



# SHOP TALK

A Trades Training Opportunities  
Newsletter from BCIT

September, 1988

## From the Editor's Desk:

The first Career Preparation graduates beginning Entry Level Trades Training (ELTT) under the new Articulation Agreements are scheduled to start their programs in September and October. Although we have tried to make their transition to BCIT as smooth as possible, a few problems have been encountered in the process. However, we expect that these will be eliminated prior to the fall intakes in 1989. We will be closely monitoring these students as they progress through the program to ensure that BCIT complies with the points as set out in these agreements.

### Competency Completion Records

One start-up problem that really inhibits the smooth passage of students from Career Preparation (CP) to ELTT is the delay we have experienced in receiving Competency Completion Records (CCR).

Because we offer CP students placement in certain programs during July and August, we need to receive a copy of their completed CCR as early in June as possible. This document, completed by their CP instructor, is the only indication we have that a student is a legitimate CP graduate. Until we receive a CCR we cannot offer the student a place in the program. In addition, students for whom we have not received the CCR cannot be given an official start date. This, in turn, creates problems for students applying for student loans because a confirmed start date is needed before their loan applications can be considered. Also, without the proper documentation, we have no way of knowing which credits for competencies completed in high school should be given. To facilitate an early start in the program for those students who did not have a CCR we have had to rely on other forms of documentation (report card marks, transcripts, Career Preparation Diploma).

Although certain "start-up" problems are inevitable, it is the students who suffer if we do not receive their documents. We will endeavour to ensure that each CP instructor has supply of Competency Completion Records and BCIT application forms as early in September as possible. We will also be available to answer any questions regarding admission procedures, how to complete the

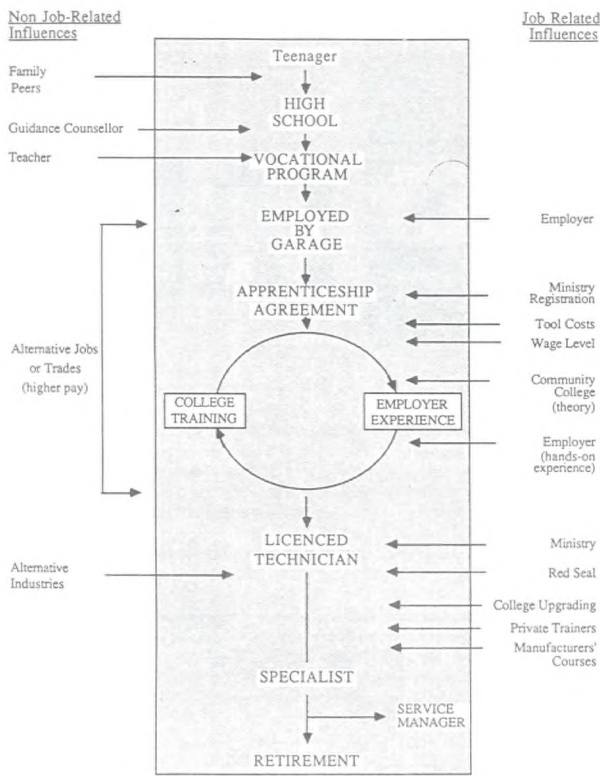
Competency Completion Records, or any other questions which may come up. We hope that this will result in a smooth transition for students from high school to the ELTT program at BCIT.

### The CARS Report

Terms such as "electronic control and guidance systems", "multiplex wiring", and "multi-purpose soft switches and shared displays" are normally associated with vehicles deigned 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.

This increased need for upgrading automotive training is due to the increasing reliance on computers to control the various automobile components and how they interact with each other. For example, as stated in the report: "Ford has listed a number of technologies which will be introduced over the next decade:



**A schematic representation of a technician's career path (from the CARS report).**

**Torque-demand powertrain control** which fully integrates the response of the engine and the transmission;

**Electronic suspension control** for both improved ride and enhanced handling characteristics;

**Electric power management** based on new power generating components and sophisticated load management controls;

**Traction control** derived from full powertrain control coupled with anti-lock braking;

**Multi-purpose soft switches** and shared displays for driver information, climate control and entertainment functions."

It is obvious from this that the skills of the automotive mechanic will also have to change or, as is anticipated by industry, there will be two levels of mechanics. One group will perform tasks traditionally associated with automotive mechanics, while the other will deal with the more sophisticated systems. It is believed that this 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 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 required.

Also impacting the need for more qualified applicants is the question of what the trade has 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 a tradesperson" must change and this change must start in the high schools.

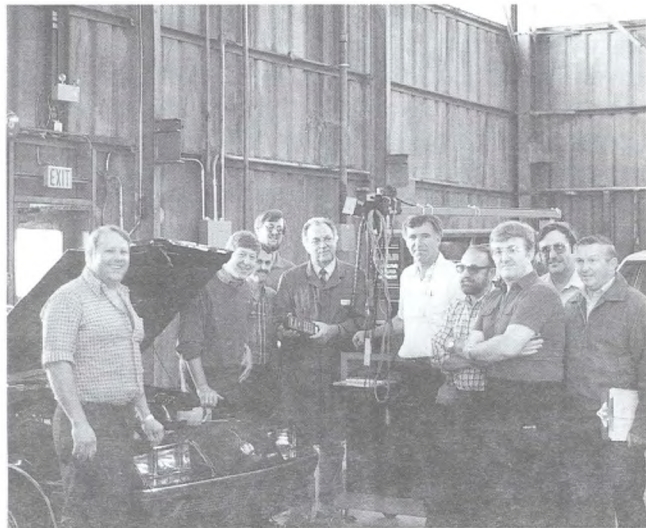
Traditionally students who couldn't or wouldn't make it in the academic stream were shuffled into vocational programs while more able students were directed towards college or university. Perpetuating this attitude in the schools does a disservice to students, who come away anticipating that a good set 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.

It is not anticipated or expected that high school automotive programs will be able to operate on the "cutting edge" of automotive technology when even the dealers are having difficulty justifying the cost of equipment and keeping up with technological change. What is needed is for high school instructors to continue laying a solid foundation upon which further training can be built. This requires a delicate balance between teaching the basics and providing enough advanced training to maintain and nurture the students' interest in automobiles as a career. In some cases this may require an infusion of capital for the upgrading of obsolete tools and equipment. It will also put an increasing demand on the instructors to upgrade their technical skills, requiring release time for them to attend courses and visit local dealers.

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

## High School Automotive Instructors Attend BCIT Upgrading Course

In June of this year a group of automotive instructors from local high schools participated in an automotive upgrading course. The course stressed electronics, fuel injection and the analysis and diagnosis of problems. This was the first time that this kind of program has been offered specifically for high school teachers, and depending upon demand, it is possible that courses in other trade areas may be offered in the future. This service is seen as an opportunity to assist instructors in keeping current and it is anticipated that it will result in an even higher quality student coming to BCIT from high school Career Preparation programs.



**Instructor Jim Marchant from BCIT's Automotive Department explains the use of analysis equipment on a late model vehicle.**

### The Future of Trades Training at BCIT

As you may be aware, BCIT has been going through a period of instability over the past year. Many questions have been asked about the future of trades training at BCIT and the impact these changes may have on Entry Level Trades Training and the Articulation Agreements.

According to what has been announced by the Ministry of Advanced Education and Job Training there should be no major changes affecting ELTT programs in the short term.

It had been indicated that a Construction Training Centre will be built in a location still to be determined. Although unsubstantiated, it is believed that the centre will be located in New Westminster or Surrey with close access to the SkyTrain. Because a site has not been identified, it is possible that the transfer of construction programs from BCIT would take up to two years. The programs affected by this move would probably include Carpentry, Joinery, Painting, Glazing, Plumbing and Steamfitting. This would include entry level programs, apprenticeship, and continuing education.

Additional changes which will not affect ELTT programs but which may be of interest to your students include the transfer of Automotive Upholstery, Custom

Upholstery, and Appliance Repair to Douglas College, Hospitality to Vancouver Vocational Institute, and Security Alarm Installer, Power Engineering, and Electricity and Industrial Electronics to BCIT from Vancouver Vocational Institute. It has also been proposed to the government that a new transportation centre for the mechanical trades be built at BCIT. It is hoped that a decision on this will be reached by August or September of this year.

It is not anticipated that the stated program changes will have any effect on Career Preparation graduates registered to begin their ELTT program during the 1988-89 term.

### Apprenticeship in British Columbia

Included in the May edition of *Shoptalk* was a Trades Careers Awareness Questionnaire. The purpose of the questionnaire was to gather information on the need for additional material on the role of apprenticeship. If responses from the questionnaire show there is a need, BCIT will approach the Apprenticeship Training Programs Branch about "co-producing" a package of learning materials centered around their four video tapes on apprenticeship. This package would be designed for use by high school counsellors or vocational instructors with students considering a career in the trades.

The response to the questionnaire so far has been insufficient to justify approaching the Apprenticeship Training Programs Branch with such a proposal. Because the last newsletter may have been late in reaching all those on the mailing list we are to going to postpone any action until more questionnaires are returned. If you have already completed and returned the questionnaire; thank you. If not, please complete and return it before the end of September.

### Career Preparation Articulation: Questions and Answers

#### What is the purpose of the Articulation Agreement?

Its purpose is to give Career Preparation graduates advanced placement and advanced standing in Entry Level Trades Training (ELTT) programs at BCIT. It is also designed to facilitate a smooth transition from high school to post-secondary training for students interested in a trades career.

#### What is meant by "advanced standing?"

Students are given credit for competencies mastered in their high school Career Preparation program. This can result in the time it takes them to complete an ELTT program at BCIT being shortened and therefore their tuition reduced.

#### How do you determine whether or not a student should get credit for a particular competency?

The ELTT program at BCIT follows the TRAC curriculum which is divided into three parts: Common Core, Occupational Core, and Specialty. There are specified competencies for each of these sections for each trade. Each competency covers a certain amount of material

Continued overleaf . . .

to a certain depth and the student is required to attain a specified mark on a written or practical exam to prove that he is competent. High school instructors, by examining or using the TRAC learning materials, tests, and practical checklists can evaluate whether their students meet the criteria of mastery. Based upon this evaluation, Career Preparation instructors signify that the student is competent. This is documented by the instructor on the student's Competency Completion Record and the document sent to BCIT as a requirement for admission.

**Will all students automatically get credit for competencies signed off by their high school instructor?**

In most cases students will automatically get credit for what has been signed off. However, BCIT instructors can require a student to repeat a competency if in completing a new task it is obvious that the student has not retained the prerequisite knowledge or skill. If this occurs too often for students from a particular C.P. program the high school instructor will be contacted by his counterpart from BCIT in an attempt to work out a solution. Generally the withholding of credits is a rare occurrence.

**Do I have to "teach TRAC" in my Career Preparation program in order for my students to get credit?**

No. By examining TRAC Learning Guides it should be fairly clear what the content is and to what depth it is covered. If in your program you teach the same skill to the same depth and your students can demonstrate

competence at the required level of mastery, then you can sign off that competency on their Competency Completion Record.

**Can I sign off competences from all levels of the TRAC curriculum?**

No. Students can get credit for Common Core and Occupational competencies only. All the Specialty level material is covered here at BCIT. We also realize that not all schools can cover all the competencies and it is perfectly acceptable to send us a Competency Completion Record on which not all have been signed off.

**What should I do if I feel my students need to cover all of the program and not receive credit for what they have done in high school?**

This is a decision best made by you the instructor. As Career Preparation graduates your students would still get preferential placement if they applied as C.P. students. However, as we require a completed copy of the Competency Completion Record before we can offer the student a seat in the program, we would need either the CCR or a letter specifying your intentions and including the names of the students for which this would apply. Without this we have no way of differentiating the students of one C.P. instructor from those of another.

**If I have any other questions who can I call?**

If you have questions or concerns please feel free to call Rod MacNeill, Coordinator, Entry Level Trades Training at 432-8524.

**ENTRY LEVEL TRADES TRAINING  
METAL FABRICATION OCCUPATIONAL CORE**

**INSTRUCTIONS**  
For each theory and practical competency for which the student has attained mastery, the high school instructor initials and dates the Competency Completion Record in the appropriate space. For competencies not part of the high school program or in which mastery was not attained, the high school instructor should write "NA" in the appropriate space. Upon completion of the recording process, this document should be signed by the high school instructor and principal and the school seal or stamp affixed on the front cover page.

DESCRIPTION	T/P	INSTRUCTOR INITIALS/DATE	DESCRIPTION	T/P	INSTRUCTOR INITIALS/DATE
<b>A. DESCRIBE SAFE WORK PRACTICES — 6 Hours</b>			E4 Use power band saws. Use the horizontal band saw. Use the vertical band saw.	T P P	
A1 Identify safety practices for working around moving equipment.	T		E5 Use cut-off saws. Use the cut-off saw.	T P	
A2 Identify WCB sections that apply to metal fabrication.	T		E6 Use a hand brake.	T	
<b>B. READ METAL FABRICATION DRAWINGS — 18 Hours</b>					
B1 Describe types of drawings.	T				



**ENTRY LEVEL TRADES TRAINING  
COMPETENCY COMPLETION RECORD  
METAL FABRICATION OCCUPATIONAL CORE**

Student's First Name		Last Name	
Street Address			Postal Code
City		Date Completed	
Industrial Education/Career Preparation Program Taken		School Telephone Number	
Name of School		Street Address	
City			Postal Code

...this document when submitting it to BCIT.

DESCRIPTION	T/P	INSTRUCTOR INITIALS/DATE	DESCRIPTION	T/P	INSTRUCTOR INITIALS/DATE
H5 Develop patterns for cylindrical objects using parallel line development.	P				
H6 Develop a pattern for a conical object using radial line development.	P				
H7 Develop a pattern for a transition piece using triangulation.	P				
<b>I. MAKE PATTERNS AND TEMPLATES — 6 Hours</b>					
I1 Describe types and applications of patterns and templates.	T				
I2 Select materials for patterns and templates.	T				

**NOTE: THE DEADLINE FOR CAREER PREPARATION APPLICATIONS FOR ENTRY TO THE ELTT PROGRAM (FALL 1989) UNDER THE EXISTING ARTICULATION AGREEMENT IS OCTOBER 31, 1988. AN APPLICATION STAMPED "CAREER PREPARATION" OR SIMILARLY MARKED IS NECESSARY FOR SPECIAL APPLICATION PROCESSING.**