BCIT

TRADES TALK

A Trades Training Opportunities Newsletter from BCIT

Fall, 1989

BCIT Promotes Women in Trades Program

BCIT recently received a grant from the Women's Secretariat of the Ministry of Advanced Education and Job Training to facilitate the recruitment, training, and placement of women in trades careers. Even though women have always been encouraged to attend BCIT's trades programs, they have never done so in significant numbers. In addition, the resistance to the participation of women is greater in some trades than others, making placement of new graduates in entry-level positions a challenge.

Considering that recruitment and placement are seen as major barriers to the successful entry of women into the trades, these two activities will be the focus of the BCIT project. The primary objective is to develop strategies that can be easily incorporated into the ongoing operation of BCIT trades programs so that the needs of women are met even after the end of the funding period.

Any project which is concerned with the role of women in non traditional careers is, of course, faced with an uphill battle in opposition to generations of social pressures. These pressures placed certain expectations on women regarding their role in society. The statement that women cannot participate in certain careers because they are women not only has little basis in fact but increasingly comes into conflict with human rights and employment equity legislation.

Treating their daughters differently than their sons is something many fathers do unconsciously. However this early programming is nurtured as little girls enter the educational system and mature into young women. Attitudes regarding participating in non traditional activities becomes evident when their enrollment in Industrial Education is compared with enrollment in Home Economics. Research also highlights a general reluctance of young women to concentrate on the math and sciences in high school. This tied with research indicating a correlation between math skills and persistence in our entry level trades program, seems to indicate that women come into trades training already at a disadvantage compared to their male classmates.

It is obvious that one or many projects like the one being undertaken by BCIT will not overcome the years of tradition which have kept women out of the trades. However, it is hoped that the present attempt may at least be useful in lowering some of the barriers presently encountered by women seeking a career in the trades.

Recruitment and placement seem to be the major barriers to women participating in trades careers.

Louise Hashimoto, left and sister Murielle Cassidy are graduates of BCIT's Aircraft Maintenance Engineer program. Both are currently working in industry. Sea Island instructor John Edwards says the small number of women who take the course usually do very well and their presence adds something very positive to the class. "Everyone seems to try harder," he says.

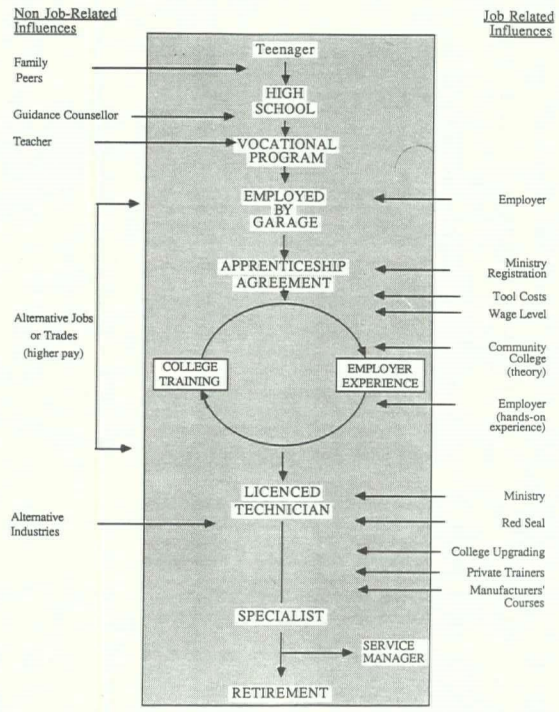
"Unfortunately women have not been encouraged to work in mechanical fields, but we find that if they have the basic interest and a bit of mechanical background, they do really well."

Edwards says he has seen some outstandiing women pass through the AME program. One of them, in fact, became the first Sea Island student to receive the Lt. Governor's medal five years ago.

Technology Creating a Training Crisis in the Auto Industry

Terms such as "electronic control and guidance systems", "multiplex wiring", and "multipurpose soft switches and shared displays" are normally associated with vehicles designed for trips to outer space rather than trips to the local grocery store. Surprisingly, these are just a sample of the terms used to describe systems both in use now and anticipated for use in the modern automobile. Although the growing use of high technology has increased the reliability of new cars compared to those of even ten years ago, it has in turn increased the demand for highly trained repair and service personnel.

In response to the dramatic changes in automotive technology Employment and Immigration Canada commissioned a study (Canadian Automotive Repair and Service Industry: A Human Resource Study) to examine the effect these changes will have on the service, repair and parts distribution industry. A Steering Committee comprised of manufacturers and importers, wholesalers, retailers, dealers, independent garages, community colleges, and provincial and federal governments was formed to direct the study. Although the findings have wide reaching implications, they are primarily related to the technical upgrading of present service technicians and anticipated changes in the existing system for preparing automotive mechanics. These changes will have a direct influence on how mechanics are trained, beginning with their preparation in high school.



Schematic representation of a technician's career path.

The increasing need for upgraded automotive training is due to the increasing reliance on computers to control the various automobile components and how they interact with each other. The skills of the automotive mechanic will have to change. It is anticipated by industry that there may in future be two levels of mechanics: one group will perform tasks traditionally associated with automotive mechanics, the other will deal with the more sophisticated systems. It is believed that the "technician" group will be quite small while most mechanics will continue to deal with more traditional repairs.

Even with two levels of automotive mechanics, the skills and knowledge of both groups will differ from the past. When asked what kinds of skills the competent technician will have to possess, manufacturers indicated the following:

- Understanding of hydraulics, fuel combustion and mechanics (traditional skills)
- Excellent manual dexterity (to handle the very delicate electronic components and connections)
- Ability to understand and use precision measuring equipment
- A solid understanding of electronics, including the ability to read, understand and apply circuitry diagrams
- The ability to read, understand and follow sophisticated service manuals
- Deductive reasoning skills in order to think through and diagnose problems.

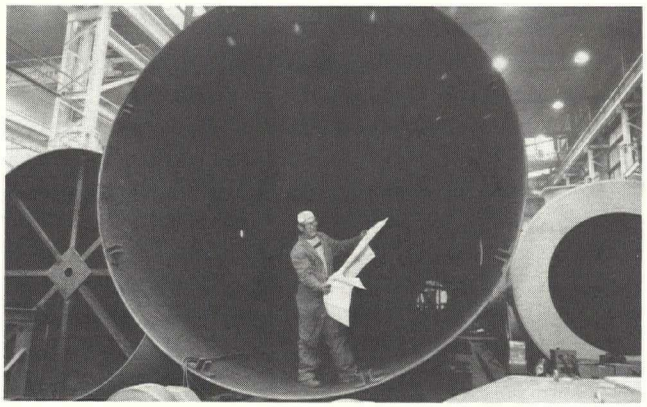
Taken to the extreme all this may mean that budding automobile mechanics will be recruited from the high school math and physics classes rather than from the high school automotive shop. Many of those involved in the field argue that Grade 12 graduation should be a prerequisite to apprenticeship while others suggest that functional testing of math and reading skills be the only requirement.

Also impacting the need for more qualified applicants is the question of what does the trade have to offer in the way of recruitment incentives. The CARS report acknowledges that the image of a mechanic as a "grease monkey" is still prevalent and that this perception hurts the recruitment process. In addition, demographic trends indicate that the search for candidates from the age group which traditionally seeks apprenticeships is becoming increasingly competitive. The trend towards a level of technician where the physical demands of the job are less rigorous increases the potential for women to enter the trade.

One thing is obvious from these developments. The attitude that, "If you can't do anything else you can always be an auto mechanic" must change and this change must start in the high schools.

Traditionally students who couldn't or wouldn't make it in the academic stream were shuffled into vocational programs while more able students were directed towards college or university. Perpetuating this attitude in the schools does a disservice to students, who come away anticipating that a good set of hand skills will make up for the lack of basic academic skills. Possibly true in the past, changing technology refutes this notion again and again.

In essence, what the CARS report indicates is that there are some exciting opportunities and an increasing demand for candidates with an excellent grounding in both academic and technical skills. It is anticipated that this demand will continue well into the 1990's.



Large tanks are just one of the jobs fabricators find themselves working on.

If It's Made from Steel . . .

If it's made from steel, it's made by a steel fabricator. In addition to large tanks, such as the one pictured above, used in mining, forestry, or the petroleum industry, steel fabricators produce almost any other steel item you can think of. For example, in the construction industry they manufacture the steel beams used by ironworkers to erect buildings and bridges, in the mining industry they produce the conveyers used to move raw materials from the mine to the processing plant, and in the forest industry they manufacture the equipment used to turn trees into pulp and paper. As well as manufacturing the equipment used to procure and process the raw materials, they are also involved in the transport of the finished product to market. They manufacture and repair the railcars and build components for transport trucks and even work in the shipyards, building and repairing the ships used to deliver products to world markets.

Even though building on the grand scale may infer that accuracy is not as important for the steel fabricator as it would be for other tradespeople, this is not the case. Precision in measurement and accuracy in construction are necessary skils. Entry level students spend a good portion of their training reading blueprints, calculating measurements, and precisely laying out patterns before cutting or forming begins. The idea is to simulate as closely as possible what students will experience on the job. Graduates must be prepared to upgrade themselves even after completing their apprenticeship because computers are adding a whole new dimension to what a steel fabricator does. Computerized equipment which can bend, form, punch and cut steel plate is steadiy moving into the industry as competition requires increased productivity.

As with most other trades, steel fabrication includes a period of apprenticeship (four years) prior to obtaining a journeyman's ticket. This requires that apprentices return to school for a four week period during each year of their apprenticeship. An exception is made for graduates of BCIT's Entry Level Trades Training program. These graduates are given credit for the first four week training period and do not return for training as first year apprentices. In addition, entry level students are prepared as "generalists" so that they can successfully move into a variety of fabrication positions after graduation.

Program Length:	26 weeks
Intakes:	thoughout the year
Tuition:	$760.50
Prerequisites:	Grade 10 completion
OR	Successful completion of an entrance test in math and reading skills.

Placement Survey of Trades Graduates Completed

The '87-'88 follow-up study, completed early in 1989, had good news for those planning to take entry level trades training. The placement of graduates is the best it has been in the last few years! This increase in employment opportunities for graduates parallels the improving B.C. economy, and is a great encouragement to our grads seeking apprenticeships.

The survey included all students who graduated between September 1, 1987 and August 31, 1988. Using a combination of mailed out questionnaires and telephone follow-up, a response rate of 67 percent was obtained. The results proved to be very encouraging, with between 80 and 100 percent of the Boilermaker, Ironworker, Inboard/Outboard Mechanic, Benchwork and Joinery, and Sheet Metal graduates finding jobs related to their training. Following close behind these students were Carpentry, Electrical, Machinist, Motorcycle Mechanic and Steel Fabrication graduates, with placement rates of between 70 and 80 percent. In the remaining programs, Automotive Mechanics, Commercial Transport, Diesel Engine, Heavy Duty Mechanic, and Millwright, graduates found employment related to their training in 50 to 70 percent of cases. In cases where graduates were not working in an area related to their training they indicated that they had not yet found employment, were taking additional training and not looking for work, or had taken employment in a job related to their training at BCIT.

Since the results of this study were released, the placement picture for ELTT graduates across all programs generally appears to be improving. Indicators used as interim measures of "demand" are obtained during exit interviews with students, by the number of calls from prospective employers, by the number of first year apprenticeship classes, and from increases in training purchases by sponsoring agencies. These results indicate that the demand for entry level workers continues to increase in the construction related trades such as carpentry, benchwork and joinery, the piping trades, sheet metal, electrical, and boilermaker. In certain trades, such as ironworker and sheet metal, additional classes have had to be added to meet the demand from industry.

In the mechanical trades the demand remains steady. However, the recent addition of Commercial Transport

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Trades — A Career Option for Women

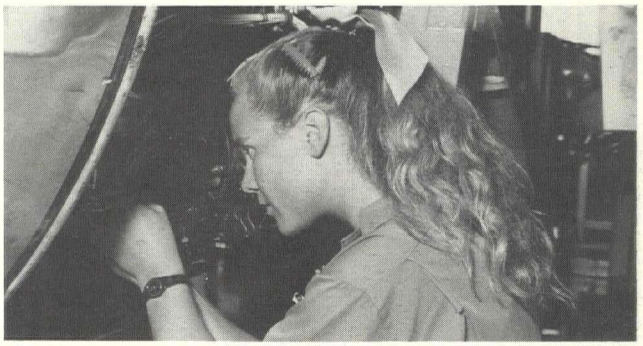
by Valerie Perkio

The role of women in trades is of increasing importance to industry. Changing demographics dictate that the existing skill shortage will escalate into crisis proportions in the 1990's.

An increase in the number of journeymen approaching retirement and a decrease in the number of young people entering the workforce, ages 18-24, are contributing to the present shortage and the predicted skill shortage crisis. At the same time, increased international competition and rapid technological advancements are causing employers to hire qualified people in order to compete and prosper. Employers who traditionally hired males must now access additional sources to fulfil human resource requirements. It makes good business sense to hire trained, skilled women to answer the growing need.

Today, women are entering the workforce in greater numbers than ever before. They are seeking good salaries, benefits and opportunities for advancement. Most are unaware that a trades career can answer these needs. They may also have difficulty with the non-traditional aspect of jobs in trades, and eventually take traditional, low-paying jobs. In reality, trades careers offer good financial remuneration and job satisfaction and women are just as capable of mastering the skills as men.

History has shown that women have the ability to work successfully at any task for which they have a strong desire. In 1944, National Geographic magazine published a 27-page report detailing the contributions



Aircraft maintenance engineering student at BCIT's Sea Island campus.

women made to the war effort by working effectively in steel mills, oil refineries, railroads and every industrial area. In less than four years, five million U.S. women went to work as skilled, semi-skilled and professional women. They set production records which were a challenge to men. They worked as mechanics, welders, ship and aircraft builders, loggers, vehicle and machine operators, engineers, chemists and physicists. Given encouragement, half a chance, and adequate training women succeeded in all jobs at that time and can do it again today!

The School of Trades Training at BCIT, in concert with government and industry, is committed to encouraging the participation of women in trades. Existing and future skill shortages in B.C., changing demographics and the needs of women suggest that the time is right. Various information sessions on trades will be held in the late fall and planning for a part-time evening program introducing the trades to women is underway. Additional information will be available in September.

Commercial Transport Added to the Skills Shortage List

The increasing demand and potential shortfall of trained truck and bus mechanics (Commercial Transport Mechanic) has recently been recognized by the addition of this trade to the Skills Shortage List. At the entry (or pre-apprentice) level this training is available at BCIT. The training is similar to that for automotive mechanics in that all the mechanical systems from brakes to engine service are covered. The major difference is that Commercial Transport students focus on the maintenance and repair of highway transport trucks and buses. In addition to trucks and buses, Commercial Transport mechanics may also find themselves working on refrigeration equipped tractor trailer units and fork lifts. Graduates of this 33 week program are employed by dealers, repair shops, or large fleet operators. Upon finding employment in the trade these students would begin a four year apprenticeship including three years of in-school technical training.

Program Length:	30 weeks
Intakes:	throughout the year
Tuition:	$857.50
Prerequisites:	Grade 12 completion with Math 10 or Trades Math 11, and English 12
OR	Successful completion of an entrance test in math and reading skills

Placement Survey cont'd

(Truck and Bus Mechanic) to the Skill Shortages List gives an indication of an unmet demand. The need for entry level workers in the machinist trade remains high while the number of graduates leaving the millwright program and moving directly into employment increased considerably with the last graduating class. From our experience there appears to be a four to six month lag from when a demand for workers is identified and when it subsequently filters down to show up as an increased demand for training.

The results of the follow-up survey of the '88-'89 graduates will be released in January of 1990. Given the present and projected economic situation in B.C. it seems likely that entry level trades training will remain as an excellent option for those seeking apprenticeships.

TRADESTALK is published by the School of Trades Training in the fall, spring and summer. All comments and/or queries should be directed to Rod MacNeill, School of Trades Training, 3700 Willingdon Avenue, Burnaby, B.C. V5G 3H2 (432-8524).

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