisements in the papers	1.00	1.34
Vocational training centers	1.00	1.12
Community college training programs	1.00	1.12
Open-shop apprenticeship programs	1.00	1.00

Table B-4.8 Hiring Practice.

WHAT CRITERIA DETERMINES PROMOTION OR AN INCREASE IN WAGES OF A CARPENTER IN YOUR COMPANY ?

Use the following scale :

4. Always
3. Most of the time
2. Sometimes
1. Never

PROMOTION CRITERIA	SOUTHWEST REGION AVERAGE	STATEWIDE AVERAGE
Performance	3.80	3.45
Graduation from training program	3.17	2.73
Experience	3.00	3.02
Market wage rate	2.50	2.28
Seniority	1.79	1.93

Table B-4.9 Promotion Criteria.

ARE THERE ENOUGH SKILLED CARPENTERS FOR YOU TO HIRE ?

RESPONSE	SOUTHWEST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	3	37.5	21	40.4
No	5	62.5	30	57.7
Cannot Say	0	0.0	1	1.9
No Response to this Question	0	0.0	0	0.0

Table B-4.10 Availability of Skilled Carpenters.

DO YOU FEEL THERE IS A NEED FOR MORE SKILLED CARPENTERS IN COMMERCIAL CONSTRUCTION ?

RESPONSE	SOUTHWEST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	6	85.7	40	80.0
No	0	0.0	5	10.0
Cannot Say	1	14.3	5	10.0
No Response to this Question	1	*	2	*

Table B-4.11 Need for Skilled Carpenters.

IN YOUR OPINION, WHICH OF THE FOLLOWING TASKS MUST A "SKILLED CARPENTER" BE ABLE TO PERFORM PROFICIENTLY ?

Use the following scale :
4. Absolutely Necessary
3. Necessary
2. Desirable
1. Unnecessary

Table B-4.12

TASKS	SOUTHWEST REGION AVERAGE	STATEWIDE AVERAGE
Install door, window frame and units	3.33	2.59
Install paneling, furring, soffit ceiling	3.20	2.65
Install cabinets, fixtures and shelving	3.00	2.63
Frame partitions	3.00	2.63
Construction forms (piers, columns, beams, slabs, stairs, bridge, deck)	2.88	2.65
Install decking and sheathing	2.86	2.64
Frame floor and sills	2.86	2.59
Issue instructions to crew members	2.83	2.68
Install exterior wall covering and trim	2.83	2.66
Install drywall material	2.83	2.47
Construction forms (footings, walls, edge, curb)	2.75	2.67
Read blueprints	2.75	2.60
Preplan forthcoming activities	2.75	2.60
Frame roofs	2.67	2.63
Install insulation and sound control material	2.60	2.57
Construct interior stairs	2.50	2.74
Install structural lumber	2.50	2.62
Conduct site preparations and layouts	2.50	2.56
Apply weather stripping and caulking	2.50	2.50
Build trusses	2.17	2.54

WILL THE FUTURE CARPENTER BE PERFORMING A BROADER VARIETY OF TASKS ?

Use the following rating system :

4. Much broader
3. Broader
2. No change
1. Narrower

CARPENTER	SOUTHWEST REGION	STATEWIDE
	AVERAGE	AVERAGE
Framing carpenters	2.83	2.61
Finish carpenters	2.60	2.53
Form carpenters	2.50	2.57

Table B-4.13 Future Carpenter's Tasks.

HAS A SHORTAGE OF CARPENTERS EVER DIRECTLY CAUSED SCHEDULING PROBLEMS ?

RESPONSE	SOUTHWEST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	3	50.0	25	53.2
No	3	50.0	22	46.8
No Response to this Question	2	*	5	*

Table B-4.14 Shortage and Scheduling Problems.

WOULD YOU BID MORE JOBS OR INCREASE THE VOLUME OF YOUR BUSINESS IF THERE WAS AN ADEQUATE SUPPLY OF SKILLED CARPENTERS IN THE INDUSTRY ?

RESPONSE	SOUTHWEST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	5	62.5	17	32.7
No	2	25.0	21	40.4
Cannot Say	1	12.5	14	26.9
No Response to this Question	0	0.0	0	0.0

Table B-4.15 Effect of Availability of Skilled Carpenters on Business Volume.

HAVE YOU EVER, IN THE PAST YEAR, PAID OVERTIME TO SKILLED CARPENTERS BECAUSE OF ANY SHORTAGE IN THE MARKET ?

RESPONSE	SOUTHWEST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	1	12.5	19	36.5
No	6	75.0	32	61.5
Cannot Say	1	12.5	1	1.9
No Response to this Question	0	0.0	0	0.0

Table B-4.16 Overtime Payments.

WHAT PERCENTAGE OF HOURS WORKED BY CARPENTERS IS OVERTIME ?
Please Estimate.

QUESTION	SOUTHWEST REGION			STATEWIDE
	AVERAGE	MINIMUM	MAXIMUM	AVERAGE
Percentage of overtime hours worked by the carpenters	6.0 %	1.0 %	10.0 %	6.0 %

Table B-4.17 Estimated Overtime Hours.
(in percentage)

WOULD YOU HIRE MORE SKILLED CARPENTERS TO AVOID PAYING OVERTIME ?

RESPONSE	SOUTHWEST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	3	37.5	29	58.0
No	1	12.5	10	20.0
Cannot Say	4	50.0	11	22.0
No Response to this Question	0	0.0	2	*

Table B-4.18 More Skilled Carpenters versus Overtime.

IN YOUR VIEW, IS THE SHORTAGE OF SKILLED CARPENTERS DUE TO :

Use the following scale :
4. Very important reason
3. Important reason
2. Could be a reason
1. Not a reason at all

REASONS	SOUTHWEST REGION AVERAGE	STATEWIDE AVERAGE
General decline in craftsmanship	4.00	3.05
More emphasis on cutting cost than quality control	3.50	2.79
Lack of training programs	3.25	2.55
Low profile of labor unions	3.20	2.74
Low wage rates	2.75	2.17
Because there is greater emphasis on factory built components (trusses etc.), there is a decreased demand in the skills level of on site carpenters	2.67	2.30
Construction boom	2.33	2.68
Part time carpenters	2.00	1.80

Table B-4.19 Reasons for the Shortage of Skilled Carpenters.

WHAT PERCENTAGE OF CARPENTRY WORK DO YOU SUBCONTRACT ?

QUESTION	SOUTHWEST REGION			STATEWIDE
	AVERAGE	MINIMUM	MAXIMUM	AVERAGE
Percentage of Carpentry work Subcontracted	0.0 %	0.0 %	0.0 %	23.9 %

Table B-4.20 Percentage of Carpentry Work Subcontracted.

IF YOU SUBCONTRACT A MAJORITY OF YOUR CARPENTRY WORK, ARE THERE ENOUGH FIRMS AVAILABLE TO DO YOUR WORK ?

RESPONSE	SOUTHWEST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	0	0.0	5	38.5
No	0	0.0	4	30.8
Cannot Say	1	100.0	4	30.8
No Response to this Question	7	*	39	*

Table B-4.21 Availability of Firms to Subcontract Carpentry Work.

ARE YOU SATISFIED WITH THE QUALITY OF THE WORK DONE BY THE FIRMS TO WHOM YOU SUBCONTRACTED WORK ?

RESPONSE	SOUTHWEST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	0	0.0	7	46.7
No	1	100.0	5	33.3
Cannot Say	0	0.0	3	20.0
No Response to this Question	7	*	37	*

Table B-4.22 Quality of Subcontracted Work.

IN YOUR OPINION, IS THE SKILL OF THE CARPENTERS WHO WORK ON THE SUBCONTRACTED WORK ADEQUATE ?

RESPONSE	SOUTHWEST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	0	0.0	6	42.9
No	1	100.0	7	50.0
Cannot Say	0	0.0	1	7.1
No Response to this Question	7	*	38	*

Table B-4.23 Adequacy of Subcontracted Skills.

IN YOUR OPINION, WHAT PERCENTAGE OF THE SUBCONTRACTOR'S CARPENTERS ARE SKILLED CARPENTERS ?

QUESTION	SOUTHWEST REGION			STATEWIDE
	AVERAGE	MINIMUM	MAXIMUM	AVERAGE
Percentage of subcontractor's carpenters that are skilled	26.7 %	10.0 %	50.0 %	33.7 %

Table B-4.24 Percentage of Subcontractor's Skilled Carpenters.

ARE THE FOLLOWING TRAINING PROGRAMS MAKING ANY SUBSTANTIAL CONTRIBUTIONS IN SUPPLYING SKILLED CARPENTERS TO THE CONSTRUCTION INDUSTRY ?

Use the following scale :

4. To a large extent
3. To some extent
2. To a small extent
1. Negligible

TRAINING PROGRAM	SOUTHWEST REGION	STATEWIDE
	AVERAGE	AVERAGE
Union apprenticeship programs	4.00	3.29
On-the-job training	3.67	2.93
Vocational training centers	2.00	2.03
Open shop apprenticeship programs	2.00	1.69
Community college training	1.00	1.37

Table B-4.25 Contribution of the Training Programs.

IN YOUR OPINION, ARE THE FOLLOWING TRAINING PROGRAMS MAKING ANY SUBSTANTIAL CONTRIBUTIONS IN PRODUCING THE BEST CARPENTERS FOR YOUR NEEDS ?

Rank on a 1 - 4 scale :

4. Being the best
3.
2.
1. Being the worst

TRAINING PROGRAM	SOUTHWEST REGION AVERAGE	STATEWIDE AVERAGE
Union apprenticeship programs	3.33	3.25
On-the-job training	3.33	2.88
Vocational training centers	2.50	1.30
Community college training	2.50	1.13
Open shop apprenticeship programs	2.33	1.20

Table B-4.26 Performance of the Training Programs.

DO YOU THINK THAT CARPENTERS WORKING IN COMMERCIAL CONSTRUCTION NEED TO UNDERGO SOME CLASSROOM TRAINING PROGRAM ?

RESPONSE	SOUTHWEST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	6	85.7	40	80.0
No	0	0.0	4	8.0
Cannot Say	1	14.3	6	12.0
No Response to this Question	1	*	2	*

Table B-4.27 Need for Classroom Training.

WHAT LEVEL OF COMMUNICATIONS DO YOU HAVE WITH THE FOLLOWING TRAINING PROGRAMS ?

Use the following scale :

4. Very close
3. Close
2. Remote
1. Very remote

TRAINING PROGRAM	SOUTHWEST REGION AVERAGE	STATEWIDE AVERAGE
On-the-job training	3.25	2.46
Union apprenticeship programs	2.75	2.78
Community college training	1.25	1.13
Vocational training centers	1.00	1.30
Open shop apprenticeship programs	1.00	1.20

Table B-4.28 Communication Level Between Industry and Training Programs

RANK THE FOLLOWING AS THE BEST METHOD OF ESTABLISHING AN INDUSTRY/TRAINING PROGRAM LINKAGE .
(1,2,3,4; 4 being the most important)

STRATEGY	SOUTHWEST REGION AVERAGE	STATEWIDE AVERAGE
Written contact	3.75	2.74
Formal meeting of the two groups	3.67	3.14
Attending educational functions	2.67	2.84
Sitting on an advisory committee	2.33	2.62

Table B-4.29 Strategy for Industry / Training Program Linkage.

IN YOUR OPINION, SHOULD THE CARPENTER BE REQUIRED TO HAVE A LICENSE TO INSURE BETTER SKILLS AND STANDARDS ?

RESPONSE	SOUTHWEST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENT	PERCENT
Yes	1	12.5	14	26.9
No	3	37.5	30	57.7
Cannot Say	4	50.0	8	15.4
No Response to this Question	0	0.0	0	0.0

Table B-4.30 Licensing of Carpenters.

FROM YOUR EXPERIENCE, DO YOU BELIEVE THAT ILLEGAL ALIENS ARE BEING HIRED BY OTHER CONSTRUCTION FIRMS ?

RESPONSE	SOUTHWEST REGION		STATEWIDE	
	NUMBER OF RESPONDENTS	PERCENT	NUMBER OF RESPONDENTS	PERCENT
Yes	3	37.5	26	50.0
No	1	12.5	4	7.7
Cannot Say	4	50.0	22	42.3
No Response to this Question	0	0.0	0	0.0

Table B-4.31 Illegal Alien Carpenters.

IN YOUR OPINION, WHAT PERCENTAGE OF THE CARPENTERS IN FLORIDA ARE ILLEGAL ALIENS ?

QUESTION	SOUTHWEST REGION			STATEWIDE
	AVERAGE	MINIMUM	MAXIMUM	AVERAGE
Percentage of illegal alien carpenters	10.0 %	5.0 %	20.0 %	11.0 %

Table B-4.32 Estimated Percentage of Illegal Aliens.

APPENDIX C

STATISTICAL ANALYSIS COMPUTER PRINTOUT

FORMULA TO DETERMINE REQUIRED SAMPLE SIZE

$$n = \frac{(t/\Sigma)^2(P)(1-P)}{1+1/N[(t/\Sigma)^2(P)(1-P)-1]}$$

n = Sample Size Needed

t = Standard Normal Variable Based on Confidence Limit

Σ = Allowable Estimation Error

P = Population Proportion

N = Total Population

t = 1.96 when using 5 % Confidence Limit (95 % Confident)

Σ = .12 choice by researcher to use 12 % Estimation Error because distribution of questionnaires was handled by the union

P = .5 used in Practical Statistical Applications

N = 169 number of total union contractors in Florida

$$n = \frac{(1.96/.12)^2(.5)(1-.5)}{1+1/169[(1.96/.12)^2(.5)(1-.5)-1]}$$

n = **48 REQUIRED RESPONDENTS**

STATISTICAL ANALYSIS SYSTEM (SAS) COMPUTER PRINTOUT

The statistical analysis computer printout used for this report contains the data from all of the respondents as well as the statistical analysis. If the reader should wish to obtain a copy of this computer printout, please contact:

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