SFU BCIT

A Winning Ticket

WOMEN IN TRADES IN BRITISH COLUMBIA AND YUKON

MIKE GDOWSKI

A report prepared for **Tradeswomen: A Winning Ticket**, a conference sponsored by the Ruth Wynn Woodward Chair in Women's Studies at Simon Fraser University and the British Columbia Institute of Technology with the support of the BC Construction Association. Vancouver, April 20–21, 2007.

RESEARCHED AND WRITTEN BY **HEATHER MAYER AND KATE BRAID** SIMON FRASER UNIVERSITY

contents

Thank you
Given the complexity of the women in trades issue and the challenges of keeping accurate gendered records, the authors would like to thank the many people in government, industry, labour, education and individuals who gave often extensive information and feedback to earlier drafts of this report. All mistakes, of course, are our own.

figures

executive summary and recommendations

Construction is Booming in BC and Yukon.[1]
In BC, in particular, a number of factors including the upcoming 2010 Olympics, low interest rates, an increase in population (that has led to a building boom), and the rapidly approaching retirement of a large number of skilled tradespeople, have resulted in a serious, long-term shortage of skilled labour.

Status of Women in Trades/Trades Training in BC and Yukon
To the extent figures are available, this study compares BC and Yukon to Canadian national figures and to Alberta, another booming economy.

It focuses primarily on apprenticeable building trades such as carpenter, plumber and electrician.[2]

Census Canada reports the percentage of women in the construction trades in BC has increased only slightly, from 0.7% in 1971 to 3.0% in 2001. By 2006 the Labour Force Survey recorded 3.1%.

The number of women in trades is often inflated by including cooking, baking and hairdressing which are also "apprenticeable trades," but more traditionally female. These three are not included in any of the figures in this report.

Changes in record keeping in BC make it difficult to find accurate figures for women in trades training but they are somewhat less than 3%.

Significant differences in the numbers of female apprentices, as recorded by the BC Industry Training Authority (ITA) and by the BC Ministry of Advanced Education, further complicate tracking women in trades.

Yukon census workforce statistics are unreliable due to a small population and their records of women in trades training — while more precise — skew averages because there are so few (a total of 17 women as of February 2007).

Issues Raised in this Report

Retention
Figures show an increase in recruitment — in women's interest in trades training. But retention — the number of women staying in trades — remains virtually static.

Barriers, including tokenism
There have been numerous studies of the barriers to women in trades. (See footnote 24.) One additional but rarely mentioned barrier that might throw some light on why women continue to make so little progress, is that of tokenism. Research shows that any identifiable group of employees making up less than 15% of a workforce (in this case, women) will be identified as 'tokens.' Being a token — student or employee — leads to isolation and makes acceptance by the majority far more difficult.

Support for under-represented groups
There is little public support for women to help them reach the 15% critical mass necessary for acceptance in the trades.

Training completion
Although it may be too early to confirm (or may change with the slowing of the boom) research suggests a concern that women working in trades may not be returning to school for annual training to earn their journey tickets.

1 "Construction," Available from http://handson.workfutures.bc.ca/profiles/ind.cfm?id=5&lang=en&site=graphic.; Yukon Government, Department of Economic Development, *Yukon Economic Outlook 2006* (Whitehorse, Yukon: 2006).

2 Because of the increasingly complicated sub-divisions of trades training, the list of apprenticeable trades offered at BCIT—the largest trades training institution in BC—was used as a master list. Cooking, baking and hairdressing were excluded for reasons given above.

Recommendations

There have been excellent studies of women in trades and many outstanding lists of recommendations aimed at increasing their numbers.[3] A 1997 report noted that many of the recommendations coming from different groups were similar, but they were rarely put into practice.[4] This leads to the first two recommendations:

General Recommendations

1. That a firm commitment be made and active leadership be shown on the part of educators, unions, industry and government to take strategic steps to increase women's participation in trades.
2. That trades training schools, industry, unions and government coordinate and keep clear, gender-separate statistics on the number of women and men in apprenticeship programs and on completion rates.

Conference Recommendations

The fifty-nine tradeswomen at the *2007 Tradeswomen: A Winning Ticket* conference made the following recommendations, in priority order. Many of them apply equally to improving the situation for males as well as females. One of the informal slogans of the conference was, 'What's good for the women, is good for the men.'

1. From Kindergarten to Grade 12, encourage early exposure of girls to the idea of trades work:
   - » educate counselors on the desirability of trades work
   - » promote tradeswomen speakers
   - » hold after-school programs
   - » send students to job sites
2. To help break isolation and help women access jobs, create and maintain a website for women in trades. (NB: As a result of *Tradeswomen: A Winning Ticket*, this site is being developed by the BC Construction Association. It will be online in late 2007: www.bcconstructionwomen.com)
3. Form and support local Women In Trades (and Technologies) support groups. (Also as a result of the conference, initial efforts toward this have begun. In the Lower Mainland contact Amy at W_I_T_T@hotmail.com. The website will also support mentoring programs.)
4. Return to fully funded apprenticeship training for women and men in BC.
5. Market the value of women trades workers to employers, making a business case for the competitive advantage of hiring women (i.e. a large pool of labour, attention to safety, reliable, etc.).
6. Increase the general visibility of tradeswomen:
   - » in company promotions
   - » on web sites, posters, etc.
   - » stating specifically: women are wanted as apprentices
7. Assure adequate, accessible childcare and flexibility for parents in the workday (time off, worksharing, etc.)
8. Urge employers to develop a strategic plan to recruit and train women, aiming for 15% women on every job.
9. Institute employment equity on public construction projects.
10. Create mentorship programs for tradeswomen.
11. Acknowledge and recognize good employers.
12. Present trades as an option for university students.
13. Provide more leadership training for women.
14. Make trades training more available in smaller communities.
15. Make changes to the workplace culture, such as:
    - » training journeypeople in how to instruct
    - » discourage the attitude that 'you should suffer because I did.'
16. Develop support systems and incentives to keep retiring and laid-off tradespeople in trades, for example, by hiring them for training or counselling purposes.

---

3 See for example: Canadian Apprenticeship Forum, *Accessing and Completing Apprenticeship Training in Canada: Perceptions of Barriers Experienced by Women* (2004); *Overview of Equity in Apprenticeship: A Paper Prepared for the ITAC Interim Standing Committee on Under-Represented Groups* (1997), www.men-women-tools.ca/documents/Equity_overview_ITAC.html; Elizabeth Carriere, *Gender Equity Framework Report (Policy & Programatic Implementation)* (Victoria: Ministries of Skills, Training and Labour and Women's Equality, 1995); Sharon Goldberg, *Women in Construction: A Report on Access, Training and Retention in the Construction Trades: A Research Project of the Amalgamated Construction Association of BC* (1992); and Marcia Braundy, *Surviving and Thriving: Women in Trades & Technology and Employment Equity* (Kootenay Women in Trades & Technology, 1989).

4 *Overview of Equity in Apprenticeship: A Paper Prepared for the ITAC Interim Standing Committee on Under-represented Groups.*

the skill shortage

The Construction Sector Council (CSC) estimates that during the next ten years, the Canadian construction industry will need to replace more than 150,000 retiring workers — 19 per cent of the current workforce — in addition to hiring new employees. In British Columbia alone, 22,644 construction workers — about 2,500 per year are expected to retire between 2005 and 2014.[5] According to the BC Work Futures website, the provincial construction industry can expect a total of 4,690 new job openings a year between now and 2011, due to a combination of retirements and jobs newly created because of industry growth[6] Government and industry have responded by setting up various programs and websites aimed at increasing general interest in trades training, and by inviting temporary foreign workers into skilled trades positions.[7] In such a climate, one would assume that women — almost 52 per cent of the population — would be seen as a valuable labour resource.

women's wages

From women's perspective, one reason to see construction as a viable option to more traditional work is the incentive of higher wages, for the traditional gap between men's and women's wages continues. In 2001, non-Aboriginal women working full-year, full-time in the BC labour force earned 71.5% of what non-Aboriginal men earned. Aboriginal males earned 78% of what non-Aboriginal males earned, while Aboriginal females had the largest wage gap, at 58% (see Figure 1).

FIGURE 1[8]

2001 BC AVERAGE ANNUAL INCOME
For those who worked full-year, full-time

	wages ($)	% non-aboriginal male income
non-aboriginal male	50,443	100
aboriginal male	39,351	78
non-aboriginal female	36,085	71.5
aboriginal female	29,268	58

Trades work not only provides satisfying work, but is one of the few areas where the equality of male and female wages on average is higher than in other industries. In 2000 in the construction trades in British Columbia, the average annual wage for males was $27, 564, while the average for females was $27,275.[9] This means, on average, women in construction earn 98.9% of what men make in the same trade.[10] Hourly wages for union members — the same for men and women — provide a better example of the comparatively high wages tradeswomen can earn. In Vancouver in 2006, Statistics Canada reported that unionized carpenters made $33.43 an hour (including benefits), electricians made $36.54 and plumbers $35.16.[11]

The large percentage of women in the Canadian workforce — 44% — who are currently employed in clerical, retail or service occupations, earn 20 to 30 per cent less than women in the trades labour force.[12]

5 The Canadian Construction Association, *Canadian Construction Industry Forecast* (2006).

6 "Construction," http://handson.workfutures.bc.ca/profiles/ind.cfm?id=5&lang=en&site=graphic.

7 Websites include: www.workfutures.bc.ca; www.apprenticetrades.ca; www.carsyouth.ca/cars; www.northernopportunities.bc.ca; www.theskilledlife.com. Programs include Aboriginal Community Career and Employment Services Society (ACCESS); Secondary School Apprenticeship (SSA); Accelerated Credit Enrolment in Industry Training (ACE IT); SkillPlan; Trades Discovery for Women (BCIT); Skilled Trades Exploratory Program (STEP) for Women (Selkirk College); Women Building Futures (Edmonton, Alberta); and Women Exploring Trades and Technology (Yukon College). There are also GETT Camps (Girls Exploring Trades and Technology) in several provinces.

8 2001 Census 97F0011XCB2001047.

9 These figures are somewhat misleading; many individual tradespeople make a far higher wage. Factors that lower the 'average' figure include whether someone works at a union or non-union wage, regional differences in employment, and the fact of seasonal work. Also, the current building boom had not yet taken effect in 2000.

10 Average wage information Statistics Canada Report 97F0019X-CB2001003.

11 "Capital Expenditure Price Statistics," Statistics Canada 62007XWE, (Feb.2007).

12 2001 Census; www.otan.dni.us/webfarm/laes/modules/mod26/m26resc3.htm

so where are the women in trades?

The number of females working in the construction trades has increased, in BC, from a total of 510 women in 1971, to 2100 in 2006 (see Figure 2). But because of the increase in total numbers of construction workers in the province, and despite more programs aimed at recruiting women, the actual percentage of women has increased only slightly, from 0.7% in 1971 to 3.1% in 2006 (see Figure 3). Since 2001 it has been lower than the national average (3.2% in 2001 and 3.4% in 2006). The increase in women's participation in Alberta (from 0.9% to 5.3%) is consistently greater.

Due to its small population, Yukon workforce statistics are less reliable due to the territory's small population, but research shows the number of women in trades in the Yukon varies by trade, but is usually in the same 1–3 per cent range.

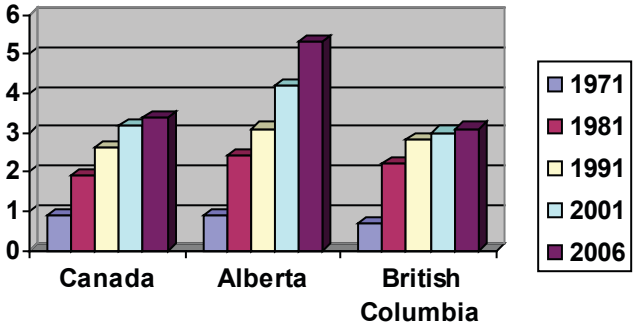
FIGURE 2[13]

TOTAL CONSTRUCTION TRADES
Numbers of women

	1971	1981	1991	2001	2006
Canada	5125	15,270	8485	11,240	12,200
Alberta	490	2770	1055	2050	3100
British Columbia	510	2465	1325	1625	2100

FIGURE 3[14]

TOTAL CONSTRUCTION TRADES
Percentage of women



The following graphs show the percentages of women in specific trades in BC and compares them to those of women in Canada and in Alberta, another booming economy. Some, such as carpenters, plumbers and painters and decorators, show a slow increase (see Figures 4, 6 and 14). Others, such as sheet metal, welding, cabinetmaking and roofing, peaked in 1981 (see Figures 5, 8, 10 and 12). Many, including electricians, glaziers and machinists, show mixed growth (see Figures 7, 13 and 15). For the actual numbers of women working in these trades in BC and Alberta see Appendix a.

Women Working in Specific Trades 1971–2001

FIGURE 4

CARPENTERS
Percentage of women

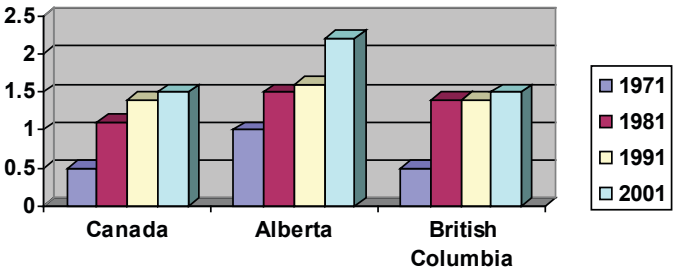
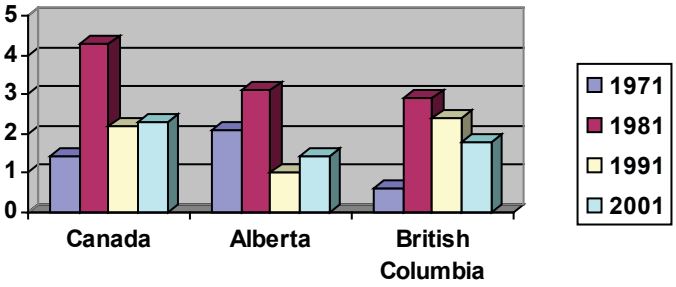


FIGURE 5

SHEET METAL
Percentage of women



13 Canadian Census 1971, 1981, 1991, 2001; *Labour Force Survey* 2006.

14 Canadian Census 1971, 1981, 1991, 2001; *Labour Force Survey* 2006.

FIGURE 6[15]

PLUMBERS, PIPEFITTERS AND GASFITTERS
Percentage of women

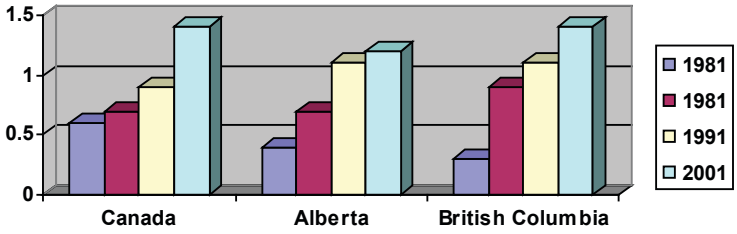


FIGURE 7[16]

ELECTRICIANS
Percentage of women

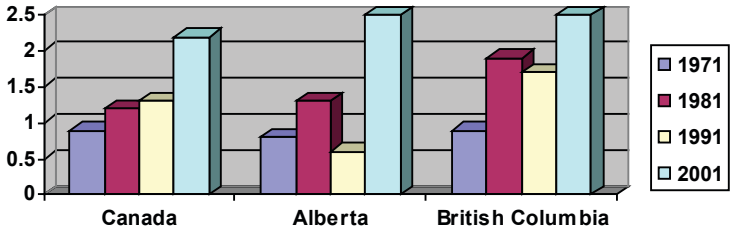


FIGURE 8[17]

WELDERS
Percentage of women

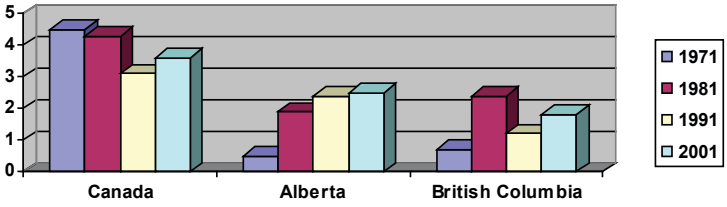


FIGURE 9[18]

AUTOMOTIVE SERVICE TECHNICIANS AND MECHANICS
Percentage of women

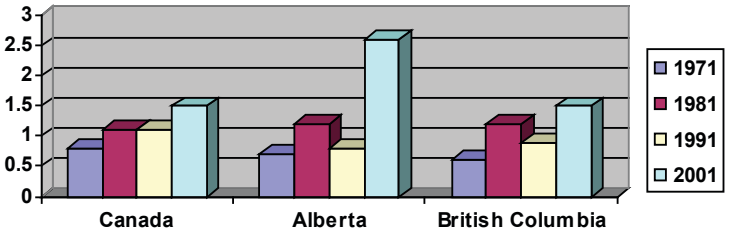


FIGURE 10

CABINETMAKERS
Percentage of women

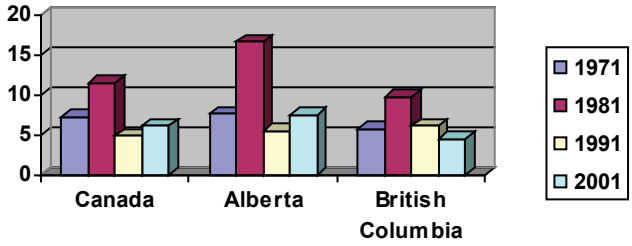
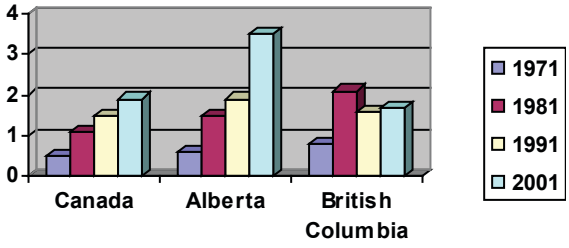


FIGURE 11[19]

MASONRY AND PLASTERING TRADES
Percentage of women



15 Includes 1971 and 1981 Census category pipefitting, plumbing and related and 1991 and 2001 category plumbers, pipefitters and gasfitters.

16 1971 and 1981 listed as construction electricians and repairmen, 1991 and 2001 listed as electricians (except industrial and power system).

17 1971 and 1981 listed as welding and flame cutting occupations, 1991 as welders and soldering machine operators, 2001 as welders and related machine operators.

18 1971 and 1981 listed as motor vehicle mechanics and repairmen, 1991 and 2001 listed as automotive service technicians, truck mechanics and mechanical repairers.

19 1971 and 1981 census includes the categories: brick and stone masons and tilesetters; concrete finishing and related occupations; plasterers and related occupations. 1991 and 2001 census includes the categories: bricklayers; concrete finishers; tilesetters; plasterers, drywall installers, finishers and lathers.

FIGURE 12[20]

ROOFERS AND SHINGLERS
Percentage of women

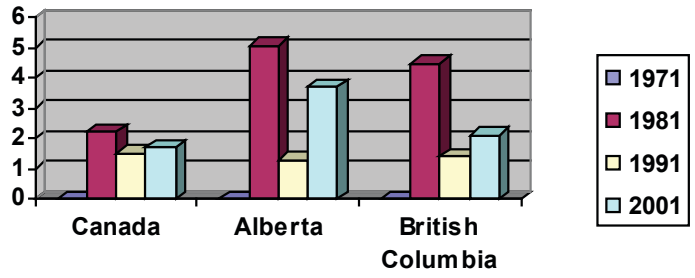


FIGURE 13

GLAZIERS
Percentage of women

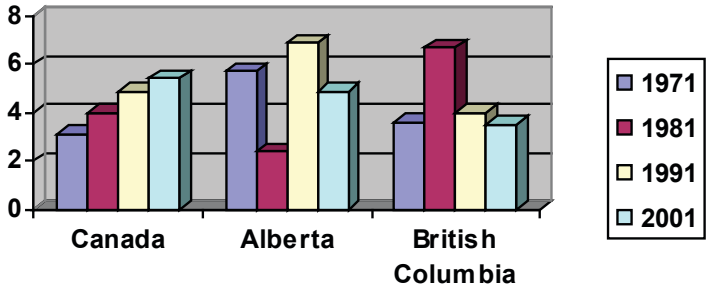


FIGURE 14[21]

PAINTERS AND DECORATORS
Percentage of women

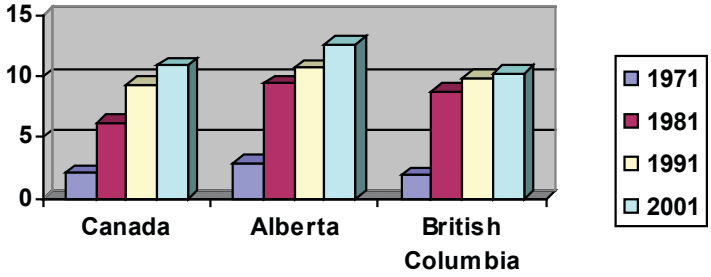


FIGURE 15[22]

MACHINISTS, MILLWRIGHTS, TOOL AND DIE MAKERS
Percentage of women

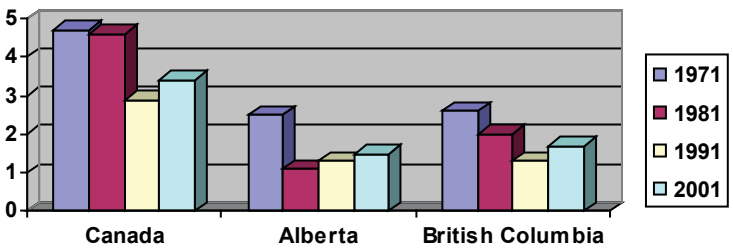
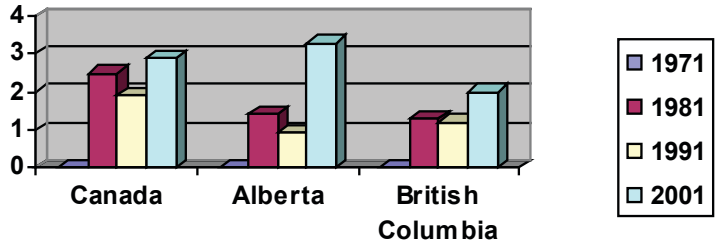


FIGURE 16[23]

METAL FORMING, SHAPING AND ERECTING (MINUS WELDING AND SHEET METAL)
Percentage of women



20 1971 and 1981 listed as roofing, waterproofing and related occupations.

21 1971 and 1981 listed as painters, paperhangers and related occupations.

22 Includes 1971 and 1981 categories: machine tool operation occupations; machinist and machine tool setting-up occupations; tool and die makers. 1991 and 2001 categories: construction millwrights and industrial mechanics; machinists and machine and tooling inspectors; tool and die makers.

23 Includes 1971 and 1981 categories: forging occupations; boilermakers, platers, and structural metal workers; structural metal erectors. 1991 and 2001 categories: boilermakers; structural metal and platework fabricators and fitters; ironworkers; blacksmiths and die setters.

obstacles

The obstacles women face in accessing and training in male-dominated occupations have been well-documented.[24] A recent example is a 2004 report by the Canadian Apprenticeship Forum (CAF) listing nine generic barriers experienced by all apprentices, and how each barrier specifically affects women.[25]

The first major barrier is "negative attitudes to apprenticeship and a poor image of trades on the part of young people, parents, and employers." The second is "a lack of information and awareness of apprenticeship often reinforced by a lack of support for trades among school teachers and guidance counselors, and within school curricula." The report found women have even less access then men when it comes to "informal networks" which are "often the gateways to opportunity in the skilled trades." The presence of strong female role models is seen as the best chance to overcome this barrier.[26]

The third barrier involves an "unwelcoming workplace or training environment." With employers, this includes discrimination in hiring, viewing female apprentices as risks instead of investments, and applying different hiring standards to male and female applicants; with co-workers and classmates it consists of harassment and unfair expectations of female workers. Other barriers include the demands of women's role as primary caregivers and the lack of adequate access to childcare and issues of safety and security in work camps.[27]

Another barrier not often specifically mentioned is women's token representation on the worksite. Once a woman has been hired, she often finds herself the only female on the job. This tokenism further isolates her and makes her position at work more difficult. Rosabeth Moss Kanter and others have done extensive research on the phenomenon of women and other minorities in the corporate workplace, which can easily be applied to the trades. Their studies show that employees are seen as "tokens" as long as they make up less than 15% of the total workforce. There are three characteristics of tokens: first, they are more visible than other workers. Second, differences between the token and the rest of the group are exaggerated. And third, in what Kanter calls "assimilation", the characteristics of the token are warped to fit the stereotypes of their social group. Simply put, in any traditionally male-dominated workplace, whether it be corporate or the trades, the more women there are, the easier it gets for all of them.[28]

24 For example see:, Kristin Hulme, "Making the Shift from Pink Collars to Blue Ones: Women's Non Traditional Occupations," *Labour/Le Travail* 57(Spring 2006) available from www.historycooperative.org.proxy.lib.sfu.ca/journals/11t/57/hulme.html; D. Rexe et al., *Equity Access to Apprenticeship* (Burnaby, BC: Apprenticeship Branch/ITAC, 1996); E. Carriere, *Gender Equity Framework Report*; Kate Braid, "The Culture of Construction: or, Etiquette for the Non-Traditional," in *Training the Excluded for Work: Access and Equity for Women, Immigrants, First Nations, Youth, and People with Low Income* M.G. Cohen, ed. (Vancouver: University of British Columbia Press, 2003): xii, 276; and Kate Braid, "Invisible Women: Women in Non-Traditional Occupations in BC" (Unpublished MA thesis, Simon Fraser University, 1979). See also Dr. Marcia Braundy's website, http://www.men-women-tools.ca for a wealth of historic reference materials.

25 Canadian Apprenticeship Forum, "Accessing and Completing Apprenticeship Training in Canada." (2004)

26 Ibid., 3-4.

27 Ibid., 4-9.

28 Rosabeth Moss Kanter, *Men and Women of the Corporation* (New York: Basic Books, 1977): 348; Yolanda Flores Niemann, "The Psychology of Tokenism: Psychosocial Realities of Faculty of Color," in *Handbook of Racial and Ethnic Minority Psychology* (Thousand Oaks, CA: Sage Publications, 2003): 100.

women in training

Why Apprenticeship Matters

For centuries, trades people have been taught through a system called "apprenticeship" that is a mixture of in-school (theoretical) and hands-on (practical) work experience. Once "indentured" to an employer by a signed legal contract, an apprentice goes to school for about six weeks a year (depending on the trade) and completes ten months of paid on-the-job work. Most trades require about four years of training. Upon passing the final exam (which can also be written, or "challenged," by someone who has only work experience, say, without theoretical training) the apprentice is given a Trades Qualification Certificate or "ticket" as a journeyperson.

Certain trades are also part of a national Red Seal certification program by which, after completion of a national exam, the apprentice is certified as a qualified Red Seal tradesperson in every province and territory that recognizes that Red Seal trade.

In the seasonal and fluctuating industry that is construction, an apprentice who completes their training as opposed to one who does not, is more employable, more flexible (able to start their own small business based on the breadth of their training), and more able to follow job opportunities.

Costs of Apprenticeship Training

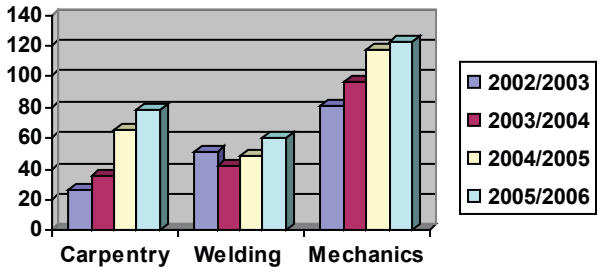
Many employers hesitate to take any apprentice — male or female — because of the presumed costs involved in training, but a 2006 report from the Canadian Apprenticeship Forum shows this concern has little foundation. The report examines fifteen trades and finds that only three (Construction Electrician, Mobile Crane Operator and Sheet Metal Worker) incur a net cost to the employer in the first year of apprenticeship. Otherwise, in all trades studied, benefits exceed final costs. The study finds that over the course of an apprentice's training, employers receive a benefit of $1.38 for every $1 spent (not including tax credits). The study does not directly compare the price of training an apprentice to that of hiring an already-trained journeyperson who would not incur training costs but would be paid a higher wage. The study does find, however, that "homegrown" journeypersons are on average 26.5% more productive than externally trained journeypersons.[29]

Women in Pre-Trades Training: The Issue of Recruitment

Women-only pre-trades programs (sometimes called "orientations to trades") such as BCIT's Trades Discovery for Women (TDFW), Selkirk College's Skilled Trades Exploratory Program (STEP) for Women, Yukon College's Women Exploring Trades and Technology, and Edmonton's Women Building Futures, are an excellent way to help women feel comfortable with tools, find the trade they prefer, become familiar with the trades culture and become generally more employable[30]. Although only preliminary data is available at the time of this report, it shows that women's interest in entry-level training programs is increasing (see Figure 17).

FIGURE 17

WOMEN IN SELECTED ENTRY-LEVEL TRAINING PROGRAMS IN BC[31]
Number of women enrolled



One innovative move toward encouraging more young people, including women, to consider trades work, is the BC Industrial Training Authority's focus on Accelerated Credit Enrollment in Industry Training (ACE IT) and Secondary School Apprenticeship (SSA) programs in high schools. In April 2007 there were 117 females enrolled in the ACE IT apprenticeship programs looked at in this report.[32]

29 Canadian Apprenticeship Forum, *Apprenticeship: Building a Skilled Workforce for a Strong Bottom Line* (June 2006). This can be accessed at www.caf-fca.org/files/access/Return_On_Training_Investment-Employers_report.pdf.

30 BCIT's TDFW graduates were so successful that young men requested the same "orientation" program and there are now simultaneous programs for mixed classes as well as women-only. The Women Building Futures program in Edmonton has a success rate of 95%, measured by a woman being hired immediately upon graduation and indentured for training within six months.

31 Ministry of Advanced Education.

32 Industry Training Authority, "Gender of all Active ACE IT Flagged Records" (April 2007).

Women in Apprenticeship

One of the key goals of this report was to ascertain the number of women currently enrolled in apprenticeship training programs in BC and the Yukon, an apparently easy assignment which has proven somewhat difficult due to inconsistent collection of gender statistics. For example, if an application form has no field for gender or if gender selection is made optional — as it was by the BC Industry Training and Apprenticeship Commission (ITAC) in 1999 — it becomes impossible to accurately track numbers of women. During the transition period from ITAC to the Industrial Training Authority (ITA) — the current body that oversees BC's apprenticeship — the field for gender was removed completely for about two years. The ITA later reinstated the field but reporting gender is not currently mandatory, and since the number of undisclosed are sometimes in the hundreds, tracking the number of women in trades training is difficult. (See Figure 18)

In the search for more specific data, gender statistics were then requested from individual public colleges that sponsor apprenticeship programs. Here a further difficulty arose that while ITA statistics are based on a fiscal year, those of the BC Ministry of Advanced Education (under which public colleges work) operate on a school year. (To complicate things further, Canadian national statistics are based on the calendar year.) Nonetheless, several schools were happy to submit what they had. Others did not keep statistics on enrollment by gender, or referred to the ITA list.

FIGURE 18[33]

BC INDUSTRY TRAINING AUTHORITY (ITA) REGISTERED APPRENTICES
October 2006

	Female	Male	Undisclosed	Total	% Female (w/undisclosed)	% Female (w/o undisclosed)	% Undisclosed
Automotive	94	2303	537	2934	3.2	3.9	18.3
Benchperson	0	28	2	30	0	0	6.7
Boilermaker	1	76	24	101	1	1.3	23.8
Carpentry	129	4484	830	5443	2.4	2.8	15.2
Commercial Trans.	6	456	108	570	1.1	1.3	18.9
Electrical	135	4132	978	5245	2.6	3.2	18.6
Gasfitting	2	179	18	199	1	1.1	9
Glazing	5	190	30	225	2.2	2.6	13.3
Heavy Duty Mechanic	13	839	153	1005	1.3	1.5	15.2
Inboard/Outboard	1	41	23	65	1.5	2.4	35.4
Industrial Instrumentation	9	155	35	199	4.5	5.5	17.6
Heat/Frost Insulation	5	75	20	100	5	3.6	20
Ironworker	0	51	23	65	1.5	2.4	35.4
Joinery	36	400	89	525	6.9	8.3	17
Machinist	6	367	69	442	1.4	1.6	15.6
Millwright	17	804	163	984	1.7	2.1	16.6
Motorcycle Mechanic	3	48	8	59	5.1	5.9	13.6
Plumbing	36	2059	497	2592	1.4	1.7	19.2
Refrigeration	2	404	110	516	0.4	0.5	21.3
Circular Sawfiler	0	28	5	33	0	0	15.2
Sawfitting	0	64	9	73	0	0	12.3
Sheet Metal	11	659	155	825	1.3	1.6	18.8
Steamfitting	12	218	28	258	4.7	5.2	10.9
Steel Fabrication	9	438	100	547	1.6	2	18.3
Welding	26	641	35	702	3.7	3.9	5
TOTAL	**558**	**19,139**	**4049**	**23,746**	**2.3**	**2.8**	**17.1**

33 Source: ITA AIMS Reporting System, as of October 2006. Due to the variety of automotive apprenticeships, they have been simplified here into one category. This includes technician, partsperson, mechanic, paint/refinish, collision repair and glass installation.

The BC Ministry of Advanced Education was able to provide detailed information on apprenticeship enrollment, with a much smaller number of unknowns in the gender category (see Figure 19).[34] However, there was a dramatic difference between these and the ITA's numbers of apprentices. For the twenty-five trades looked at in the school year 2005/2006, the Ministry of Advanced Education reported a total of 8,323 apprentices while the ITA reported 23,746 for roughly the same time period (as of October 2006).

A typical example was the number of carpenter apprentices. As reported by the ITA these were: Female: 129 Male: 4484 and Undisclosed: 830 for a total of 5443. If the Undisclosed category is excluded, the percentage of women apprentices is 2.8%. If it is assumed that all Undisclosed are male, the percentage of women apprentices is 2.4%. In contrast, the Ministry of Advanced Education figures for carpenter apprentices were: Female:32 Male: 1675 and Unknown: 0 for a total of 1707, or 1.9% women.

FIGURE 19[35]

BC MINISTRY OF ADVANCED EDUCATION APPRENTICES REGISTERED IN TRAINING PROGRAMS
2005/2006 School Year

	Female	Male	Unknown	Total	% Female
Automotive	33	1239	2	1274	2.6
Benchperson	1	22	0	23	4.3
Boilermaker	0	36	0	36	0
Carpentry	32	1675	0	1707	1.9
Commercial Trans.	5	194	0	199	2.5
Electrical	52	2128	2	2182	2.4
Gasfitting	0	40	0	40	0
Glazing	5	90	0	95	5.3
Heavy Duty Mechanic	3	381	0	384	0.8
Inboard/Outboard	2	47	0	49	4.1
Industrial Instrumentation	4	110	1	115	3.5
Heat/Frost Insulation	2	35	0	37	5.4
Ironworker	0	27	0	27	0
Joinery	18	179	0	197	9.1
Machinist	3	206	0	209	1.4
Millwright	8	339	0	347	2.3
Motorcycle Mechanic	0	12	0	12	0
Plumbing	10	545	2	557	1.8
Refrigeration	0	59	0	59	0
Circular Sawfiler	0	37	0	37	0
Sawfitting	1	45	0	46	2.2
Sheet Metal	2	253	0	255	0.8
Steamfitting	1	51	0	52	2
Steel Fabrication	3	227	2	232	1.3
Welding	6	146	0	152	3.9
TOTAL	**191**	**8123**	**9**	**8323**	**2.3**

34 British Columbia Post-Secondary Central Data Warehouse, October 2006 Submission.

35 Due to the variation in the types of apprenticeship programs offered at different trades schools, the category "Automotive" is a combination of several different types of automotive trades programs: service technician, body, mechanic, paint/ refinish,, collision repair, and glass installer. The number of unknowns has been subtracted from the total when calculating the percentage of women in each trade. Source: British Columbia Post-Secondary Central Data Warehouse, October 2006 Submission.

How We Count Apprentices

It is impossible to measure women's success rates without accurate statistics. By any count, the number of female apprentices in BC is less than 3%, but how to explain the large anomaly in total numbers of apprentices between the figures of the Ministry of Advanced Education and those of the Industrial Training Authority?

One possible reason might be the slight differences in time periods measured; the ITA measures by fiscal year and the Ministry of Advanced Education by academic year.

A second possible explanation may be that the post-secondary data — unlike that of the ITA — does not include records of apprentices trained through private institutions or organizations. These are estimated by the Ministry of Advanced Education to be about 10% of those who complete apprenticeships in BC.

Another reason for the large difference could be the changes currently being made to some programs, notably welding, which make figures difficult to judge. According to BCIT, the province's largest trades school, only about 3% of BC welders currently follow the apprenticeship route that is reflected in the Ministry of Advanced Education's figures (see Figure 19) though the ITA is seeking to categorize all welding as apprenticeable.

Perhaps the most significant reason for the disparity in figures may be differences in the definition of "apprentice." Ministry of Advanced Education figures include only those students who actually participated in technical training during a specific academic year (in this case, 2005-2006). ITA figures, on the other hand, include all registered apprentices, whether or not they have attended in-school technical training for the year in question. This would include those who have newly registered and not yet gone to school, or who are registered but have not attended school within the past 16 months. (It should be noted that although apprentices aim for training once a year, the ITA acknowledges a lag time of up to 16 months between technical training sessions as not uncommon, especially during 'boom' times such as these, when apprentices — and their employers — would rather be working.)

Unlike the Ministry of Advanced Education, the ITA also counts as 'apprentice' all those who have completed their in-school training but not other requirements such as work hours, or passing the certification exam. And it includes those who may have 'challenged' their exams to receive technical training credit without actually attending the level courses

Finally, although the ITA includes 'Youth' in their own separate category, it also includes them in its total of 'Active Participants.' By 'Youth' is meant participants SSA and ACE IT programs. In the ACE IT program, high school courses are credited toward apprenticeship. As of 2006/07, Foundation (entry-level) students will also be added to this list and counted as apprentices.

Regardless of the wide fluctuations in reported figures, women's participation in apprenticeship training programs in BC is clearly between 1 and 3%. According to Ministry of Advanced Education figures for 2005/2006, several apprenticeship programs — boilermaker, gasfitter, ironworker, motorcycle mechanic, refrigeration, and circular saw filer—had no women registered at all, but the programs with the largest number of participants — electrical, carpentry, and automotive — each had between 2 and 3% female apprentices (see Figure 19). Electrical appears to be the most popular trade for women with 52 women or 27.2% of all female apprentices for the school year 2005-2006 in electrical training. Next most popular was carpentry with 32 women or 16.8% of all female apprentices.

Apprenticeship information for the Yukon has been provided by the Yukon Department of Education (see Figure 20). Although many of their programs contain no women at all, the overall percentage of female apprentices seems higher in the Yukon than in BC, at 5.3%, though this represents only 17 women. Again, the most popular are Carpentry with 35.3% of all female apprentices, and Construction Electrician with 29.4%. The Yukon Government has a specific section of their Education Department website dedicated to women in trades training.[36]

FIGURE 20

APPRENTICESHIP PROGRAMS IN YUKON
February 2007

	Female	Male	Total	% Female
Automotive Painter	0	1	0	0
Automotive Service Tech.	0	21	21	0
Cabinetmaker	0	1	1	0
Carpenter	6	130	136	4.4
Construction Electrician	5	47	52	9.6
Gasfitter	0	1	1	0
Glazier	0	3	3	0
Heavy Duty Equipment Tech.	0	12	1	0
Heavy Equip, Truck & Trans.	0	2	12	0
Industrial Electrician	0	3	3	0
Industrial Mechanic (Millwright)	0	1	1	0
Insulator (Heat and Frost)	0	2	2	0
Machinist	0	2	2	0
Motor Vehicle Body Repair	0	3	3	0
Oil Burner Mechanic	0	2	2	0
Outdoor Power Equip. Tech.	1	2	3	33.3
Painter and Decorator	1	3	4	25
Partsperson	3	22	25	12
Plumber	0	1	1	
Power System Electrician	0	6	6	0
Powerline Technicial	0	3	3	0
Refrigeration and A/C Mech.	0	4	4	0
Roofer	1	11	12	8.3
Sheet Metal Worker	0	4	4	0
Sprinkler System Installer	0	2	2	0
Steamfitter/Pipefitter	0	4	4	0
Welder	0	9	9	0
TOTAL	17	302	319	5.3

36 This can be found at www.education.gov.yk.ca/advanceded/apprenticeship/womapptra.html

changing structures of apprenticeship training in bc: an historical overview

In tracking their slow progress, it might be useful to consider the situation of women in trades in a historic context. Prior to 1997 the apprenticeship system in BC was administered through the Provincial Apprenticeship Board (PAB) and an Apprenticeship Branch under various Ministries. The PAB had equal representation from business and labour plus — as of 1992 — representation from two of the four designated equity groups: women and First Nations. It was advised by a series of Trade Advisory Committees (TACs) representing the various trades, and it received and passed motions presented to it by its Standing Committee on Equity in Apprenticeship. This changed in 1997 when the Industry Training and Apprenticeship Commission (ITAC) was formed to administer apprenticeship training at arm's length from the government. ITAC representation included business, labour and education; equity groups were not specifically represented though there was a mandate in the ITAC legislation to increase the numbers of people in under-represented groups in apprenticeship. In 2002, after a change in provincial government, ITAC began to be shut down and in 2004 it was replaced by the Industry Training Authority (ITA). In 2005, the ITA reported as its mandate, "to expand and improve industry training, through the creation of a more flexible, accountable and — most importantly — industry-led system."[37] The ITA had a much smaller staff than its predecessor, the ITAC, and a nine member board drawn primarily from the employer community.

According to a 2005 report by the Centre for the Study of Living Standards, four main reforms were undertaken. The first was to move to a system that required the apprentice and their employer to report actual number of hours worked rather than assume that years of time since registration equated to years of full-time work. The second change, known as "progressive credentialization," broke some trades "into component modules that stand independently." The third change involved shifting most of the responsibility for apprenticeship from the tripartite coalition of industry, labour and educators, to solely industry, "including the design of academic curriculum, responsibility for promotion and some responsibility for funding." The fourth was the administrative change in who oversees BC apprenticeship training, from the ITAC to the ITA.[38]

Possible Impact of Organizational Changes On Women

There is some concern about the possible impact of these long-term changes on women's (and other equity groups') access to trades training. The PAB specifically invited input and suggestions from women's and First Nations' representatives and the ITAC had a mandate to increase the numbers of underrepresented groups (including women) in apprenticeship.[39] The ITA has neither. Current advisory committees to the ITA - Industry Training Organizations (ITOs) — are exclusively "established and operated by industry, and approved and financially co-supported by industry and the ITA."[40] The ITA Service Plan[41] mentions the need to improve participation of women, but gives no specific steps that will be taken toward that goal, and as mentioned earlier, the large number of apprentices of undisclosed gender in the ITA statistics makes those figures unreliable in tracking participation rates of women. (As of 2008, there is a plan for gender statistics to be kept for youth programs.)

Further, unlike the Provincial Apprenticeship Board and ITAC, the ITA now advocates a trainee-driven approach which makes each apprentice (and their employer) responsible for their own enrolment in training programs. Apprentices receive written notice in response to any activity in their contract (for example to confirm completion of a training module) or after sixteen months of inactivity (indicating no schooling). But there is no longer automatic scheduling of school periods and no field counselors to seek out and counsel apprentices who might be having difficulties. Perhaps most critically, trainees must now pay tuition for each technical training session. Under the PAB`, apprentice training was fully funded. Currently, the tuition cost of apprenticeship programs at BCIT, for example, range from $435 for a four week sawfitting program to $1085 for each ten week electrical program,[42] in addition to costs for room and board and childcare if the apprentice must go out of town for training. (Lost wages have always been an issue for apprentices while in school. EI is available and some employers and unions offer a top-up.)

37 Industry Training Authority, "ITOs: Moving Forward with Industry Training Reform" (2005): 1.

38 Andrew Sharpe and James Gibson, "The Apprenticeship System in Canada: Trends and Issues" (Ottawa, Centre for the Study of Living Standards, 2005): 69-71.

39 CCPA, "BC Solutions Budget: Budgeting for Women's Equality" (2006): 32.

40 Industry Training Authority, "ITOs: Moving Forward with Industry Training Reform" (2005): 2.

41 2007/08-2009/10 ITA Service Plan. Available at: www.itabc.ca/documents/ITA%20Service%20Plan%200708-0910.pdf

42 BCIT tuition and fees table. www.bcit.ca/files/pdf/admission/fees-2006-2007-apprentice.pdf

It could be argued that given the poor progress of women into trades, none of the previous measures (notice of schooling, field counselors, free tuition, etc.) was helpful in increasing the numbers of women. However, if the aim is not just recruitment but the training and retention of more women, common sense suggests that for women and other underrepresented groups who are often unfamiliar with apprenticeship, who don't have family or friends to encourage them, who may feel awkward asking questions at work, who even if they mange to access training will be numbered as tokens, and who in addition may suffer the additional cost burdens of single parenthood and/or traditionally lower incomes, a more structured training system that includes automatic notice of training times, field counselors and especially, free tuition, would seem a more likely formula for success. Only time, of course, will tell, and the field cries out for creative solutions.[43]

Trades Training Completions

Completion of trades training is clearly a crucial part of a skilled, flexible workforce and it's useful to track how many apprentices complete their training. But as with trades and trades training figures, difficulties arise in trying to track completion rates. These include:

» whether to track by cohort or by individual
» what is the length of time considered 'reasonable' for completion before an apprentice is assumed to have dropped out? Though the allotted training period might be four years, actual time taken due to layoffs, travel, family obligations or for other reasons — particularly for women who tend to face larger issues of childcare and low income — often leads to apprentices requiring five, six or more years to complete.
» the number of people choosing to 'challenge' by writing the exam for a Certificate of Qualification, without attending classes.

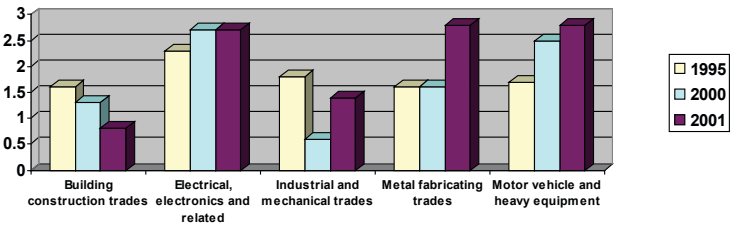
In BC the ITA has now adopted the following protocol to begin to track BC apprentice completion rates:

» Individual apprentices are tracked, not cohorts.
» "Completion rate" is the measure of the percentage of apprentices who have completed their apprenticeship program and obtained final certification within 6 years of initial registration.
» The 1998/99 fiscal year cohort is the benchmark for comparison of completion rates.
» Because gender data is unavailable or unreliable, this information is not disaggregated by gender.[44]

Given the on-going difficulties of calculating completion rates, there is still some concern that the number of women who complete apprenticeship, is declining. Statistics Canada reports that the percentage of women registered as apprentices in the building trades in Canada between 1995 and 2001 increased, but the number of completions 'lagged behind.' Completions varied by trade group, but in the building construction trades, women went from 1.6% of total completions in 1995, to only 0.8% in 2001 (see Figure 21).[45]

FIGURE 21

APPRENTICESHIP TRAINING IN CANADA
Female Completions



43 Some steps have been taken to ease the financial burden. At the federal level, as of January 2007, apprentices who have completed the first or second year of an apprenticeship program are eligible for a $1,000 federal government grant, and new tradespeople can make up to a $500 deduction from income tax to help cover the cost of new tools. At the provincial level, high school graduates can now use their Passport to Education and district scholarship funds for technical training at private as well as public institutions. There are $1000 scholarships for students who complete a Secondary School Apprenticeship program (SSA), and the provincial government has instituted both employer and employee training tax credits. These are detailed at www.sbr.gov.bc.ca/itb/TTC/ttc_employee_chart.htm and www.sbr.gov.bc.ca/itb/TTC/ttc_employer_chart.htm.

44 Personal communication, ITA Research office, May 24, 2007.

45 Statistics Canada, *Registered Apprenticeship Training Programs* (2003).

conclusion

In British Columbia, the issue bears monitoring to determine whether it is a problem and if so, if it is a gendered or a generic one. If women are not to become 'ghettoized' into unskilled or semi-skilled positions in the trades workforce as they have been in developing nations,[46] it is important they be fully trained and represented in all occupations.

A final note on completion: another way to determine completions is to count the number of Certificates of Qualification issued. In British Columbia, the number of Certificates of Qualification issued to female apprentices and challengers has risen between 1995 and 2005, but again, due to the large number of undisclosed gender, it is difficult to ascertain how much improvement there has been. There is a remarkable fluctuation in the total number of certificates given, which further complicates tracking female progress (see Figure 22).

FIGURE 22[47]

CERTIFICATES OF QUALIFICATION ISSUED IN BC, 1995–2005
Number issued to Apprentices and Challengers

	Male	Female	Undisclosed
1995	2180	12	3
1996	2141	19	2
1997	1922	15	2
1998	1896	18	0
1999	1755	25	1
2000	1805	16	12
2001	5866	38	177
2002	1518	20	105
2003	1297	14	117
2004	995	9	280
2005	1361	22	384

It should be noted that the ITA are aware of concerns around completion for both male and female apprentices, and responded to an inquiry about it as follows: "A recent ITA analysis of technical training lag times indicated that very few apprentices were significantly behind in their in-school technical training based on the benchmark for most programs of one in-school session per year of apprenticeship."[48]

Clearly, little progress has been made in the hiring and training of women in the skilled trades in BC and the Yukon in the last thirty years. There are more courses, more Human Rights laws, more public images of women in trades, but the numbers have barely shifted and today women face basically the same barriers and challenges they did in 1975 when changes to Human Rights legislation first encouraged the participation of women in blue collar work.

The current strategy of hiring foreign workers to fill skilled labour gaps in Canada is a temporary solution that ignores the potential contribution of half the country's population. Current as well as anticipated long-term trade shortages provide a rich opportunity to focus the attention of government, schools, industry and labour on increasing the participation of women in skilled trades.

46 This is documented in works such as Vivian Price's film, *Transnational Tradeswomen*, available from Women Make Movies at www.wmm.com

47 As reported by the Industry Training Authority. The apprenticeship programs included in this calculation are: auto service technician, carpenter, commercial trans vehicle mechanic, electrician, heavy duty equipment mechanic, industrial instrument mechanic, metal fabrication, millwright, mobile crane operator, sheet metal, steamfitter-pipefitter, tool and die maker, and welder (levels A,B,C).

48 Personal correspondence, Director, Communications and Marketing, ITA, May 25, 2007.

appendix a

Numbers of Women Working in Specific Trades in BC and Alberta 1971–2001[49]

CARPENTERS

BRITISH COLUMBIA

	Male	Female	Total	% Female
1971	12,985	70	13,055	0.5
1981	22,295	320	22,610	1.4
1991	17,220	250	17,470	1.4
2001	20,100	315	20,415	1.5

ALBERTA

	Male	Female	Total	% Female
1971	7870	80	7950	1
1981	18,470	285	18,760	1.5
1991	10,430	170	10,600	1.6
2001	14,820	340	15,155	2.2

SHEET METAL TRADES

BRITISH COLUMBIA

	Male	Female	Total	% Female
1971	1660	10	1670	0.6
1981	2310	70	2380	2.9
1991	2390	60	2450	2.4
2001	2160	40	2205	1.8

ALBERTA

	Male	Female	Total	% Female
1971	1415	30	1440	2.1
1981	3115	100	3220	3.1
1991	2000	20	2020	1
2001	2490	35	2520	1.4

PLUMBERS, PIPEFITTERS, AND GASFITTERS[50]

BRITISH COLUMBIA

	Male	Female	Total	% Female
1971	4565	15	4850	0.3
1981	6185	55	6235	0.9
1991	7005	75	7075	1.1
2001	8050	115	8165	1.4

ALBERTA

	Male	Female	Total	% Female
1971	4095	15	4110	0.4
1981	8660	65	8720	0.7
1991	6895	80	6975	1.1
2001	10,745	130	10,875	1.2

ELECTRICIANS[51]

BRITISH COLUMBIA

	Male	Female	Total	% Female
1971	4725	40	4760	0.8
1981	6815	135	6950	1.9
1991	6215	105	6315	1.7
2001	7765	200	7960	2.5

ALBERTA

	Male	Female	Total	% Female
1971	3590	30	3625	0.8
1981	8925	115	9040	1.3
1991	5520	35	5560	0.6
2001	9415	245	9660	2.5

WELDERS[52]

BRITISH COLUMBIA

	Male	Female	Total	% Female
1971	5775	40	5815	0.7
1981	9625	235	9860	2.4
1991	8740	110	8850	1.2
2001	8565	155	8715	1.8

ALBERTA

	Male	Female	Total	% Female
1971	4710	25	4740	0.5
1981	12,130	230	12,360	1.9
1991	16,925	420	17,345	2.4
2001	16,925	420	17,340	2.4

49 Source: Canadian Census 1971, 1981, 1991, 2001. The totals are taken from the census. Male plus female numbers do not always equal total.

50 Includes 1971 and 1981 Census category pipefitting, plumbing and related and 1991 and 2001 category plumbers, pipefitters and gasfitters.

51 1971 and 1981 listed as construction electricians and repairmen, 1991 and 2001 listed as electricians (except industrial and power system).

52 1971 and 1981 listed as welding and flame cutting occupations, 1991 as welders and soldering machine operators, 2001 as welders and related machine operators.

AUTOMOTIVE SERVICE TECHNICIANS AND MECHANICS[53]

BRITISH COLUMBIA

	Male	Female	Total	% Female
1971	10,800	65	10,865	0.6
1981	16,075	200	16,275	1.2
1991	13,760	120	13,875	0.9
2001	14,935	220	15,150	1.5

ALBERTA

	Male	Female	Total	% Female
1971	9475	65	9540	0.7
1981	14,820	185	15,005	1.2
1991	11,955	95	12,050	0.8
2001	12,885	345	13,230	2.6

CABINETMAKERS

BRITISH COLUMBIA

	Male	Female	Total	% Female
1971	1475	90	1565	5.8
1981	2735	295	3025	9.8
1991	2535	165	2700	6.1
2001	2855	135	2995	4.5

ALBERTA

	Male	Female	Total	% Female
1971	845	70	915	7.7
1981	1850	370	2225	16.6
1991	1620	95	1720	5.5
2001	2075	170	2255	7.5

MASONRY AND PLASTERING TRADES[54]

BRITISH COLUMBIA

	Male	Female	Total	% Female
1971	3565	30	3590	0.8
1981	6960	150	7100	2.1
1991	7135	115	7250	1.6
2001	7680	135	7820	1.7

ALBERTA

	Male	Female	Total	% Female
1971	3065	20	3085	0.6
1981	7400	115	7510	1.5
1991	4925	95	5015	1.9
2001	7695	275	7970	3.5

ROOFERS AND SHINGLERS[55]

BRITISH COLUMBIA

	Male	Female	Total	% Female
1971	1005	0	1005	0
1981	1900	90	1990	4.5
1991	2760	40	2805	1.4
2001	2775	60	2840	2.1

ALBERTA

	Male	Female	Total	% Female
1971	715	0	715	0
1981	1580	85	1660	5.1
1991	1565	20	1585	1.3
2001	1670	65	1740	3.7

53 1971 and 1981 listed as motor vehicle mechanics and repairmen, 1991 and 2001 listed as automotive service technicians, truck mechanics and mechanical repairers.

54 1971 and 1981 census includes the categories: brick and stone masons and tilesetters; concrete finishing and related occupations; plasterers and related occupations. 1991 and 2001 census includes the categories: bricklayers; concrete finishers; tilesetters; plasterers, drywall installers, finishers and lathers.

55 1971 and 1981 listed as roofing, waterproofing and related occupations.

GLAZIERS

BRITISH COLUMBIA

	Male	Female	Total	% Female
1971	275	10	275	3.6
1981	760	55	820	6.7
1991	1320	55	1570	4
2001	1515	55	1570	3.5

ALBERTA

	Male	Female	Total	% Female
1971	255	15	265	5.7
1981	1000	25	1025	2.4
1991	875	65	940	6.9
2001	965	50	1020	4.9

PAINTERS AND DECORATORS[56]

BRITISH COLUMBIA

	Male	Female	Total	% Female
1971	3705	70	3775	1.9
1981	4175	405	4585	8.8
1991	4850	530	5375	9.9
2001	6270	720	6995	10.3

ALBERTA

	Male	Female	Total	% Female
1971	3005	90	3100	2.9
1981	4355	455	4815	9.4
1991	3555	425	3985	10.7
2001	5185	755	5940	12.7

MACHINISTS, MILLWRIGHTS, TOOL AND DIE MAKERS[57]

BRITISH COLUMBIA

	Male	Female	Total	% Female
1971	3970	105	4065	2.6
1981	4640	95	4720	2
1991	12,605	175	12,775	1.4
2001	11,195	190	11,375	1.7

ALBERTA

	Male	Female	Total	% Female
1971	2015	45	2050	2.2
1981	3560	40	3605	1.1
1991	7980	105	8090	1.3
2001	10,695	155	10,850	1.4

METAL FORMING, SHAPING, ERECTING (w/o Welding, Sheet Metal)[58]

BRITISH COLUMBIA

	Male	Female	Total	% Female
1971	1745	0	1755	0
1981	2280	30	2320	1.3
1991	3280	40	3310	1.2
2001	4075	80	4165	1.9

ALBERTA

	Male	Female	Total	% Female
1971	1635	0	1640	0
1981	2810	40	2850	1.4
1991	2230	20	2250	0.9
2001	3895	130	4035	3.2

56 1971 and 1981 listed as painters, paperhangers and related occupations.

57 Includes 1971 and 1981 categories: machine tool operation occupations; machinist and machine tool setting-up occupations; tool and die makers. 1991 and 2001 categories: construction millwrights and industrial mechanics; machinists and machine and tooling inspectors; tool and die makers.

58 Includes 1971 and 1981 categories: forging occupations; boilermakers, platers, and structural metal workers; structural metal erectors. 1991 and 2001 categories: boilermakers; structural metal and platework fabricators and fitters; ironworkers; blacksmiths and die setters.

appendix b

Summary of Findings
Women in Leadership Roundtable
Focus Group of Employers, Educators and Tradeswomen
Women in Leadership Foundation, coordinators
Tradeswomen: A Winning Ticket, SFU April 20–21, 2007

One of the co-sponsors of *Tradeswomen: A Winning Ticket* was the Women in Leadership Foundation, who as part of the conference, held a Roundtable on Friday afternoon for trades employers and educators, and a Focus Group for tradeswomen. Each group met separately to outline issues of concern, then joined to discuss possible solutions. Following is a summary of the findings of those meetings, compiled by Katie Laughlin of WiL:

» Tradeswomen rarely, if ever, get the chance to meet with employers, or even with each other, and discuss issues surrounding women in trades. The sense from both sides was that more opportunities for discussion need to take place in neutral and solution-driven environments.
» The issues surrounding women in trades still exist from over 30 years ago, and little progress has been made in terms of increasing the number of women working in trades. It is still below 5%. Reasons for this stem from the reality of the construction industry, ie: discrimination in hiring and jobsite environment, lack of support and mentorship for apprentices, lack of awareness of trades for young girls, and lack of leadership from employers.
» Perhaps the biggest problem in recruiting and retaining more women is not necessarily the supply, but the difficulty in obtaining the qualifications for an apprenticeship and lack of attachment to the workplace.

Three words summarize the solutions/recommendations of both workshops:

» awareness
» communication
» leadership

The construction industry needs to:

» create awareness for young girls, parents and school counselors about careers in trades
» provide more opportunities for communication and bridging between labour and employers
» offer skill building, such as leadership and management, for tradeswomen, tradesmen and employers
» reward employers for leadership efforts in diverse HR practices

bibliography

BC Work Futures for Trades and Technical Occupations. "Construction." http://handson.workfutures.bc.ca/profiles/ind.cfm?id=5&lang=en&site=graphic.

Braid, Kate. *Invisible Women: Women in Non-Traditional Occupations in BC.* Unpublished Masters thesis, Simon Fraser University: Burnaby, BC, 1979.

_____. "The Culture of Construction: or, Etiquette for the Non-Traditional." in *Training the Excluded for Work: Access and Equity for Women, Immigrants, First Nations, Youth, and People with Low Income*. Marjorie Griffin Cohen, ed. Vancouver: UBC Press, 2003.

Braundy, Marcia (Ed.). *Surviving and Thriving: Women in Trades & Technology and Employment Equity*. Winlaw, BC: Kootenay Women in Trades & Technology. 1989. Available from Marcia Braundy at mbraundy@telus.net

Canadian Apprenticeship Forum. *Apprenticeship: Building a Skilled Workforce for a Strong Bottom Line*. 2006.

Canadian Apprenticeship Forum. *Accessing and Completing Apprenticeship Training in Canada: Perceptions of Barriers Experienced by Women*. 2004.

The Canadian Construction Association. *Canadian Construction Industry Forecast*. 2006. Canadian Census. 1971, 1981, 1991, 2001.

Carriere, E. *Gender Equity Framework Report* (Policy & Programmatic Implementation). Victoria: Ministries of Skills, Training and Labour & Women's Equality. 1995.

Goldberg, Sharon. *Women in Construction: A Report on Access, Training and Retention in the Construction Trades*. A Research Project of the Amalgamated Construction Association of BC. 1992.

Grzetic, B. *Women and Technical Work in Atlantic Canada*. March 1998. Retrieved January 4, 2007, from http://www.men-women-tools.ca/intervention/Wmn2AtlanticCda.htm

Hulme, Kristin. "Making the Shift from Pink Collars to Blue Ones: Women's Non-Traditional Occupations" *Labour/Le Travail* 57 (2006) .http://www.historycooperative.org.proxy.lib.sfu.ca/journals/llt/57/hulme.html.

Industry Training Authority. "ITOs: Moving Forward with Industry Training Reform." 2005. http://www.itabc.ca/documents/ITO%20Discussion%20Paper.pdf

Industrial Training and Apprenticeship Committee: *Overview of Equity in Apprenticeship: A Paper Prepared for the ITAC Interim Standing Committee on Under-Represented Groups. 1997*. Available at http://www.men-women-tools.ca/documents/Equity_overview_ITAC.html

Kanter, Rosabeth Moss. *Men and Women of the Corporation*. New York: Basic Books, 1977.

Legault, Marie Josée. "Workers' Resistance to Women in Non-Traditional Sectors of Employment and the Role of Unions: Labor Relations Issues Arising Out of Three Case Studies." Montréal: Téléuniversité du Québec (TELUQ), 2001.

Madsen, Kirsten. "Yukon Women in Apprenticeship and Trades." Northern Research Institute, 1999.

Niemann, Yolanda Flores. "The Psychology of Tokenism: Psychosocial Realities of Faculty of Color." In *Handbook of Racial and Ethnic Minority Psychology*. Thousand Oaks, CA: Sage Publications, 2003.

Rexe, D., Braundy, M., Sarenac, I., Morrison, D., & Aliyargadeh, G. (1996). *Equity Access to Apprenticeship*. Burnaby, BC: Apprenticeship Branch/ITAC - Queen's Printer: British Columbia.

Sharpe, Andrew and James Gibson, "The Apprenticeship System in Canada: Trends and Issues." Ottawa: Centre for the Study of Living Standards, 2005.

Statistics Canada. *Registered Apprenticeship Training Programs*. 2003.

Yukon Government, Department of Economic Development. *Yukon Economic Outlook* 2006. Whitehorse, Yukon, 2006.