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ABSTRACT

A survey of Local 343-United Brotherhood of Carpenters & Joiners of America and the Manitoba Construction Labour Relations Association, Manitoba, determined the critical, essential, and important workplace skills of carpenters. A survey instrument was developed and mailed to 438 active members of Local 343; 110 surveys were completed and returned. Data were analyzed to determine the critical, essential, and important workplace literacy skills of carpenters based on the percentage and frequency of use. These results were then examined to make recommendations as to where the skill should be included in preparatory training for carpenters. Findings were as follows: members had a strong interest in taking workplace literacy courses relevant to the trade; alternative methods of course delivery needed to be explored to meet the needs of carpenters outside of Winnipeg; reading, computation, and communication skills were necessary trade skills; demands placed on carpenters' workplace literacy skills increased as the level of responsibility increased; workplace literacy skills used by a significant number of individuals on an infrequent basis should not be overlooked; some workplace literacy skills were used primarily by a particular category of carpenter; and common trade literacy skills needed to be included in the preparatory training of carpenters. (Appendixes include the survey, cover letter, and use and frequency use tables for reading, mathematics, and communication.) (YLB)

IMPROVING JOB SITE SKILLS PROJECT

Local 343 United Brotherhood of Carpenters & Joiners of America
&
Construction Labour Relations Association of Manitoba

Carpenter Membership Survey Report

by
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October 1993

Basic Education in the Workplace
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EXECUTIVE SUMMARY

The *Improving Job Site Skills Project* is a joint initiative of Local 343 -United Brotherhood of Carpenters & Joiners of America and the Manitoba Construction Labour Relations Association, funded by the Manitoba Basic Education in the Workplace Steering Committee. The project had three main components:

- a report on a survey of Local 343 's membership determining the critical, essential and important workplace skills of carpenters;
- a report about workplace literacy skills needed by carpenters on job sites based on employers' perceptions, interviews and on site visits ;
- a report based on carpenters' perceptions of workplace literacy skills needed on the job sites.

A summary of the findings and recommendation relative to this report *Carpenter Membership Survey* follows.

Background

A survey instrument was developed and mailed to 438 active members of Local 343. One hundred and ten (110) surveys were completed and returned. The data were analysed to determine the critical, essential and important workplace literacy skills of carpenters based on the percentage and frequency of use. (See page iii for summary table). These results were then examined to make recommendations as to where the skill should be included in preparatory training for carpenters. (see page iv for summary table).

Findings

- Overall the respondents reflected the composition of the carpenter membership, except that disproportion of certified carpenters replied to the survey.
- Ninety percent (90%) of the respondents had completed at least Grade 9, the minimum educational requirement for the carpentry apprenticeship program in Manitoba. Eighty-one percent (81%) had taken some form of trades training.
- There was strong interest on behalf of the members in taking workplace literacy courses relevant to the trade.
- There needs to be an exploration of alternative methods of course delivery to meet the needs of carpenters outside of Winnipeg.
- Reading, computation and communication skills are necessary trade skills.
- The demands placed on carpenters' workplace literacy skills increase as the level of responsibility increases.
- Care must be taken not to overlook those workplace literacy skills which are used by a significant number of individuals, but are not used frequently, such as door/hardware schedules.
- Some workplace literacy skills, such as completing time cards, are used primarily by a particular category of carpenter, e.g. apprentice or supervisor.
- Common trade literacy skills need to be included in the preparatory training of carpenters and should be taught in a functional context.
- Vocational education courses have an important role to play in the development of trade literacy and applied basic skills.
- An instructor's guide for integrating workplace literacy skills into trade training should be developed.

Workplace Literacy Skills Summary

	Critical	Essential	Important
Reading	Safety Signs/Posters Blueprints	Hazard Labels/WHMIS Drawings/Sketches Safety Regulations Symbols	Company Regulations Memo/Notes Operating Instructions

	Critical	Essential	Important
Mathematics	Add/Subtract Numbers Use a Tape Measure Measure in Feet & Inches Multiply/Divide Numbers Use a Framing Square Work with Right Angles Add/Subtract Fractions Measure in Metric Work with Depth of Cut	Add/Subtract Decimals Calculate Area Use 3-4-5 Formula Work with Rectangles Calculate Square Footage Multiply/Divide Fractions Calculate Angle on Miter/Table Saw Work with Perpendicular Count How Many Multiply/Divide Decimals Estimate Material Estimate Time	Calculate Perimeter Work with Triangles Use Leveling Rod Use Survey Stick Convert Imperial to Metric Calculate Volume Convert Fractions to Decimals Work with Tolerance Use Calculator

	Critical	Essential	Important
Communication	Follow Directions Ask Questions Work with Other Trade Groups	Give Directions Identify Defects/Damages Keep Track of Hours Use Hand Signals	Take Messages Make Drawings/Sketches Speak in Small Groups Coordinate work with Other Trades Speak with Outside Groups Fill in Forms Leave Notes/Memos

	Trade Literacy Skills	Applied Basic Skills
Reading	Safety Signs/Posters Blueprints Hazard Labels/WHMIS Drawings/Sketches Safety Regulations Symbols Company Regulations Operating Instructions	**Vocational Literacy Skills** Memo/Notes

	Trade Literacy Skills	Applied Basic Skills
Mathematics	Use a Tape Measure Measure in Feet & Inches Use a Framing Square Work with Right Angles Add/Subtract Fractions Work with Depth of Cut Use 3-4-5 Formula Work with Rectangles Calculate Square Footage Calculate Angle on Miter/Table Saw Work with Perpendicular Estimate Material Estimate Time Work with Triangles Use Leveling Rod Use Survey Stick Convert Imperial to Metric Work with Tolerance	Add/Subtract Numbers Multiply/Divide Numbers Measure in Metric Add/Subtract Decimals Calculate Area Multiply/Divide Fractions Count How Many Multiply/Divide Decimals **Vocational Literacy Skills** Calculate Perimeter Calculate Volume Convert Fractions to Decimals Use Calculator

	Trade Literacy Skills	Applied Basic Skills
Communication	Work with Other Trade Groups Give Directions Identify Defects/Damages Keep Track of Hours Use Hand Signals Make Drawings/Sketches Speak in Small Groups Coordinate work with Other Trades	Follow Directions Ask Questions **Vocational Literacy Skills** Take Messages Speak with Outside Groups Fill in Forms Leave Notes/Memos

INTRODUCTION

BACKGROUND

In the construction industry, carpenters move from job site to job site within the province, and across the country. Additionally, they often perform many different duties of the occupation on the same job site, for example concrete forming and finish carpentry. Regardless of these variations, there are certain common workplace literacy skills needed to carry out job duties and tasks. However to date, there has been no comprehensive study in Manitoba to determine the reading, writing, mathematical and oral communication skills needed by carpenters to perform their craft.

In order to determine these skills, the United Brotherhood of Carpenters and Joiners of America (U.B.C.& J.A.) Local 343 and The Construction Labour Relations Association of Manitoba (CLRA) initiated the study *Improving Job Site Skills* to determine the workplace literacy skills of union carpenters in Manitoba.

This project was funded by the Manitoba Basic Education in the Workplace Steering Committee (BEWSC) and was overseen by a project team. The team consisted of two members from Local 343, Pat Martin and Laurie Todd, two members from the CLRA, Kam Gajdosik and Jerry Wolfe, Sue Turner (Manitoba Literacy and Continuing Education Office) and Janis McKeag (Workplace Literacy Consultant).

This report presents the results from the survey sent to all carpenter members of Local 343. Reports on other components of the study, *Northern Industrial Site Visit*, and *Workplace Literacy Skills of Carpenters in Manitoba* are available by contacting Local 343 or BEWSC.

PROJECT GOALS AND OBJECTIVES

The primary goal of the Improving Job Site Skills Project was to determine the necessary workplace literacy skills of carpenters on the job site and to develop recommendations for programs to improve these skills.

PROJECT OBJECTIVES

In order to meet the goal of the project the following objectives were established:

1. Conduct an organization needs assessment (ONA) to determine the workplace literacy tasks performed by carpenters on the job site;

2. Develop an instrument to survey carpenters in Manitoba about workplace literacy skills;

3. Develop an instrument to survey employers to assess their perceptions about workplace literacy skills needed by carpenters on the job site;

4. Determine the critical, essential, and important workplace literacy skills of carpenters ;

5. Determine if differences of sub groups of carpenters (aboriginal peoples, women, immigrant/ new Canadians, rural versus urban, and north versus south) exist; and

6. Make recommendations for workplace program development.

DEFINITIONS & ABBREVIATIONS

For this project, the following definitions of terms were used.

CTITF: Carpentry Trade Improvement Trust Fund is a joint labour management fund established in 1970, through collective bargaining to promote training in the membership of Local 343.

Apprentice: a person at least 16 years of age, who enters into a written agreement with an employer to learn a designated trade (The Apprenticeship and Trades Qualifications Act of Manitoba).

Certified: indicates the person possesses a provincial or inter provincial journey ticket.

Non-Certified: indicates a person with experience in the carpentry field who does not possesses a journey ticket.

Foreman: is used to describe a person who carries out supervisory work. It refers to both male and female personnel. It is used in this report as there has been no satisfactory gender neutral term developed which adequately reflects the duties of the position. The terms, group leader, lead hand, crew leader or supervisor have other meanings in this occupation.

Workplace Literacy Skills: the reading, writing, mathematical and communication skills needed to carry out job related duties and tasks.

Critical Workplace Literacy Skills: those workplace literacy skills used by 90% of the respondents on daily or weekly basis 80% of the time.

Essential Workplace Literacy Skills: those workplace literacy skills used by 75% of the respondents on daily or weekly basis 65% of the time.

Important Workplace Literacy Skills: those workplace literacy skills used by 60% of the respondents on daily or weekly basis 50% of the time.

INSTRUMENT DEVELOPMENT

The survey instrument used for this study was based on the work of McKeag (1991), McKeag (1993), the BC Construction Industry Skills Improvement Council (1993), and with additional information added by Laurie Todd, Training Coordinator, CTITF Training '93.

A draft of the instrument, developed by the consultant, was reviewed by the Training Coordinator. With minor modifications this draft was taken to the project team for their input. It was decided to group various reading, mathematics and communication skills into sections that logically went together on the job site.

The revised draft was tested with four carpenters. The consultant sat with each carpenter as they worked through the survey and made note of any questions, concerns or points that were not clear. On the basis of the feedback from this group, the layout of the survey was modified.

The revised survey was then piloted tested with a group of 12 carpenters. In this case, the carpenters were given the covering letter and the survey and were then left alone to complete it. After they had completed the survey, the consultant asked for feed back about ease of use, and comments on the layout, format and content. The sole concern was the lack of a clear statement as to how to complete the survey if they were out of work.

With the inclusion of a statement about "Please complete the survey as if you were working", the instrument was adopted for use in this study. A copy of the final instrument may be found in Appendix 1.

The covering letter that accompanied the survey was developed in English. This was translated into the main other languages of members in Manitoba - French, Italian and Portuguese. A copy of the letter may be found in Appendix 2.

DATA COLLECTION

A package that included the covering letter, a copy of the survey and a stamped, self addressed return envelope was mailed to each of the 438 active members of Local 343. The return envelopes were coded in a manner similar to Local 343's mail in voting procedure.

Eleven surveys were undeliverable. One hundred and ten (110) surveys were completed and returned. This gave a 26% response rate of the accessible population. A reminder to complete and return the forms was published in the Union's April 19, 1993 newsletter.

DATA ANALYSIS

Descriptive statistics were used to analyze the data. The data were coded and the FASTAT (Fast Statistics for the Mac, 1989) program was used. Because there was no existing database for workplace literacy skills of carpenters in Manitoba, the calculated percentages and frequencies for affirmative (yes) response and high frequency of use were tabulated and examined for each workplace literacy skill.

To determine core workplace literacy skills, a set of criteria was established. These were based on the degree of use as indicated by the percentage of affirmative (yes) responses and the frequency of use as indicated by the combined percentage of daily and weekly use.

Critical Workplace Literacy Skills

A skill was deemed critical if the percentage of affirmative responses $\geq 90\%$ and the combined percentage for usage on a daily or weekly basis, $\geq 80\%$.

Essential Workplace Literacy Skills

If the affirmative response rate was $\geq 75\%$ and the usage was $\geq 65\%$, then the skill was deemed essential.

Important Workplace Literacy Skills

If the affirmative was ≥ 60% and the usage was ≥ 50%, then the skill was deemed important.

	% of Yes Responses	% Use Daily & Weekly Combined	Criteria Level
Workplace Literacy Skill	≥ 90	≥ 80	Critical
	≥ 75	≥ 65	Essential
	≥ 60	≥ 50	Important

DATA REPORTING

In reporting the results, the total for percentages often exceeded or did not total a 100%. This was due either to multiple responses or lack of responses given for a particular question.

The instrument had three main sections.

- The first section was designed to collect demographic data on the background of the respondents, including their training and educational experiences.
- The second collected data on the use and frequency of use of selected job site reading, mathematical and communication skills of carpenters.
- The third section was designed to gather information for potential program development.

SURVEY RESULTS

DEMOGRAPHIC BACKGROUND

Gender

Only one respondent was female. This was representative as only two females were registered with the union at the time of the survey.

Age

The distribution by age is shown in Table 1. The numbers in the age groups adequately reflect the distribution of the age of the members of the union.

First Language

Seventy-five (75%) of the respondents indicated that English was their first language, two indicated that French was their first language. Ten individuals indicated another language as a first language. For 13 responses English and another language were marked as a first language. In this case, it was not clear as to which language was their first language and which was their second language. A summary of results is shown in Table 2.

Years in the Trade

The number of years in the trade of carpentry is shown in Table 3. The numbers were fairly evenly distributed over the older 4 groups. This reflected the age distribution of the population.

Table 1 Age Distribution

Age Group	Number	Percentage
16 - 24	4	3.5
25 - 33	28	25.5
34 - 42	34	31.0
43 - 50	25	23.0
50 +	19	17.0

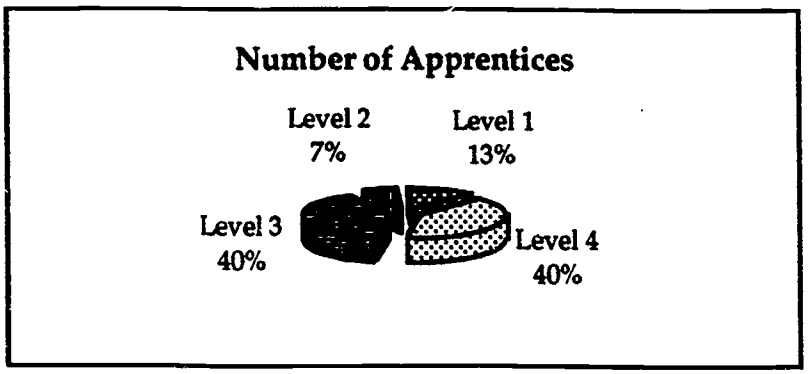
Table 2 First Language

First Language		Number	Percentage
English		**83**	**75.0**
French		**2**	**1.8**
English + Another		**13**	**12.0**
French	4		
Croatian	2		
German	2		
Cree	1		
Danish	1		
Dutch	1		
Portuguese	1		
Russian	1		
Other First Language		**10**	**9.0**
Italian	3		
Portuguese	2		
Croatian	1		
Czechoslovakian	1		
Dutch	1		
German	1		
Slovenian	1		

Certification/Qualifications

The summary of the respondents' certification is presented in Table 4. Since the percentage of certified carpenters in Manitoba was 44%, a disproportionate percentage (63%) of certified carpenters replied to the survey. Therefore, the sample did not reflect the certification distribution of the membership.

Thirteen percent (13.6%) of the respondents were apprentices. The distribution across levels was : Level 4 (6); Level 3 (6); Level 2 (1); Level 1 (2).



Sixty-three percent (63.6%) respondents stated they had Journeyman tickets and 23% indicated they were non-certified carpenters.

Of the 70 certified carpenters who responded, Inter Provincial tickets were held by 68. For those who provided information concerning the province where they received their ticket, the distribution was:

Manitoba	44	Alberta	2
Saskatchewan	1	British Columbia	4.

The distribution for the decade in which Inter Provincial tickets were obtained was as follows:

1950s	1	1980s	15
1960s	5	1990s	13.
1970s	13		

Main Type of Work Done

The main type of work is shown in Table 5. The total number exceeds 100% as many respondents marked more than one type of work listed.

Other types of work added to the list included:

Cabinet making	4	Inspection	1
Superintendent/Supervision	3	Drywall	1
Instructor	2	Plumbing & Wiring	1
Maintenance	2	Shoring	1
Roofing	2	Steel Stud	1
Rigging	2	Rebar	1
Surveying	1	Welding	1.

Place Where Usually Work

The majority, 80%, of the respondents worked out of Winnipeg.

Other places worked included:

Anywhere	5	Ontario	2
Northern Canada	5	Around Thompson	1
Flin Flon	4	Around Winnipeg	1
Western Canada	4	Gillam	1
Anywhere in Manitoba	3	Reserve	1
Northern Manitoba	3	Saskatchewan	1
Eastern Manitoba	2	The Pas	1.
British Columbia	2		

Table 3 Years in the Trade

Years	Number	Percentage
1 - 5	8	7.3
6 - 10	25	22.7
11 - 15	24	21.8
16 - 20	24	21.8
20+	29	26.4

Table 4 Certification/Qualification

Qualifications	Number	Percentage
Apprentice	15	13.6
Journeyman Ticket	70	63.6
Non-Certified	25	22.7

Table 5 Type of Work

Type of Work	Number	Percentage
Concrete Forming	90	81.8
Framing	58	52.7
Finishing	54	49.0
Scaffolding	30	27.3
Other	27	24.5

Table 6 Place Where Usually Work

Place	Number	Percentage
Winnipeg	88	80.0
Brandon	6	5.5
Thompson	7	6.4
Other	36	32.7

DISCUSSION OF DEMOGRAPHICS RESULTS

- A disproportionate number of certified carpenters responded to the survey. The actual percentage of certified carpenters in the union was 44, the percentage replying was 63.

- The need to reinforce the portability of skills was supported. While the majority of respondents (80%) worked in and around Winnipeg, 33% of the respondents also worked elsewhere.

- The trend seemed to be for younger aged (< 43) members to obtain trade qualifications.

EDUCATIONAL BACKGROUND

High School Background

Fifty-five (55%) percent of the respondents stated they had completed Grade 12. Ninety percent had completed at least Grade 9, the minimum educational entrance requirement for the apprenticeship program in carpentry. The results are shown in Table 7.

The types of courses taken in high school are presented in Table 8.

Sixty-six (66%) of the respondents attended high school in Manitoba. Of the remaining, 12% attended school in other provinces, and 20% attended in other countries. The results are presented in Table 9.

In Manitoba, the division between Winnipeg and rural was about equal, with 48% attending in Winnipeg and 52% in other locations. The Manitoba locations are presented in Table 10. The other locations are presented in Table 11.

Table 7 Highest Grade Completed

Grade	Number	Percentage
12	61	55.5
11	17	15.5
10	22	20.0
9	7	6.4
8	2	1.8
5	1	1.0

Table 8 Type of Courses Taken in High School

Course Type	Number	Percentage
General	47	42.7
University Entrance	20	18.0
Vocational	16	14.5
General/Vocational	11	10.0
General/Business	3	2.7
Business	2	1.8
General/University	2	1.8
Business/University	1	1.0
Vocational/University	1	1.0
Other	3	2.7

Table 9 Location of High School

Location	Number	Percentage
Manitoba	73	66.3
Other Provinces	13	11.8
Other Country	22	20.0
Other	3	2.7

Table 10 Manitoba Locations of High School

Location	Number	Location	Number
Winnipeg	35	Arnes	1
St. Malo	4	Carman	1
Dauphin	3	Churchill	1
Brandon	2	FlinFlon	1
Beausejour	2	Erikson	1
Otterburne	2	The Pas	1
Selkirk	2	Oakbank	1
Steinbach	2	Lundar	1
Thompson	2	Warren	1
Gillam	1	Gimli	1
Kelwood	1	Lac du Bonnet	1
Portage la Prairie	1	St. Jean Baptiste	1
St. Anne	1	St. Claude	1
St. Pierre	1	Whitemouth	1

Table 11 Other Locations of High Schools

Location	Number	Location	Number
Other Provinces	**13**	**Other Country**	**23**
British Columbia	5	Croatia	3
Saskatchewan	4	Denmark	2
Ontario	2	England	2
Newfoundland	1	Germany	2
Other Province	1	Holland	2
		Italy	2
		Jamaica	2
		Portugal	2
		USA	2
		Czechoslovakia	1
		Guyana	1
		Scotland	1
		Slovenia	1

TRADES TRAINING BACKGROUND

Eighty-one percent (81%) of the respondents indicated that they had taken some form of trades training. Trades training included vocational or industrial courses taken in the regular school system, apprenticeship courses, pre-employment courses, and other self identified trades training. The summary results are presented in Table 12.

Vocational Courses In High School

The types of vocational courses in high school included:

Woods/Woodworking	9	Building Construction	2
Carpentry/Cabinet Making	6	Electrical	1
Industrial Arts	5	Mechanics	1
Drafting	3	Survey Technology	1
Welding	2	Industrial Foods	1
Metals	2.		

Other high school courses mentioned : Shipbuilding (Holland); Bricklaying (Czechoslovakia); and Mechanical Technology (Croatia).

Pre-employment Courses

Pre-employment courses included training at a community college. The types of Pre-employment courses mentioned were :

Carpentry	9
Welding	2
Small Engine Repair	1
Electrical	1
Millwright	1.

Apprenticeship Courses

Carpentry apprenticeship courses were taken at a variety of places :

Canada	**39**	**Other Countries**	**5**
Manitoba	31	Czechoslovakia	1
British Columbia	4	Denmark	1
Alberta	3	England	1
Saskatchewan	1	Germany	1
		Scotland	1.

In Manitoba, the apprenticeship courses were taken at different community colleges:

Red River Community College (RRCC)	26
Keewatin Community College (KCC)	3
RRCC and another college	2.

On-the-job Training

Only two respondents indicated that they had received any specific on-the-job training beyond regular apprenticeship training: rigging and surveying.

Other Trades Training

Nine respondents indicated that they had taken or received other types of trades training. The courses included :

Carpentry/Cabinetmaking	3	Drafting	1
Welding	1	First Aid	1
4 - H	1	Building Technician	1
High Voltage Splicer & Cableman	1	Blueprint Reading	1.

Other Training

Thirty-seven (37) individuals indicated that they had taken other types of training on their own. The results are presented in Table 13. Trade courses, included: Locksmith, Upholstery, Housewiring, Machinist, Electronics, and Auto Mechanics.

Five (5) respondents indicated specific training in other areas: apprenticeship in Antique Furniture Restorer (England); apprenticeship in Scotland; a Journeyman Ticket (Slovenia and Denmark) and a MCCR (Ministry of Consumer & Corporate Relations, Ontario) Certified Welding.

Table 12 Trades Training

Type	Number	Percentage
Vocational in High School	28	25.0
Pre-employment Courses	21	19.0
Apprenticeship Program	66	60.0
On-the-job	19	17.0
Other	2	1.8

Table 13 Other Training/Education

Type	Number
Drafting	8
Welding	7
Blueprint Reading	3
Computer	3
Small Business Courses	5
Other Trade Courses	7
Building Construction Technology	5
Building Materials	4
Upgrading/GED	3
ESL	1

Union Local 343 /Construction Labour Relation Association Training

Forty-seven percent (47%) of the respondents indicated they had taken courses sponsored by the Carpentry Trade Improvement Trust Fund. The types of courses and the numbers are presented in Table 14.

Employer Training

Thirty-six percent (36%) of the respondents indicated that they had received training with an employer. The most frequent type of training was Foreman. The results are presented in Table 15.

University

While a specific question about university was not asked, eight respondents indicated that they had attended university. Of these, two had Bachelor of Science degrees and one had a Bachelor of Arts. One had completed two years of an engineering program; another two years of another program. First year of arts and first year of science were completed by two other respondents.

Table 14 CTITF Sponsored Training

Type of Course	Number	Type of Course	Number
Blueprint Reading	12	Welding	9
Scaffolding	6	Carpentry Refresher	5
Blueprint Reading Advanced	5	Rigging	4
Trade Qualification	4	Hardware Installation	3
Upgrading	3	First Aid/St. John's	2
Forming	2	Land Survey	1
Metric	1	Supervisory	1
Cabinet making	1	Cranes	1
Workplace Safety & Health	1	UIC/Workers' Compensation	1

Table 15 Employer Offered Training

Type of Training	Number	Type of Training	Number
Foremen	8	Superintendent	3
Safety Training	3	Management Skills	2
WHMIS	1	Rules	1
CPR/First Aid	1	Defensive Driving	1
Project Management	1	Instructor	1

ADDITIONAL COMMENTS

Comments concerning schooling or training are presented in categories below.

Apprenticeship

- Course offered here very informative but tend to offer very little about the commercial end of carpentry. Also I think the time in school should be lengthier (more weeks) pushed.
- RRCC apprenticeship training was far below standards set in other provinces.
- Unfortunately the apprenticeship courses are out dated by at least 3-5 years.
- Thoroughly enjoyed my apprenticeship classroom training, my practical was limited to seasonal residential construction. I lack experience in heavy construction, concrete forming, etc.
- Red River needs to teach more modern things than check rail windows, rafter framing, more concrete forming should be taught.

School Experience

- Lack of knowledge of the English Language early on hampered my training in the beginning.
- I left school, went to work as a laborer on construction.
- I was on school presently until June 93 and maybe I will go to continue until finish Business Administration at RRCC. I almost finish my Grade 12 at Adult Education Centre.

Qualifications from other Countries

- In Slovenia, I was considered a Journeyman after my schooling.
- Apprenticeship with Ticket in Denmark.
- I served a 5 year apprenticeship in England.

Other

- I have instructed carpenters in rigging at Selkirk College in Castelgar BC.
- If you don't attend the apprenticeship course and receive your ticket you are not a carpenter. If you need a special course to understand your trade - go pump gas. Give the $20 an hour back to the carpenters who deserve it.
- If the union would offer Correspondence courses, I would use them.

DISCUSSION OF EDUCATIONAL AND TRADES TRAINING RESULTS

- More younger aged (under 43 years old) members (37%) had completed Grade 12 than older members (16 %).

- There appeared to be a need to examine the issue of recognition of trades qualifications from other countries. All of the respondents who had completed formal apprenticeships in other countries indicated they had to re-qualify in Canada. Some stated this was frustrating.

- Thirty-six percent (36%)of the respondents indicated they had received training from an employer. The most commonly stated type of training was Foreman training.

- Concerns were expressed about apprenticeship courses offered in Manitoba community college settings. These included:
  - the lack of preparation for the commercial end of carpentry,
  - the out-datedness of the current curriculum; and
  - the relevance of some of the components of the Manitoba apprenticeship curriculum.

- It would appear to be important to maintain vocational/industrial arts courses in the junior and senior high school system, as thirty-two percent (32%) of the respondents indicated they had taken these type of courses.

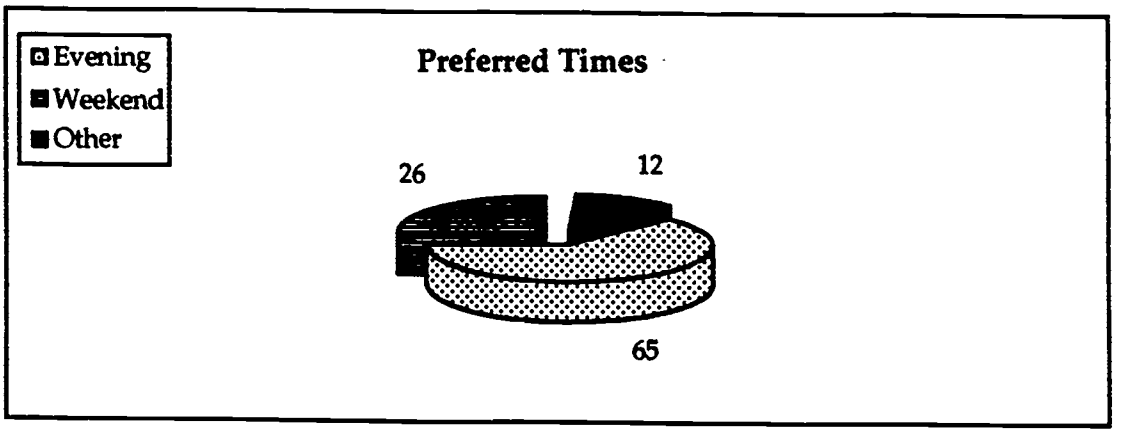
PROGRAM FORMAT

Interest in Taking Courses

Eighty-one percent (81%) of the respondents indicated that they would be interested in taking courses.

Preferred Times for Courses

Sixty-five (65) respondents indicated evening courses; 26 weekend courses, and 12 other times. Other times included: when not working/on layoff (2), in the winter (2), open/flexible (6), and weekdays (1).



Type

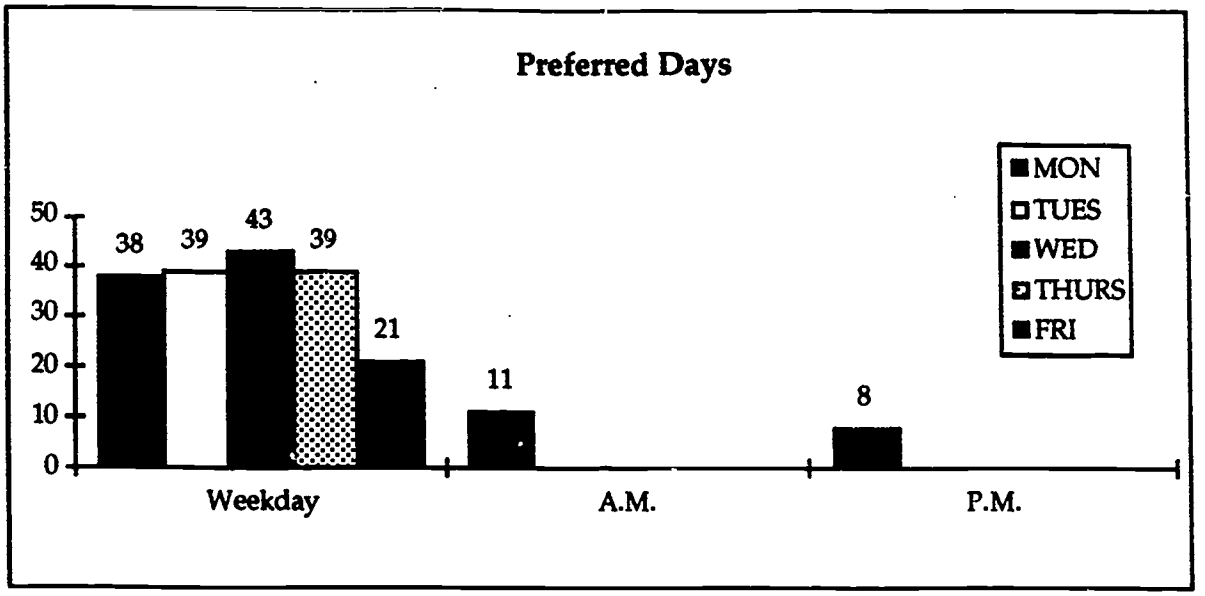
Sixteen (16) indicated computer assisted would be a preferred method of delivery, while correspondence courses would be suitable for 21 respondents. Three respondents indicated they would like continuous full day (7-8 hr.), full time courses Monday to Friday.

Schedule

Courses given once a week was the preference for 37 respondents; courses twice a week for 36.

Preferred Days and Times

The preferred days and times are shown below.



Location

Almost half of the respondents (48%) would like to take courses in a school setting, and 47% would take course in union hall. Twelve respondents indicated that on the job site would be preferred.

Suggestions for other places included:

home	4	any suitable place/hall	2
Brandon	1	Thompson	1
a training centre	1	a local community college	1

Other Comments

The union has offered excellent courses - transit level, rigging, door/hardware, cutting & welding, but these need to be offered in the Brandon area.

Types of Course

The survey presented seven options for courses. These results are presented in Tables 16 . Twenty (20) individuals added other suggestions for courses. These are presented in Table 17.

Table 16 SUGGESTED COURSES

Course	Number
Math	36
GED/Upgrading	32
Speaking	25
Writing/Spelling	21
Metric Conversion	16
Reading	15
ESL	10

Table 17 OTHER COURSE SUGGESTIONS

Course	Number
Supervisory Skills	4
Small Business Management	3
Computer	3
Blueprint Reading	2
Estimation	1
Take -Offs	1
French	1
Roofing Tables	1
Transit/Level	1
Rigging	1
Door & Hardware Schedules	1
Cutting & Welding	1

WORKPLACE LITERACY SKILLS

WORKPLACE LITERACY SKILLS

Establishment of Criteria

In this section, a set of criteria was established to determine the **critical, essential** and **important** workplace literacy skills for carpenters. The establishment of criteria was based on the assumption that the frequency of use and the frequency of performance influence the development and maintenance of skills necessary for proficient performance by a carpenter (McKeag, 1991).

The establishment of this criteria allowed the project team to weigh the need of each skill and to make recommendations as to where it should be included in preparatory training. It would also lead to the development of upgrading or refresher workplace basic education programs for carpenters already in the field to met changing requirements and new technological developments.

To determine the critical, essential and important workplace literacy skills. The degree of use as indicated by the percentage of affirmative (yes) responses and the frequency of use were calculated . The figures for each workplace literacy skill may be found in Appendix 3. These figures were then used to determine if the skill met any of the conditions for the following criteria.

1) If the percentage of affirmative responses was $\geq 90\%$ and the combined daily or weekly usage was $\geq 80\%$, then the skill was deemed **critical.**

2) If the percentage of affirmative responses was $\geq 75\%$ and the combined daily and weekly usage was $\geq$ 65%, then the skill was deemed **essential.**

3) If the percentage of affirmative responses was $\geq 60\%$ and the combined daily and weekly usage was $\geq 50\%$, then the skill was deemed **important.**

To facilitate the categorization of workplace literacy skills into educational areas of preparatory training, the project team used the following terms.

1) *Applied Basic Skills* are reading, writing, mathematical and oral communication skills which should be a part of the regular school system and should be integrated and reinforced in industrial/technology and vocational education programs.

2) *Trade Literacy Skills* are reading, writing, mathematical and oral communication skills which are more specific to the carpentry trade and need to be introduced in preparatory training, and strongly emphasized in the first level of apprenticeship with on-going reinforcement throughout apprenticeship. These skills can also be the foundations for trade upgrading programs. The teaching of these skill will be in a functional context.

3) *Vocational Literacy Skills* are reading, writing, mathematical and oral communication skills which should be taught in pre-employment courses either in community college setting or in vocational and industrial/technology courses in the secondary school setting.

Critical Workplace Literacy Skills

A workplace literacy skill was deemed critical if 90% of the respondents used the skill on a daily or weekly basis at least 80% of the time. The results are presented in Table 18.

Based on this criteria, the following skills were deemed critical and have been categorized as to where the emphasis should be for preparatory training. The results are presented in Table 19.

Table 18 CRITICAL WORKPLACE LITERACY SKILLS

	Trade Literacy Skills	Applied Basic Skills
Reading	Safety Signs/Posters Blueprints	
Mathematics	Use a Tape Measure Measure in Feet & Inches Use a Framing Square Work with a Right Angle Work with Depth of Cut	Add/Subtract Numbers Add/Subtract Fractions Multiply/Divide Numbers Measure in Metric
Communication	Work with Other Trade Groups	Ask Questions Follow Directions

Table 19 CRITICAL WORKPLACE LITERACY SKILLS		
Reading	**Use %**	**Frequency %**
Safety Signs/Posters	94	86
Blueprints	92	87
Mathematics	**Use %**	**Frequency %**
Add/Subtract Numbers	100	94
Use a Tape Measure	100	93
Measure in Feet & Inches	99	93
Multiply/Divide Numbers	99	93
Use a Framing Square	97	86
Work with Right Angles	96	88
Add/Subtract Fractions	93	91
Measure in Metric	92	82
Work with Depth of Cut	90	86
Communication	**Use %**	**Frequency %**
Follow Directions	96	93
Ask Questions	96	91
Work with Other Trade Groups	92	85

Essential Workplace Literacy Skills

A workplace literacy skill was deemed essential if at least 75% of the respondents used the skill on a daily or weekly basis at least 65% of the time. Using this criteria, the skills found in Table 19 were found to be essential.

The categorization for educational programs is shown in Table 18. In addition to the applied basic skills being taught in the regular school system, they may need to be upgraded and reinforced during the in-school portion of apprenticeship training or vocational courses. In all cases the skill workplace literacy skill training should be taught in a functional context.

Table 20 ESSENTIAL WORKPLACE LITERACY SKILLS

	Trade Literacy Skills	Applied Basic Skills
Reading	Hazard Labels/WHMIS Safety Regulations Drawings/Sketches Symbols	
Mathematics	Work with Rectangles Calculate Square Footage Use 3-4-5 Formula Work with Perpendicular Estimate Material Estimate Time Calculate Angles on Miter/Table Saw	Calculate Area Multiply/Divide Fractions Add/Subtract Decimals Count How Many Multiply/Divide Decimals
Communication	Give Directions Identify Defects/Damages Keep Track of Hours Use Hand Signals	

Table 21 ESSENTIAL WORKPLACE LITERACY SKILLS

Reading	Use %	Frequency %
Hazard Labels/WHMIS	91	67
Drawings/Sketches	89	89
Safety Regulations	89	78
Symbols	85	85
Mathematics	**Use %**	**Frequency %**
Add/Subtract Decimals	89	86
Calculate Area	89	71
Use 3-4-5 Formula	88	72
Work with Rectangles	88	70
Calculate Square Footage	87	68
Multiply/Divide Fractions	86	83
Calculate Angle on Miter/Table Saw	86	71
Work with Perpendicular	85	83
Count How Many	84	89
Multiply/Divide Decimals	83	84
Estimate Material	83	83
Estimate Time	82	93
Communication	**Use %**	**Frequency %**
Give Directions	84	85
Identify Defects/Damages	79	67
Keep Track of Hours	78	91
Use Hand Signals	75	69

Important Workplace Literacy Skills

A workplace literacy skill was deemed important if 60% of the respondents used the skill on a daily or weekly basis at least 50% of the time. Using this criteria, the skills listed in Table 23 were deemed important.

The categorization for educational programs is presented in Table 22. At this level, applied skills are more specialized in nature. They should be integrated into vocational training programs. Trade literacy skills need to be taught in preparatory training such as vocational courses or pre-employment courses and should be reinforced during the latter part of apprenticeship training. The teaching of skills should be done in a functional context with emphasis placed on how to use them on a job.

Table 22 IMPORTANT WORKPLACE LITERACY SKILLS

	Trade Literacy Skills	Vocational Literacy Skills
Reading	Company Regulations Operating Instructions	Memo/Notes
Mathematics	Work with Triangles Convert Imperial to Metric Use Leveling Rod Use Survey Stick Work with Tolerance	Calculate Perimeter Calculate Volume Convert Fractions to Decimals Use Calculator
Communication	Make Drawings/Sketches Take Messages Speak with Outside Groups Coordinate work with Other Trades	Speak in Small Groups Fill in Forms Leave Notes/Memos

Table 23 IMPORTANT WORKPLACE LITERACY SKILLS		
Reading	**Use %**	**Frequency %**
Company Regulations	80	62
Memo/Notes	65	81
Operating Instructions	64	53
Mathematics	**Use %**	**Frequency %**
Calculate Perimeter	85	60
Work with Triangles	83	63
Use Leveling Rod	81	63
Use Survey Stick	75	50
Convert Imperial to Metric	73	71
Calculate Volume	72	60
Convert Fractions to Decimals	70	67
Work with Tolerance	65	84
Use Calculator	64	71
Communication	**Use %**	**Frequency %**
Take Messages	70	85
Make Drawings/Sketches	69	81
Speak in Small Groups	66	83
Coordinate work with Other Trades	65	75
Speak with Outside Groups	65	68
Fill in Forms	62	55
Leave Notes/Memos	60	72

Anomalies

High Use- Low Frequency Skills

In this case, the workplace literacy skill was used by at least 75% of the respondents, but it was not used frequently enough to meet the established criteria. These are presented in Table 24.

In general, these are skills which are not used as frequently on the job as others, but when they do, they are used by a high number of people. Therefore, *Installation Directions and Door/Hardware Scheduled* should be included in apprenticeship training, and the other skills related to union material should be included in courses developed for union members.

Table 24 HIGH USE -LOW FREQUENCY

Reading	**Use %**	**Frequency %**
Health & Welfare	92	2
Pension Information	87	1
Collective Agreement	85	5
Installation Directions	82	42
Training Material	79	7
Door/Hardware Schedule	75	37
Mathematics	**Use %**	**Frequency %**
Work with Curves/Arcs	85	45
Use a Transit	82	42
Calculate Perimeter	77	46

Possible explanations for high use-low frequency workplace literacy skill are listed below.

- *Installation directions* for hardware and other items may be the given to the foreman or lead hand to read, and it will be this person's responsibility to convey these directions orally to other carpenters. Another explanation may be that this type of reading does not occur as frequently on the job site, but when it does, it is used by a number of carpenters.

- The *Door/Hardware Schedule* is part of the finishing component of carpentry and this type of job is not as commonly performed by members as is commercial concrete forming. Additionally, it may be a sub-contracted area.

- *Health & Welfare, Pension Information, Collective Agreement and Training Material* are material from the union. This type of reading material was seen as important and read when it came, but was not read frequently.

- The skill of *Work with Curves/Arcs* is used infrequently as not many buildings have designed curves and arcs. This skill is usually associated with parkades and curbs.

- The skill of *Use a Transit* is often the job done by building technicians, so while 82% of the carpenters perform this skill, it is not done frequently.

- The calculation of *Perimeter* is not performed very often. If needed, the perimeter is usually found on the blueprints for the site and is therefore becoming more of a reading skill.

Low Use - High Frequency

In this case, the workplace literacy skill was used frequently, but not by a high percentage number of respondents. The results are presented in Table 25.

In general, these skills are used frequently on the job by a particular group of carpenters. They should be included as part of apprenticeship training.

Table 25 LOW USE - HIGH FREQUENCY

Reading	**Use %**	**Frequency %**
Checklists	42	78
Bills/Invoices	40	72
Charts Tables Graphs	27	66
Mathematics	**Use %**	**Frequency %**
Pressure	47	69
Temperature	53	65
Communication	**Use %**	**Frequency %**
Fill in Time Cards	55	91
Write Job Site Diaries	41	82
Use Telephone	57	74
Write Instructions	39	70

Possible explanations for differences in these skills are presented below.

- The skills of *Checklists, Bills/Invoices, Charts/Tables/Graphs, Use Telephone* , and *Write Instructions* are the responsibility of Foremen or Supervisors in field offices.

- The use of *Pressure* and *Temperature* are specialty skills and correspond to the carpenters responsible for working with air tools or working with concrete pouring.

- The skills of *Job Site Diaries* and *Fill in Time Cards* may be either the responsibility of apprentices or Supervisors and Foremen.

ADDITIONS & COMMENTS

At the end of each section of the survey, the respondents were asked to add additional workplace literacy skill which had not been covered and to add additional comments. These are presented below.

Reading Additions

Pipeline Rules & Regulations
Concrete Design Mix
Subcontract Documents
Compensation Forms
Tax & Payroll Forms
Textbooks

Mathematics Additions

Elevation Calculation
Pricing
Dollars/Cost/$

Communications Additions

Listening to the boss
Give Safety Instruction
Discuss the best way to get job done
Discuss work in progress
Listen to foremen
Listen to partner's view
Listen to feedback
Lecturing

Reading Comments

- A lot of the items above, I have someone else read for me.
- I have many subscriptions e.g. Heavy Construction, American Woodworker.
- Need lawyer to understand union material.
- Read any material relevant to the duties of a construction superintendent.
- I don't have much time to read that much, I also have to work.
- Read anything available.

Mathematics Comments

- The point "Count how many" is not clear - does it mean Quantity?
- Any math relevant to construction superintendent.

Communications Comments

- Anything relevant to construction supervisor.
- In charge of coordinating other trades such as electricians, operators in relation to our contract.

Other Comments

- I am working as an inspector, consultant and do some training.
- Management of small crews of men, but I want more knowledge of blueprint, management and upgrading.

DISCUSSION OF WORKPLACE LITERACY SKILLS RESULTS

In order to facilitate the analysis of the workplace literary skills results in this study, it was decided to rank order the frequency of use and the combined daily and weekly frequency. The rank orders were reviewed by the project team for any trends or unexpected rankings. The rank orders for use and frequency were then compared and examined for unanticipated differences between the two.

Rank Order for Use

The rank orders for use (affirmative responses) are presented in Tables 26, 27, and 28.

Reading

- It would appear that those skills ranked 20 and below tend to be the responsibility of carpenters in supervisory roles.

Mathematics

- Three skills rankings were unexpected: two of these, *Curves/Arc* and *Board Feet*, ranked higher than anticipated and one, *Volume*, ranked lower. No explanation could be found for any of the rankings.

Communication

- The skills, *Make Drawings/Sketches*, and *Coordinate Work with other Groups*. are supervisory skills, and the higher ranking may be determined by the interpretation of whether or not the skill was performed formally on large job sites or informally on small job sites.

Table 26 **RANK ORDER OF YES RESPONSES**
READING SKILLS

Rank	Document/Task	Total N° Yes	% of Respondents
1	Safety Signs/Posters	105	(94)
2	Blueprints	102	(92)
3	Health & Welfare	101	(92)
4	Hazard Labels/WHMIS	100	(91)
5	Safety Regulations	98	(89)
6	Drawings/Sketches	98	(89)
7	Symbols	94	(85)
8	Pension Information	96	(87)
9	Collective Agreement	93	(85)
10	Installations Directions	90	(82)
11	Company Regulations	88	(80)
12	Training Material	87	(79)
13	Door/Hardware Schedules	83	(75)
14	Tool/Equipment Instructions	77	(70)
15	Constitution & Bylaws	76	(69)
16	Memo/Notes	71	(65)
17	Operating Instructions	70	(64)
18	Specifications	65	(59)
19	Time/Log Sheets	55	(50)
20	Production Schedules	49	(44)
21	Building Codes	47	(43)
22	Checklists	46	(42)
23	Purchase Orders	45	(41)
24	Trade Manuals	44	(40)
25	Bills/Invoices	44	(40)
26	Estimates/Take -Offs	34	(31)
27	Contracts	32	(29)
28	Charts, Tables or Graphs	30	(27)
29	Permits	28	(25)

Table 27 RANK ORDER OF YES RESPONSES

MATHEMATICAL SKILLS

Rank	Mathematical Operation	Total N° Yes	% of Respondents
1	Add/Subtract Numbers	110	(100)
2	Tape Measure	110	(100)
3	Multiply/Divide Numbers	109	(99)
4	Measure in Feet & Inches	109	(99)
5	Framing Square	107	(97)
6	Right Angles	106	(96)
7	Add/Subtract Fractions	102	(93)
8	Measure in Metric	101	(92)
9	Depth of Cut	99	(90)
10	Add/Subtract Decimals	98	(89)
11	Area	98	(89)
12	Rectangles	97	(88)
13	3-4-5 Formula	97	(88)
14	Square Footage	96	(87)
15	Angles on Miter/Table Saw	95	(86)
16	Multiply/Divide Fractions	95	(86)
17	Perimeter	94	(85)
18	Perpendicular	94	(85)
19	Curves/Arcs	93	(85)
20	Multiply/Divide Decimals	91	(83)
21	Estimate Material	91	(83)
22	Triangles	91	(83)
23	Estimate Time	87	(82)
24	Transit	90	(82)
25	Leveling Rod	89	(81)
26	Circumference	85	(77)
27	Survey Stick	82	(75)
28	Convert Imperial to Metric	80	(73)
29	Volume	79	(72)
30	Convert Fractions to Decimals	77	(70)
31	Tolerance	72	(65)
32	Board Feet	71	(65)
33	Calculator	70	(64)
34	Rafter Tables	59	(54)
35	Temperature	58	(53)
36	Calculate Percentage	53	(48)
37	Gauges or Dials	52	(47)
38	Pressure	52	(47)
39	Weight	50	(45)
40	Use Ratio or Proportions	49	(45)
41	Scales on Equipment	39	(35)
42	Loads (SWL)	36	(33)

Table 28 RANK ORDER OF YES RESPONSES
COMMUNICATION SKILLS

Rank	Communication Task/Operation	Total N° Yes	% of Respondents
1	Follow Directions	106	(96)
2	Ask Questions	106	(96)
3	Work with Other Trade Groups	101	(92)
4	Give Directions	92	(84)
5	Identify Defects/Damages	87	(79)
6	Keep Track of Hours	86	(78)
7	Use Hand Signals	83	(75)
8	Make Drawings/Sketches	76	(69)
9	Speak in Small Groups	73	(66)
10	Speak with Outside People	72	(65)
11	Coordinate Work with Other Trades	72	(65)
12	Fill in Forms	68	(62)
13	Leave Notes/Memos	66	(60)
14	Use the Telephone	63	(57)
15	Fill in Time Cards	60	(55)
16	Write Job Site Diaries	45	(41)
17	Write Instructions	43	(39)
18	Write Safety Reports	35	(31)
19	Write Work Orders	30	(27)
20	Use Fax, Copier, or Typewriter	29	(26)
21	Write Letters	17	(15)

Rank Order for Frequency of Use.

For the rank orders of Frequency, there were no unanticipated results for any of the Workplace Literacy skills - Reading, Mathematics, and Communication. The results are presented in Tables 29, 30 and 31.

Table 29 RANK ORDER OF FREQUENCY READING

Rank	Reading Document	Combined %	Daily %	Weekly %
1	Drawings/Sketches	89	62	27
2	Blueprints	87	54	33
3	Safety Signs/Posters	86	65	21
4	Symbols	85	60	25
5	Time/Log Sheets	84	60	24
6	Memo/Notes	81	44	37
7	Safety Regulations	78	42	36
8	Checklists	78	41	37
9	Bills/Invoices	72	36	36
10	Hazard Labels/WHMIS	67	40	27
11	Specifications	66	26	40
12	Charts, Tables or Graphs	66	23	43
13	Company Regulations	62	38	24
14	Production Schedules	61	20	41
15	Purchase Orders	58	31	27
16	Operating Instructions	53	27	26
17	Estimates/Take -Offs	52	23	29
18	Tool/Equipment Instructions	47	17	30
19	Installations Directions	42	21	21
20	Building Codes	42	21	21
21	Door/Hardware Schedules	37	19	18
22	Contracts	32	16	16
23	Permits	28	21	7
24	Trade Manuals	27	11	16
25	Training Material	7	2	5
26	Collective Agreement	5	0	5
27	Constitution & Bylaws	4	0	4
28	Health & Welfare	2	0	2
29	Pension Information	1	0	1

Table 30 **RANK ORDER OF FREQUENCY**

MATHEMATICS

Rank	Mathematical Operation	Combined %	Daily %	Weekly %
1	Add/Subtract Numbers	94	90	4
2	Measure in Feet & Inches	93	93	0
3	Tape Measure	93	91	2
4	Multiply/Divide Numbers	93	88	5
5	Estimate Time	93	64	29
6	Add/Subtract Fractions	91	81	10
7	Right Angles	88	70	18
8	Framing Square	86	75	11
9	Add/Subtract Decimals	86	71	15
10	Depth of Cut	86	68	18
11	Tolerance	84	67	17
12	Multiply/Divide Decimals	84	65	19
13	Multiply/Divide Fractions	83	67	16
14	Perpendicular	83	61	22
15	Estimate Material	83	53	30
16	Measure in Metric	82	78	4
17	3-4-5 Formula	72	38	34
18	Convert Imperial to Metric	71	56	15
19	Angles on Miter/Table Saw	71	43	28
20	Calculator	71	41	30
21	Area	71	33	38
22	Rectangles	70	57	23
23	Pressure	69	40	29
24	Square Footage	68	34	34
25	Convert Fractions to Decimals	67	42	25
26	Temperature	65	43	22
27	Calculate Percentage	64	30	34
28	Triangles	63	43	20
29	Leveling Rod	63	39	24
30	Perimeter	60	33	27
31	Volume	60	27	33
32	Gauges or Dials	52	23	29
33	Survey Stick	50	23	27
34	Weight	46	28	18
35	Board Feet	46	23	23
36	Circumference	46	21	25
37	Curves/Arcs	45	25	20
38	Transit	42	14	28
39	Scales on Equipment	41	13	28
40	Use Ratio or Proportions	40	18	22
41	Rafter Tables	34	20	14
42	Loads (SWL)	33	11	22

Table 31 **RANK ORDER OF FREQUENCY COMMUNICATION SKILLS**

Rank	Communication Task	Combined %	Daily %	Weekly %
1	Follow Directions	93	90	3
2	Ask Questions	91	89	3
3	Keep Track of Hours	91	79	12
4	Fill in Time Cards	91	63	28
5	Give Directions	85	77	8
6	Work with Other Trade Groups	85	70	15
7	Speak in Small Groups	83	64	19
8	Write Job Site Diaries	82	69	13
9	Make Drawings/Sketches	81	45	36
10	Coordinate Work with Other Trades	75	54	21
11	Use the Telephone	74	57	17
12	Leave Notes/Memos	72	42	30
13	Write Instructions	70	33	37
14	Use Hand Signals	69	45	24
15	Speak with Outside People	68	29	39
16	Identify Defects/Damages	67	44	23
17	Write Work Orders	63	33	30
18	Use Fax, Copier, or Typewriter	59	31	28
19	Write Safety Reports	57	6	51
20	Fill in Forms	55	29	26
21	Write Letters	36	18	18

Comparison of Rank Orders.

The results are presented in Tables 32, 33, and 34.

Reading

- For the skills of *Health & Welfare, Pension Information, Collective Agreement, and Training Material,* the difference between use and frequency was explained by the fact that this material is read but not frequently.

- For the skills of, *Charts/Tables/Graphs, Bills/Invoices, Checklists,* and Time/*Log Sheets,* the difference was explained by the fact that these skills tend to be in the category of supervisor responsibilities.

Mathematics

- *Multiply/Divide Fractions*
  The difference here may be explained by the use of both metric and imperial in the industry. When the job is in imperial, the skill is done more frequently; but jobs, in metric do not require this skill.

- *Perimeter*
  This skill is not performed very often. If needed, it is usually found on the blueprints for the site.

- *Estimate Time*
  This is usually performed by the lead hand or foreman.

- *Curves/Arcs*
  This skill is used infrequently as not many buildings have curves and arcs.

- *Transit*
  Much of the surveying is done by building technicians.

- *Tolerance*
  Precise tolerance and checking of tolerance will be performed by a foreman or an engineer.

- *Use of a Calculator*
  Usually this is used by a foreman. Additionally, not as much detailed calculations are needed by carpenters as the measurements are on drawings for the site.

Communication

- The skill of *Fill in Time Cards*, was explained as either a supervisory duty or an apprenticeship task.

- The skill of *Identify Defects and Damages*, was seen as an automatic part of the job. Items which carpenters could deal with themselves, such as a cracked 2x4, would not be communicated to supervisors. Other defects or damages, relating to deficiency tests in the final slopes on the job, would be reported to field supervisors.

Table 32 COMPARISON OF RANK ORDERS
READING

	USE	FREQUENCY
Safety Signs/Posters	1	3
Blueprints	2	2
Health & Welfare	3	28
Hazard Labels/WHMIS	4	10
Safety Regulations	5	7
Drawings/Sketches	6	1
Symbols	7	4
Pension Information	8	29
Collective Agreement	9	26
Installations Directions	10	19
Company Regulations	11	13
Training Material	12	25
Door/Hardware Schedules	13	21
Tool/Equipment Instructions	14	18
Constitution & Bylaws	15	27
Memo/Notes	16	6
Operating Instructions	17	16
Specifications	18	11
Time/Log Sheets	19	5
Production Schedules	20	14
Building Codes	21	20
Checklists	22	8
Purchase Orders	23	15
Trade Manuals	24	24
Bills/Invoices	25	9
Estimates/Take -Offs	26	17
Contracts	27	22
Charts, Tables or Graphs	28	12
Permits	29	22

Table 33 COMPARISON OF RANK ORDER MATHEMATICS

	USE	FREQUENCY
Add/Subtract Numbers	1	1
Tape Measure	2	3
Multiply/Divide Numbers	3	4
Measure in Feet & Inches	4	2
Framing Square	5	8
Right Angles	6	7
Add/Subtract Fractions	7	6
Measure in Metric	8	16
Depth of Cut	9	10
Add/Subtract Decimals	10	9
Area	11	21
Rectangles	12	22
3-4-5 Formula	13	17
Square Footage	14	24
Angles on Miter/Table Saw	15	19
Multiply/Divide Fractions	16	4
Perimeter	17	30
Perpendicular	18	14
Curves/Arcs	19	31
Multiply/Divide Decimals	20	15
Estimate Material	21	15
Triangles	22	28
Estimate Time	23	5
Transit	24	38
Leveling Rod	25	29
Circumference	26	36
Survey Stick	27	33
Convert Imperial to Metric	28	18
Volume	29	31
Convert Fractions to Decimals	30	25
Tolerance	31	11
Board Feet	32	35
Calculator	33	20
Rafter Tables	34	41
Temperature	35	26
Calculate Percentage	36	27
Gauges or Dials	37	32
Pressure	38	23
Weight	39	34
Use Ratio or Proportions	40	40
Scales on Equipment	41	39
Loads (SWL)	42	42

Table 34 COMPARISON OF RANK ORDER COMMUNICATION SKILLS

	USE	FREQUENCY
Follow Directions	1	1
Ask Questions	2	2
Work with Other Trade Groups	3	6
Give Directions	4	5
Identify Defects/Damages	5	16
Keep Track of Hours	6	3
Use Hand Signals	7	14
Make Drawings/Sketches	8	9
Speak in Small Groups	9	7
Speak with Outside People	10	15
Coordinate Work with Other Trades	11	10
Fill in Forms	12	20
Leave Notes/Memos	13	12
Use the Telephone	14	11
Fill in Time Cards	15	4
Write Job Site Diaries	16	8
Write Instructions	17	13
Write Safety Reports	18	19
Write Work Orders	19	17
Use Fax, Copier, or Typewriter	20	18
Write Letters	21	21

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

- Reading, mathematics and verbal and non-verbal communication skills are necessary in the carpentry trade and are important for trade proficiency.

- The demands placed on carpenters' workplace literacy skills increase as the level of responsibility increases.

- Report writing skills are necessary job skill for carpenters in supervisory positions and increase in direct proportion to the level of responsibility.

- The trend is for members to complete more years of secondary schooling and to obtain recognized trade qualifications.

- Ninety percent (90%) of the respondents had at least Grade 10, thereby exceeding the grade level entry requirement (Grade 9) for the trade.

- Vocational education courses have an important place for the development of trade literacy skills and applied basic skills, as 68% of the respondents stated they had taken this type of course in secondary schooling.

- Portability of skills is important for the carpentry trade and common core occupational skills need to be consistent across Canada.

- There is a need to develop courses for members to meet changing and technological requirements of the trade.

- Common trade literacy skills need to be included in preparatory training of carpenters.

- Workplace literacy skills need to be taught in a functional context during apprenticeship training.

- There is substantial interest on behalf of the members (81%) in upgrading their skills and taking CTITF courses.

- Members indicated an interest in improving their literacy and numeracy skills.

- Most members read union information.

- The sub groups of aboriginal peoples and women did not have sufficient numbers to determine if there were significant differences.

- No significant differences were found in comparing the workplace literacy skills of rural versus urban carpenters, nor for north versus south.

- While no significant difference were found for immigrant/new Canadians, this may be contributed to the limitation of the instrument in determining this category of respondents.

RECOMMENDATIONS

SURVEY INSTRUMENT

For future instruments there is a need to clarify or develop questions in the following areas:

- **Background**
  - Supervisory Roles
  - Size of job normally work on

- **Reading**
  - Clarify Hand Drawings/Sketches versus Office Drawings/Blueprints
  - Pipeline Rules & Regulations
  - Concrete Design Mix
  - Subcontract Documents
  - Compensation Forms
  - Tax & Payroll Forms
  - Textbooks
  - Computer Screens

- **Mathematics**
  - Pressure for Air Tools
  - Pressure for Concrete Forms
  - Welding Pressures
  - Estimate Time to complete Job or Job Segments
  - Count How Many/Quantity
  - Elevation Calculations
  - Pricing
  - Dollars/Cost/$

- **Communications**
  - 2-Way Radio Communication
  - Listening to the boss
  - Give Safety Instruction
  - Discuss the best way to get job done
  - Discuss work in progress
  - Listen to foremen
  - Listen to partner's view
  - Listen to feedback
  - Lecturing

- **Other**

There is a need to examine the format for the trades training questions. Suggestions include:

- collapsing questions 12-14;
- adding a question on university courses;
- deleting the reference to foreman training; and
- expanding employer training examples to include other points like WHMIS.

DEVELOPMENT OF CTITF COURSES

- The CTITF should continue to develop and offer courses to members.

- Workplace literacy skills need to be an integrated part of all CTITF courses.

- Courses for the following specific workplace literacy skills should be developed:
  - Blueprint Reading
  - Metric Conversion
  - Oral Communication Skills
  - Bill, Invoices, Purchase Orders
  - Foreman/Supervisory Training.

- The same CTITF courses should be offered at a variety of times such as evenings and weekends.

- Alternative methods of course delivery, for example computer assisted and correspondence, should be delivered to meet the needs of members outside of Winnipeg.

- An instructor's guide/handbook for integrating workplace literacy skills into regular courses should be developed.

- The CTITF should develop formalized courses for the specific skills of *Production Schedules, Building Codes, Checklists, Purchase Orders, Trade Manuals, Bills/Invoices, Estimates/Take-Offs, Contracts, Charts/Tables/Graphs* and *Permits* .

ACTION RECOMMENDATIONS

- The apprenticeship curriculum needs to be examined to verify that the necessary workplace literacy skills are included.

- Workshops for Trade/Vocational Instructors, and Apprenticeship Counsellors should be held to increase their awareness for the need to identify and integrate workplace literacy skill development into the practical components of the apprenticeship training.

- Vocational courses in secondary school need to be maintained and strengthened.

- Workplace literacy skill development should be an integral part of course curriculum in vocational/industrial courses in secondary schools.

- A national study to identify portable, common core occupational literacy skills of carpenters needs to be undertaken.

- An examination between Local 343's collective agreement and provincial legislation for congruency of recognition of foreign trade qualifications should be undertaken.

- A section on workplace literacy skills needs to be included in Employment and Immigration Canada's Occupational Analyses Series.

- The results of this report should be used to educate potential partners in skill training, both federal and provincial agencies such as Workforce 2000, Apprenticeship Branch, Dept. of Labour, Dept. of Education and Training, Community Colleges, University Education Faculties, School Boards, and private vocational institutes.

- Applied basic education skills should be taught in the regular school system and reinforced in vocational courses.

- Public school curriculum needs to be examined to verify that it includes the applied basic numeracy skill for the trade by Grade 9.

- The current grade level requirement of Grade 9 needs to be examined to verify that it is adequate for entry into the trade.

- In the final apprenticeship year, apprentice courses for communications must cover literacy skills for *Reading of Instructions, Installation Procedures, Production Schedules, Building Codes, Checklists, Purchase Orders, Trade Manuals, Bills/Invoices, Estimates/Take-Offs, Contracts, Charts/Tables/Graphs* and *Permits* .

APPENDICES

IMPROVING JOB SITE SKILLS QUESTIONNAIRE

PART A - BACKGROUND INFORMATION
Please check (√) the line which bests describes your background.

1. Gender Male ___ Female ___
2. Age 16-24 ___; 25-33 ___; 34-42 ___; 43-50 ___; 50+___
3. First Language English ___; French ___; Other ___ Which One ? _____

4. How many years have you been in the trade? 1-5 __; 6-10 __; 11-15 __; 16-20 __; 20+ __
5. Are you an Apprentice? No ___; Yes ___; Which Level ? 1 ___; 2 ___; 3 ___; 4 ___
6. Do you have Journey Certification ? No ___; Yes ___;
   If Yes, Inter Provincial ___; Province ___ Year ___

7. What is the main type of work you usually do ?
   Concrete Forming ___ Framing ___
   Finish Carpentry ___ Scaffolding ___
   Other ___ What Kind ? _____
8. Where do you usually work ?
   Winnipeg ___; Brandon ___; Thompson ___; Other ___ Where: _____

9. What is the highest Grade you have completed?
   8 ___; 9___; 10 ___; 11 ___; 12 ___; Other ___ Please State _____

10. What types of courses did you take in school ?
    General ___; Vocational ___; Business ___; University Entrance ___
    Other ___ Which Ones? _____

11. Where did you go to school?
    Winnipeg ___; Brandon ___; Thompson ___;
    Other City, Province or Country ___ ; Please State Where: _____

12. Did you take any of the following trades training course ? Check all that apply.
    Vocational Courses in High School ___ Which Ones _____
    Pre Employment Courses ___ Which Ones _____
    Apprenticeship Courses ___ Where _____
    On-The-Job Training ___
    Other ___ What Kind ?_____

13. Have you taken any courses offered by the Union/Construction Labour Relations Association?
    No ___; Yes ___; Which Ones? _____

14. Have you received any training offered by an employer, such as foremen training?
    No ___; Yes ___; What Kind? _____

15. Have you taken any course on your own, such as at night school, community college, local high school or university ?
    No ___; Yes ___; Which Ones? _____

16. Please add any other comments about your schooling or training in the space below.
    _____
    _____

PART B - BASIC JOB SITE SKILLS

The following sections are designed to find out which reading, writing, math and communication skills are needed on the job site. Please answer the questions as if you are working.

EXAMPLE

Please mark an X to tell us if you do that kind of skill and if yes, how often you do it.

On the job do you ?	No	Yes	Daily	Weekly	Monthly	1-2/Year
Read Blueprints	❑	❑	❑	❑	❑	❑
Use a Tape Measure	❑	❑	❑	❑	❑	❑
Leave Memos/Notes	❑	❑	❑	❑	❑	❑

SECTION 1

JOB SITE READING SKILLS

Please place an X to tell us if you do this kind of reading on the job when you are working. (No or Yes). If **Yes**, please mark an X to show how often you do it.

On the job do you read ?	No	Yes	Daily	Weekly	Monthly	1-2/Year
Blueprints	❑	❑	❑	❑	❑	❑
Building Codes	❑	❑	❑	❑	❑	❑
Contracts	❑	❑	❑	❑	❑	❑
Drawings/Sketches	❑	❑	❑	❑	❑	❑
Estimates/Take Offs	❑	❑	❑	❑	❑	❑
Permits	❑	❑	❑	❑	❑	❑
Production Schedules	❑	❑	❑	❑	❑	❑
Specifications	❑	❑	❑	❑	❑	❑

On the job do you use ?	No	Yes	Daily	Weekly	Monthly	1-2/Year
Bills/Invoices	❑	❑	❑	❑	❑	❑
Chart, Tables or Graphs	❑	❑	❑	❑	❑	❑
Checklists	❑	❑	❑	❑	❑	❑
Door/Hardware Schedule	❑	❑	❑	❑	❑	❑
Installation Directions	❑	❑	❑	❑	❑	❑
Memo/Notes	❑	❑	❑	❑	❑	❑
Operating Instructions	❑	❑	❑	❑	❑	❑
Purchase Orders	❑	❑	❑	❑	❑	❑
Time/Log Sheets	❑	❑	❑	❑	❑	❑
Tool/Equipment Instructions	❑	❑	❑	❑	❑	❑
Trade Manuals	❑	❑	❑	❑	❑	❑

On the job do you look at?	No	Yes	Daily	Weekly	Monthly	1-2/Year
Company Regulations	❑	❑	❑	❑	❑	❑
Hazard Labels/WHMIS	❑	❑	❑	❑	❑	❑
Safety Regulations	❑	❑	❑	❑	❑	❑
Safety Signs/Posters	❑	❑	❑	❑	❑	❑
Symbols	❑	❑	❑	❑	❑	❑

Do you read Union Material?	No	Yes	Daily	Weekly	Monthly	1-2/Year
Collective Agreement	❑	❑	❑	❑	❑	❑
Health & Welfare Information	❑	❑	❑	❑	❑	❑
Pension Information	❑	❑	❑	❑	❑	❑
Constitution & Bylaws	❑	❑	❑	❑	❑	❑
Training Material	❑	❑	❑	❑	❑	❑

Please list any other kinds of reading you do on the job site in the space below.

_____

_____

SECTION 2
JOB SITE MATHEMATICS SKILLS

Please place an X to tell us if you do this kind of math on the job when you are working. (No or Yes). If **Yes**, please mark an X to show how often you do it.

On the job do you ?	No	Yes	Daily	Weekly	Monthly	1-2/Year
Add or Subtract Numbers	☐	☐	☐	☐	☐	☐
Add or Subtract Fractions	☐	☐	☐	☐	☐	☐
Add or Subtract Decimals	☐	☐	☐	☐	☐	☐
Multiply or Divide Numbers	☐	☐	☐	☐	☐	☐
Multiply or Divide Fractions	☐	☐	☐	☐	☐	☐
Multiply or Divide Decimals	☐	☐	☐	☐	☐	☐

On the job do you figure out ?	No	Yes	Daily	Weekly	Monthly	1-2/Year
Area	☐	☐	☐	☐	☐	☐
Perimeter	☐	☐	☐	☐	☐	☐
Circumference	☐	☐	☐	☐	☐	☐
Volume	☐	☐	☐	☐	☐	☐
Board Feet	☐	☐	☐	☐	☐	☐
Weight	☐	☐	☐	☐	☐	☐
Loads (SWL)	☐	☐	☐	☐	☐	☐
Square Footage	☐	☐	☐	☐	☐	☐
Angles on Miter or Table Saw	☐	☐	☐	☐	☐	☐

On the job do you ?	No	Yes	Daily	Weekly	Monthly	1-2/Year
Measure in Feet & Inches	☐	☐	☐	☐	☐	☐
Measure in Metric	☐	☐	☐	☐	☐	☐
Convert Fractions to Decimals	☐	☐	☐	☐	☐	☐
Convert Imperial to Metric	☐	☐	☐	☐	☐	☐
Count How Many	☐	☐	☐	☐	☐	☐
Estimate Time	☐	☐	☐	☐	☐	☐
Estimate Materials	☐	☐	☐	☐	☐	☐
Calculate Percentage (%)	☐	☐	☐	☐	☐	☐
Use Ratios or Proportions	☐	☐	☐	☐	☐	☐

For your job do you use?	No	Yes	Daily	Weekly	Monthly	1-2/Year
Calculator	☐	☐	☐	☐	☐	☐
Tape Measure	☐	☐	☐	☐	☐	☐
Framing Square	☐	☐	☐	☐	☐	☐
Rafter Tables	☐	☐	☐	☐	☐	☐
Leveling Rod	☐	☐	☐	☐	☐	☐
Survey Stick	☐	☐	☐	☐	☐	☐
Transit	☐	☐	☐	☐	☐	☐
Scales on Equipment	☐	☐	☐	☐	☐	☐
Gauges or Dials	☐	☐	☐	☐	☐	☐

Do you work with?	No	Yes	Daily	Weekly	Monthly	1-2/Year
Right Angles	☐	☐	☐	☐	☐	☐
Perpendicular	☐	☐	☐	☐	☐	☐
Curves/Arcs	☐	☐	☐	☐	☐	☐
Triangles	☐	☐	☐	☐	☐	☐
Rectangles	☐	☐	☐	☐	☐	☐
3-4-5 Formula	☐	☐	☐	☐	☐	☐
Depth of Cut	☐	☐	☐	☐	☐	☐
Tolerance	☐	☐	☐	☐	☐	☐
Temperature	☐	☐	☐	☐	☐	☐
Pressure	☐	☐	☐	☐	☐	☐

Please list any other kinds of math you do on the job site in the space below.

_____

_____

SECTION 3
JOB SITE COMMUNICATION SKILLS

Please place an X to tell us if you do this kind of writing, speaking and listening on the job when you are working. (No or Yes). If **Yes**, please mark an X to show how often you do it.

On the job do you ?	No	Yes	Daily	Weekly	Monthly	1-2/Year
Fill in Forms	☐	☐	☐	☐	☐	☐
Fill in Time Cards	☐	☐	☐	☐	☐	☐
Keep Track of Hours	☐	☐	☐	☐	☐	☐
Write Job Site Diaries	☐	☐	☐	☐	☐	☐
Leave Notes/Memos	☐	☐	☐	☐	☐	☐
Write Work Orders	☐	☐	☐	☐	☐	☐
Write Safety Reports	☐	☐	☐	☐	☐	☐
Write Instructions	☐	☐	☐	☐	☐	☐
Make Drawings/Sketches	☐	☐	☐	☐	☐	☐
Write Letters	☐	☐	☐	☐	☐	☐

On the job do you ?	No	Yes	Daily	Weekly	Monthly	1-2/Year
Follow Directions	☐	☐	☐	☐	☐	☐
Give Directions	☐	☐	☐	☐	☐	☐
Ask Questions	☐	☐	☐	☐	☐	☐
Take Messages	☐	☐	☐	☐	☐	☐
Speak in Small Groups	☐	☐	☐	☐	☐	☐
Speak with Outside People. e.g. Architect, Supplier	☐	☐	☐	☐	☐	☐

For your job do you?	No	Yes	Daily	Weekly	Monthly	1-2/Year
Use the Telephone	☐	☐	☐	☐	☐	☐
Use Fax, Copier or Typewriter	☐	☐	☐	☐	☐	☐
Use Hand Signals	☐	☐	☐	☐	☐	☐
Identify Defects/Damage	☐	☐	☐	☐	☐	☐
Work with Other Trade Groups	☐	☐	☐	☐	☐	☐
Coordinate Work with Other Trade Groups	☐	☐	☐	☐	☐	☐

Please list any other kinds of writing, speaking, or listening you do on the job site .

_____

_____

PART C - PROGRAM FORMAT

If programs or courses for reading, writing and math skills were offered, when would you like them. Please check (√) all that apply.

TIME

Evenings _____ Mon. ___ Tues. ___ Wed. ___ Thurs. ___ Fri. ___
Weekends _____ Mornings _____ Afternoons _____
Other Time _____ Please Specify : _____

SCHEDULE

Once a Week _____ Twice a Week _____
Computer Assisted _____ Correspondence _____
Other _____ Please Specify : _____

WHERE

In a School _____ In the Union Hall _____ On Job Site _____
Other Place _____ Please Specify : _____

TYPE OF COURSE

G. E. D. /UPGRADING ___ ENGLISH SECOND LANGUAGE (ESL) ___
READING ___ WRITING/SPELLING ___
MATH ___ METRIC CONVERSION ___
SPEAKING ___ OTHER ___ Please Specify _____

March 5, 1993

Dear Brother/Sister:

The skills needed in our industry are changing. Carpenters need a wider range of job site communication skills.

The Carpentry Trade Improvement Trust Fund (CTITF) has received money from the 'Basic Education in the Workplace Steering Committee' to survey our members about the reading, writing, math and communication skills needed on the job site.

This survey is an important step in finding out how we can improve our skills. Please take the time to complete the enclosed survey and return it in the envelope provided by **March 22,** 1993. Please answer the questions as if you are working.

No one will be identified in the survey report and all information will be kept confidential.

If you have any questions or need assistance, please see me at the Union Office or phone me at 774-1609.

In solidarity,

Laurie Todd Co-ordinator, CTITF Training '93

* *

le 5 mars 1993

Mesdame, Messieurs,

Nous avons besoin de nouvelles compétences pour exercer notre métier. Les charpentiers doivent en effet améliorer leurs aptitudes à communiquer dans le cadre de leur travail.

Le Comité directeur des programmes d'éducation de base en milieu de travail a accordé des crédits au fonds fiduciaire de perfectionnement des charpentiers (Carpentry Trade Improvement Trust Fund, CTITF) pour que nous fassions un sondage auprès de nos membres. Nous voulons savoir quelles sont les compétences nécessaires en milieu de travail dans les domaines suivants: lecture, écriture, mathématiques et communication.

Ce sondage constitue une étape importange pour déterminer comment nous pouvons nous perfectionner. Veuillez remplir le sondage ci-joint et nous le retourner dan l'enveloppe ci-annexée au plus tard **le 22 mars,** 1993. Veuillez repondre aux questions, comme si vous êtes employé(e).

Les personnes interrogées garderont l'anonymat et les renseignements obtenues demeureront confidentiels.

Si vous avez besoin d'aide or de reseignements, venez me rencontrer au bureau du syndicat ou communiquez avec moi au 774-1609.

Je vous remercie de votre collaboration et vous prie d'agréer, Mesdames, Messieurs, l'expression de mes sentiments distingués.

Laurie Todd Coordonnateur, CTITF Formation '93

dia 5 de Março, 1993

Caro irmão/irmã:

As perícias ou habilidades necessárias na nossa indústria estão a mudar. Os carpinteiros precisam dum nível de comunicação muito mais elevada.

A "Carpentry Trade Improvement Trust Fund (CTITF)" recebeu dinheiro do "Basic Education in the Workplace Steering Committee" para fazer um inquérito aos nossos sócios acera das perícias em escrita, literatura, matemáticas e comunicação necessárias no lugar de trabalho.

Este inquérito é um passo importante para que possamos aperfeiçoar as nossas aptidões. Por favor responde ao inquérito incluso e reenvio-o até **dia 22 de Março**, 1993. Faça favor responder como se tivisse trabalhar.

Toda a informação fornecida por vós será guardada em confidência e o seu nome não será indentificado.

Se você tiver algumas perguntas ou precisar de assistência, por favor pergunte-me no ofício da união ou telefone-me a 774-1609.

Obrigado pelo seu tempo.

Na solidariedade,

Laurie Todd Coordenador, CTITF Treino '93

* *

5 marzo, 1993

Carissimo/a fratello/sorella;

Le abilità necessarie nella nostra industria stanno cambiando. Falegnami/ carpentieri hanno bisogno di saper comunicare con gli operai sul cantiere.

Ci sono dei fondi disponibili tramite il Carpentry Trade Improvement Trust Fund (CTITF) del "Basic Education in the Workplace Steering Committee" per fare un sondaggio dei nostri membri per quanto riguarda il loro livello di saper leggere e scrivere, la loro conoscenza della matematica e il saper comunicare efficacemente con gli altri.

Questo sondaggio è un passo importante per scoprire il livello delle nostre abilità. Pregasi gentilmente di voler completare il questionario, qui allegato, e spedirlo nell'apposita busta entro il **22 marzo**, 1993. Per piacere rispondete alle domande come se foste operai attualmente a lavoro.

Tutte le informazioni ottenute saranno trattate strettamente confidenziali.

Per ulteriori informazioni ed eventuale assistenza, pregasi telefonarmi al 774-1609.

Grazie per la Sua cooperazione.

In spirito di solidarietà,

Laurie Todd Coordinatore, CTITF Training '93

Total Yes Responses and Frequency of Use - Workplace Reading Skills

TYPES OF READING	Total Yes		Daily		Weekly		Monthly		Yearly		Varies	
	N°	%	N°	%	N°	%	N°	%	N°	%	N°	%
Blueprints	102	(92)	55	(54)	34	(33)	6	(6)	4	(4)	3	(3)
Drawings/Sketches	98	(89)	61	(62)	26	(27)	3	(3)	2	(2)	6	(6)
Specifications	65	(59)	17	(26)	26	(40)	12	(18)	6	(9)	4	(6)
Production Schedules	49	(44)	10	(20)	20	(41)	11	(23)	4	(8)	4	(8)
Building Codes	47	(43)	10	(21)	10	(21)	15	(32)	7	(15)	5	(11)
Estimates/Take Offs	34	(31)	8	(23)	10	(29)	9	(26)	4	(12)	3	(9)
Contracts	32	(29)	5	(16)	5	(16)	6	(18)	8	(25)	8	(25)
Permits	28	(25)	6	(21)	2	(7)	8	(28)	9	(32)	3	(11)

TYPES OF READING	Total Yes		Daily		Weekly		Monthly		Yearly		Varies	
	N°	%	N°	%	N°	%	N°	%	N°	%	N°	%
Installations Directions	90	(82)	19	(21)	19	(21)	26	(29)	12	(13)	14	(16)
Door/Hardware Schedules	83	(75)	16	(19)	15	(18)	24	(29)	16	(19)	12	(14)
Tool/Equipment Instructions	77	(70)	13	(17)	23	(30)	13	(17)	13	(17)	15	(19)
Memo/Notes	71	(65)	31	(44)	26	(37)	6	(8)	0	(0)	8	(11)
Operating Instructions	70	(64)	19	(27)	18	(26)	14	(20)	10	(14)	9	(13)
Time/Log Sheets	55	(50)	33	(60)	13	(24)	2	(4)	0	(0)	7	(13)
Checklists	46	(42)	19	(41)	17	(37)	3	(7)	1	(2)	6	(13)
Purchase Orders	45	(41)	14	(31)	12	(27)	6	(13)	4	(9)	9	(20)
Trade Manuals	44	(40)	5	(11)	7	(16)	15	(34)	10	(23)	7	(16)
Bills/Invoices	44	(40)	16	(36)	16	(36)	6	(14)	1	(2)	5	(11)
Charts, Tables or Graphs	30	(27)	7	(23)	13	(43)	3	(10)	3	(10)	4	(13)

SAFETY INFORMATION	Total Yes		Daily		Weekly		Monthly		Yearly		Varies	
	N°	%	N°	%	N°	%	N°	%	N°	%	N°	%
Safety Signs/Posters	105	(94)	68	(65)	22	(21)	7	(7)	1	(1)	7	(7)
Hazard Labels/WHMIS	100	(91)	40	(40)	27	(27)	17	(17)	10	(10)	6	(6)
Safety Regulations	98	(89)	41	(42)	35	(36)	12	(13)	3	(3)	5	(7)
Symbols	94	(85)	56	(60)	23	(25)	7	(7)	1	(1)	7	(7)
Company Regulations	88	(80)	33	(38)	21	(24)	16	(18)	11	(12)	7	(8)

UNION INFORMATION	Total Yes		Daily		Weekly		Monthly		Yearly		Varies	
	N°	%	N°	%	N°	%	N°	%	N°	%	N°	%
Health & Welfare	101	(92)	0	(0)	2	(2)	55	(54)	36	(36)	8	(8)
Pension Information	96	(87)	0	(0)	1	(1)	28	(29)	60	(63)	7	(7)
Collective Agreement	93	(85)	0	(0)	5	(5)	43	(46)	38	(40)	7	(7)
Training Material	87	(79)	1	(2)	4	(5)	40	(46)	31	(36)	11	(13)
Constitution & Bylaws	76	(69)	0	(0)	3	(4)	23	(30)	42	(55)	8	(11)

Total Yes Responses and Frequency of Use - Workplace Mathematical Skills

ARITHMETIC SKILLS	Total Yes		Daily		Weekly		Monthly		Yearly		Varies	
	N°	%	N°	%	N°	%	N°	%	N°	%	N°	%
Add/Subtract Numbers	110	(100)	99	(90)	4	(4)	1	(1)	1	(1)	5	(5)
Multiply/Divide Numbers	109	(99)	96	(88)	5	(5)	2	(2)	1	(1)	5	(5)
Add/Subtract Fractions	102	(93)	83	(81)	10	(10)	2	(2)	2	(2)	5	(5)
Add/Subtract Decimals	98	(89)	70	(71)	15	(15)	5	(5)	3	(3)	5	(5)
Multiply/Divide Fractions	95	(86)	64	(67)	15	(16)	8	(8)	3	(3)	5	(5)
Multiply/Divide Decimals	91	(83)	59	(65)	17	(19)	8	(9)	3	(3)	4	(4)

CALCULATION SKILLS	Total Yes		Daily		Weekly		Monthly		Yearly		Varies	
	N°	%	N°	%	N°	%	N°	%	N°	%	N°	%
Measure in Feet & Inches	109	(99)	101	(93)	0	(0)	0	(0)	1	(1)	7	(6)
Measure in Metric	101	(92)	79	(78)	4	(4)	7	(7)	6	(6)	5	(5)
Count How Many	92	(84)	75	(82)	6	(7)	5	(5)	1	(1)	5	(5)
Estimate Material	91	(83)	48	(53)	27	(30)	7	(8)	4	(4)	5	(6)
Estimate Time	87	(82)	56	(64)	25	(29)	1	(1)	1	(1)	4	(6)
Convert Imperial to Metric	80	(73)	45	(56)	12	(15)	13	(16)	6	(8)	4	(5)
Convert Fractions to Decimals	77	(70)	32	(42)	19	(25)	14	(18)	7	(9)	5	(6)
Calculate Percentage	53	(48)	16	(30)	18	(34)	13	(25)	3	(6)	3	(6)
Use Ratio or Proportions	49	(45)	9	(18)	11	(22)	15	(31)	11	(22)	3	(6)

MATH TOOL SKILLS	Total Yes		Daily		Weekly		Monthly		Yearly		Varies	
	N°	%	N°	%	N°	%	N°	%	N°	%	N°	%
Tape Measure	110	(100)	100	(91)	2	(2)	0	(0)	1	(1)	7	(6)
Framing Square	107	(97)	80	(75)	12	(11)	3	(3)	3	(3)	8	(8)
Transit	90	(82)	13	(14)	25	(28)	24	(27)	20	(22)	8	(9)
Leveling Rod	89	(81)	35	(39)	21	(24)	20	(22)	6	(7)	7	(8)
Survey Stick	82	(75)	19	(23)	22	(27)	23	(28)	9	(11)	9	(11)
Calculator	70	(64)	29	(41)	21	(30)	10	(14)	3	(4)	7	(10)
Rafter Tables	59	(54)	12	(20)	8	(14)	16	(27)	17	(29)	6	(10)
Gauges or Dials	52	(47)	12	(23)	15	(29)	15	(29)	5	(10)	5	(10)
Scales on Equipment	39	(35)	5	(13)	11	(28)	13	(33)	8	(21)	2	(5)

GEOMETRY SKILLS	Total Yes		Daily		Weekly		Monthly		Yearly		Varies	
	N°	%	N°	%	N°	%	N°	%	N°	%	N°	%
Area	98	(89)	32	(33)	37	(38)	18	(18)	2	(2)	9	(9)
Square Footage	96	(87)	33	(34)	33	(34)	12	(13)	9	(9)	9	(9)
Angles on Miter/Table Saw	95	(86)	41	(43)	27	(28)	13	(14)	6	(6)	8	(8)
Perimeter	94	(85)	31	(33)	26	(27)	25	(26)	4	(4)	8	(9)
Circumference	85	(77)	18	(21)	21	(25)	25	(29)	12	(14)	9	(10)
Volume	79	(72)	21	(27)	26	(33)	16	(20)	8	(10)	8	(10)
Board Feet	71	(65)	16	(23)	16	(23)	17	(24)	17	(24)	5	(7)
Weight	50	(45)	14	(28)	9	(18)	13	(26)	10	(20)	4	(8)
Loads (SWL)	36	(33)	7	(11)	8	(22)	13	(36)	5	(14)	3	(8)

ALGEBRA SKILLS	Total Yes		Daily		Weekly		Monthly		Yearly		Varies	
	N°	%	N°	%	N°	%	N°	%	N°	%	N°	%
Right Angles	106	(96)	74	(70)	17	(18)	5	(5)	2	(2)	8	(8)
Depth of Cut	99	(90)	67	(68)	18	(18)	6	(6)	3	(3)	5	(5)
Rectangles	97	(88)	55	(57)	22	(23)	8	(8)	3	(3)	9	(9)
3-4-5 Formula	97	(88)	37	(38)	33	(34)	13	(13)	5	(5)	9	(9)
Perpendicular	94	(85)	57	(61)	21	(22)	8	(9)	0	(0)	8	(9)
Curves/Arcs	93	(85)	23	(25)	19	(20)	29	(32)	15	(16)	7	(8)
Triangles	91	(83)	39	(43)	18	(20)	18	(20)	9	(10)	7	(6)
Tolerance	72	(65)	48	(67)	12	(17)	5	(7)	3	(4)	4	(5)
Temperature	58	(53)	25	(43)	13	(22)	10	(17)	6	(10)	4	(7)
Pressure	52	(47)	21	(40)	15	(29)	6	(6)	8	(15)	2	(4)

Total Yes Responses and Frequency of Use - Communication Skills

WRITING SKILLS	Total Yes		Daily		Weekly		Monthly		Yearly		Varies	
	N°	%	N°	%	N°	%	N°	%	N°	%	N°	%
Keep Track of Hours	86	(78)	68	(79)	10	(12)	0	(0)	4	(5)	4	(5)
Make Drawings/Sketches	76	(69)	34	(45)	27	(36)	8	(11)	1	(1)	6	(8)
Fill in Forms	68	(62)	20	(29)	18	(26)	11	(16)	15	(22)	4	(6)
Leave Notes/Memos	66	(60)	28	(42)	20	(30)	10	(15)	4	(6)	4	(6)
Fill in Time Cards	60	(55)	38	(63)	17	(28)	1	(2)	3	(5)	1	(2)
Write Job Site Diaries	45	(41)	31	(69)	6	(13)	2	(4)	4	(9)	2	(2)
Write Instructions	43	(39)	14	(33)	16	(37)	8	(19)	2	(5)	3	(7)
Write Safety Reports	35	(31)	2	(6)	18	(51)	8	(23)	3	(9)	4	(11)
Write Work Orders	30	(27)	10	(33)	9	(30)	6	(20)	3	(10)	2	(7)
Write Letters	17	(15)	3	(18)	3	(18)	9	(53)	2	(12)	0	(0)

ORAL SKILLS	Total Yes		Daily		Weekly		Monthly		Yearly		Varies	
	N°	%	N°	%	N°	%	N°	%	N°	%	N°	%
Follow Directions	106	(96)	95	(90)	3	(3)	0	(0)	1	(1)	7	(7)
Ask Questions	106	(96)	94	(89)	3	(3)	0	(0)	1	(1)	8	(8)
Give Directions	92	(84)	71	(77)	7	(8)	6	(7)	2	(2)	6	(7)
Take Messages	77	(70)	55	(71)	11	(14)	3	(4)	3	(4)	5	(6)
Speak in Small Groups	73	(66)	47	(64)	14	(19)	4	(5)	2	(3)	6	(8)
Speak with Outside People	72	(65)	21	(29)	28	(39)	10	(14)	4	(6)	9	(13)

TOOL/JOB SKILLS	Total Yes		Daily		Weekly		Monthly		Yearly		Varies	
	N°	%	N°	%	N°	%	N°	%	N°	%	N°	%
Work with Other Trade Groups	101	(92)	71	(70)	15	(15)	6	(6)	1	(1)	8	(8)
Identify Defects/Damages	87	(79)	38	(44)	20	(23)	16	(18)	3	(3)	10	(11)
Use Hand Signals	83	(75)	37	(45)	20	(24)	11	(13)	4	(5)	11	(13)
Coordinate Work with Other Trades	72	(65)	39	(54)	15	(21)	9	(13)	3	(4)	6	(8)
Use the Telephone	63	(57)	36	(57)	11	(17)	7	(11)	4	(6)	5	(8)
Use Fax, Copier,or Typewritter	29	(26)	9	(31)	8	(28)	4	(14)	3	(10)	5	(17)

Appendix 4

References

BC Construction Industry Skills Improvement Council (1993). Determining Workplace Basic Skills A Literacy Task Analysis (LTA) of the Carpenter and the Carpenter Foremen. New Westminister, BC: author

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