VEHICLE BODY TECHNOLOGY
Needs Assessment

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Oakland Community College

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EXECUTIVE SUMMARY

- This needs assessment was undertaken in order to evaluate industry needs and educational trends related to the field of auto body repair.

- Across the nation, low enrollments in collision repair classes threaten to close many programs. In Michigan, three college auto body repair programs have been eliminated in recent years, and another is currently under review due to a lack of student interest. As a result, OCC has the only remaining college level auto body repair program in the Detroit area.

- At OCC, between the academic years of 1982 and 1992, enrollment in VBT courses declined 43.0% in terms of enrolled students and 41.0% in the number of credit hours taken.

- A reciprocal joint program agreement has been reached between OCC and Macomb Community College which permits Macomb students to enroll in certain programs offered at OCC, including VBT, at in-district rates. The arrangement promises to improve enrollment in the VBT program.

- In Michigan, individuals involved with auto body repair are required by law to pass a certification exam in Collision Repair. As of April 1993, a certification in Uni-Body Repair will also become mandatory. Nearly all (94.5%) of the employers surveyed require Collision Repair certification.

- Between the years 1988 and 2000, employment in auto body repair in Michigan is expected to grow 13%, averaging 250 job openings annually. Employers reported the average salary for an entry-level auto body technician as $20,400.

- A quarter (24.6%) of the students surveyed indicated that they are taking VBT courses to prepare for a new career. A much larger percentage (71.9%) are enrolled for personal development. Therefore, the availability of jobs may not affect the viability of the VBT program.

- The majority (54.1%) of employers surveyed have difficulty finding qualified personnel, validating predictions of the Inter-Industry Conference on Auto Collision Repair of a shortfall in the pool of competent, entry-level auto body repair personnel.

- Employer survey evidence indicates employers value experience and technical skills over formal training.

- Students are generally satisfied with the VBT program. They like the program's hands-on instruction, instructors, and being able to work on their own vehicles, but they feel that there are problems with the availability, quality, and distribution of tools and equipment.

OAKLAND COMMUNITY COLLEGE
VEHICLE BODY TECHNOLOGY
NEEDS ASSESSMENT

INTRODUCTION

The purpose of this report is to present current industry needs and educational trends related to the field of vehicle body repair. It is intended to assist the Department and the College Administration in planning for the future of the Vehicle Body Technology (VBT) program. Initiated by Dr. Billy Rose, Dean of Academic Services at Oakland Community College's Auburn Hills Campus, this needs assessment is part of an on-going effort to evaluate the viability of all vocational programs at the college. It includes a comprehensive literature review, data supplied by industry analysts, personal interviews with industry experts, an examination of related post-secondary programs, and telephone surveys of employers in the automotive industry and students who have recently enrolled in the Vehicle Body Technology program at Oakland Community College.

Description of Existing Program

The Vehicle Body Technology program at Oakland Community College leads to a Certificate with a specialty in Vehicle Body Repair and an Associates Degree in the Applied Sciences and Arts. The program covers all phases of auto body repair, requiring the completion of courses in panel reconstruction and repair, vehicle body painting and refinishing, frame alignment and correction, and advanced body repair processes (Appendix A). Although VBT has no program options, interested students may concentrate on vehicle painting and refinishing, metal fabrication, or small business management. Instruction emphasizes hands-on teaching methods, as well as traditional classroom work.

The last VBT advisory committee meeting was held on May 26, 1986 (Appendix B). The committee's evaluation of the program was generally positive. Specific references were made to the quality instructors, "good" lab facilities, and the practical experience opportunities for students. Recommendations for improvement included the addition of a down-draft spray booth to the lab, increased emphasis on marketing the program throughout the community, and greater communication with vocational school instructors. Establishment of a definite plan with goals and objectives and added emphasis on current instruction were also among the comments made by the committee. Since that time, the structure of the VBT program has remained stable and several improvements in the lab facility have been made, such as the addition of a down-draft spray booth.

Between the academic years of 1982 and 1992, enrollment in VBT courses declined 43.0 percent in terms of students and 41.0 percent in terms of student credit hours taken. During that

time the lowest enrollment figures were recorded in 1986-87 when the number of students taking VBT courses totalled 151. A total of 13 Associate Degrees and 17 Certificates were awarded in VBT from 1987-88 to 1991-92 (Appendix C).

The implementation of a joint program arrangement with Macomb Community College (MCC) promises to improve enrollment in VBT. In November, 1991 an agreement was reached which permits MCC students to enroll at in-district rates for certain programs offered at Oakland Community College (OCC), including VBT. Similar opportunities are being offered to OCC students at MCC. The purpose of this arrangement, as described in a draft copy of the agreement dated October 10, 1991, is to "expand student access to programs of their choice in a cost effective manner" (Appendix D). As of Winter Term, 1993, OCC will allow five seats in VBT 101, VBT 121, VBT 131, VBT 210, VBT 221, and VBT 125 to be scheduled at MCC for Macomb resident students.

Description of Occupation

The skills needed by individuals in the field of auto body repair have become more complex as automotive manufacturing techniques and materials have changed. Increasingly, automobile designs have body parts made of steel alloys, aluminum, and plastics, materials that are more difficult to work with than the traditional steel body parts. Auto repairers have to be able to use and manipulate a wider range of techniques and tools than ever before.

John Cooke (1990) author of *Auto Body Repair*, offers the following definition of auto body repairers:

> "Auto body repairers fix damaged bodies and body parts of automotive vehicles such as cars, vans, trucks, buses, campers, and trailers. The work of an auto body repair technician involves straightening and replacing parts, aligning, painting, glass work, frame work, and upholstering. In addition to a knowledge of working with various types of steel, the repairer must also be able to work with aluminum, resin, fiberglass, and various types of plastics. "

At some point in the future, the auto body repair generalist may become the exception rather than the rule. As the field has grown and the technical skills needed to perform the tasks of auto body repair have become more complex, specialization has entered the field. The Automotive Service Association, a national automotive service organization and lobbying group, divides the field into two main occupational categories, Collision Repair Technician and Automotive Refinish Technician or Painter. In larger shops work responsibilities are often divided between entry-level technicians and specialized technicians in frame adjustment, customized painting, glass repair and installation, and other tasks. Management also can include the shop manager, production foreman, the parts manager, and an estimator. A complete list of job titles given by local body shop owners and auto dealerships appears in Appendix E.

METHODOLOGY

Methods of Data Collection

To review the field of auto body repair a general literature search was performed, and to obtain general occupational information, such as employment outlook and occupational descriptions, sources such at The Dictionary of Occupational Titles and the Michigan Occupational Information System (MOIS) were used. Furthermore, efforts were made to contact a variety of professional, industry, public and regulatory bodies.

In order to obtain current occupational information, a telephone survey of 62 employers was conducted between November 12-18, 1992. Employers from both body and paint shops and automobile dealerships were contacted and asked questions regarding hiring practices, potential employment opportunities and desired qualification for entry-level employees (Appendix F). The employers were selected randomly from a single source, DUNS Regional Business Directory 1992, Detroit Area, Volume 3 (Appendix G).

Table 1
Employers Contacted By OCC

Type	Number	Percent
Auto Body Repair and Paint Shops	31	50.0%
Automobile Dealerships	31	50.0%
Total	62	100.0%

Efforts to gather information about educational opportunities in auto body repair included a review of existing automotive technology programs in post-secondary institutions in Michigan. Comparisons of enrollment and graduation information were made, and an examination of program content was conducted. Additionally, 57 students from the OCC, VBT program were surveyed by phone on October 26 and October 27, 1992. They were asked about their educational goals and satisfaction with the program (Appendix H). Lastly, the Graduate Follow-Up Survey data base was examined. Of the 17 students that received an Associates degree or a Certificates in VBT between August 1988 and August 1991, 11 (64.7%) had completed the Graduate Follow-Up Survey. That information was analyzed for use in this report.

Methods of Data Analysis

Data was analyzed by means of frequency distributions, chi-square analyses, and correlations. Verbal responses were analyzed for content. The narrative responses of employers can be found in Appendix I, and the entire complement of student narrative responses is included in Appendix J.

ANALYSIS

Industry Overview

The auto body repair industry and the role of the body technician has changed significantly over the past two decades. Increased demand for smaller and more fuel efficient vehicles have forced manufacturers to radically alter both the design and materials used to make cars, changing auto repair methods. Specialization and improved professional standards have gradually entered the field, transforming the image of auto body repair technicians. Furthermore, environmental and safety regulations, and upgrades in the tools and machinery have also affected the trade.

According to Robert Scharff (1988), industry specialist and author, the most influential of these changes is the shift to uni-body construction in almost all automobiles made today. In uni-body construction, the body panels are welded together making a structural unit as opposed to the traditional frame construction where the cosmetic steel body rests on top of a structural steel frame. As a result, auto body technicians must have increased knowledge of mechanical components including strut suspension systems, independent rear wheel suspension, rack and pinion steering, rear axles, and mount points.

In addition, use of high strength steels in uni-body construction has forced auto body technicians to learn about handling new materials. Arc welding methods, particularly MIG welding, and fusion welding must be used for all structural parts repair in order to maintain the structural integrity of the material. The new metals make corrosion protection and repair essential to maintaining the structural integrity of the vehicle. Increased use of plastics in uni-body design have forced auto technicians to add plastic repair techniques to their skills. Lastly, uni-body straightening and alignment requires more precise measurement and a new type of frame adjustment equipment.

Concern over the effects of such a major change in automobile design and its effects on the collision industry prompted the formation of the Inter-Industry Conference on Auto-Collision Repair (I-CAR) in 1979. It is a not-for-profit international educational organization dedicated to improving the quality, safety and efficiency of auto collision repair. Committed to inter-industry representation the organization consists of input from every facet of the auto body repair industry. The primary intent of I-CAR is to conduct extensive collision repair research and, based on this research, to develop and deliver technical education programs to professionals in the insurance and collision repair industries. A growing force in the industry, I-CAR has raised professional standards and provided exemplary training programs.

In its latest Annual Report (1992), I-CAR predicts the coming of several trends in both the auto manufacturing and in the collision repair industry. They include:

Auto Manufacturing:

* Electronic content will double by the year 2000.

* Plastic content, by weight, will increase 50% over 1990 levels by the year 2000.

* Major vehicle structure changes will begin in the mid-1990's. Aluminum will become an important structural material.

* Coatings and adhesives changes will continue at their present rapid rate.

Collision Repair:

* Decreased number of shops, but of larger size.

* Increased franchise and multiple shop operations under one owner.

* Specialization of job function is increasing and new ones are emerging.

* Increased professionalism in business management, customer relations, insurance relations, etc.

* Short and long term reductions in repair frequency will accelerate change, as will increased environmental and consumer regulation.

Source: I-CAR Annual Report, 1992

There is a growing resolve of national and state organizations to establish and enforce industry standards. The National Auto Technicians Education Foundation (NATEF) has developed standards to evaluate and certify auto body training programs. Under direct supervision of NATEF, the National Institute for Automotive Service Excellence (ASE) tests and certifies individual mechanics. ASE has developed two tests for auto body repair technicians, Body Repair (Test B1) and Painting and Refinishing (Test B2). ASE certification is highly respected nationally and is a basic requirement of many employers. Over one third (36.4%) of the employers surveyed by OCC claim ASE certification as a requisite for their repair technicians.

Presently, the Michigan Bureau of Auto Regulations (MBAR) requires that individuals involved with auto body repair in Michigan pass an exam in Collision Repair. According to Kirt Ferris, Assistant Director of MBAR, recent concern by people involved with the industry over the complexity of uni-body frame straightening and adjustments involved with the industry, has prompted the development of a second certification exam in Uni-body Repair. This requirement will go into effect in April, 1993.

Employment Opportunities

The U.S. Department of Labor reported that automotive body repairers held about 219,000 jobs in 1990. Most worked for shops that specialized in body repairs and painting, and for automobile and truck dealers. Others worked for organizations that maintain their own motor vehicles such as trucking companies and automobile rental companies. Twenty percent of all auto body repairers were found to be self-employed. The latest information from the Michigan Employment Security Commission indicates that in 1988 there were 8,100 Automotive Body Repairers employed in Michigan and 3,350 working in the Detroit area (Appendix K).

Auto body repairers work in primarily two settings, auto body shops and auto dealerships. Dealerships generally hire only experienced technicians and results from the OCC Employer Survey indicate that they also require a higher level of educational training. In Michigan, as of 1988, 37.0 percent of auto repairers and automobile painters worked in auto body shops, 27.6 percent worked in auto dealerships, and about 18.2 percent were self-employed. The rest work in manufacturing, construction and government (MOIS).

Sixty-two employers were interviewed in order to obtain information about current employment opportunities in auto body repair in the Detroit area. They reported employing on average 7.7 full-time auto body personnel. Only seven of the auto body shops and dealerships contacted, employed part-time staff. Employers were asked to give job titles of the employees they consider "entry-level auto body personnel." Because the shops contacted varied in size and organization, a large number of job titles were provided. To simplify this analysis, the jobs were grouped into seven general categories (Appendix E). They include:

1. **Porter** - non-skilled worker hired to transport vehicles from parking sites to the shop. Often includes custodial duties in many shops.

2. **Helper** - non-skilled worker hired to maintain the cleanliness of the shop and also to assist technicians. The helper, sometimes referred to as an apprentice, receives some auto repair training. (By many considered the primary means of entering the field.)

3. **Entry-Level Auto Body Technician** - trained employee with limited experience. Responsible for all tasks involved with auto body repair. Salary and flat rate incentive payments are significantly lower than for experienced technicians.

4. **Auto Body Technician** - Trained and experienced employee. Responsible for all tasks involved with auto body repair.

5. **Painter** - Experienced technician, highly trained in the area of auto painting and refinishing and primarily responsible for this component of auto repair.

6. **Frame Specialist** - Experienced technician, highly trained in the techniques of frame straightening and alignment.

7. **Mechanic** - Trained and experienced employee primarily responsible for the repair of the damaged mechanical components of the vehicle.

The Automotive Service Association (ASA) reports that the collision repair industry offers some of the best opportunities available for steady employment, good salary, and career advancement. Information from the U.S. Department of Labor publication, the Occupational Outlook Handbook supports the ASA position but adds that job openings in the field can become scarce during a recession because, "Most employers hire fewer new workers during an economic slowdown. As a result, persons seeking to enter this occupation may face increased competition for jobs during recessions."

The most recent recession may have had some effect on employment opportunities in auto body repair in this area. Only 10 (16.1%) of those employers surveyed stated that they were presently hiring auto body repair personnel. Seventy percent (70%) cited expansion of the company as the primary reason for hiring new personnel, while the rest (30%) stated that they had openings because of employee turnover.

The majority of auto body repairers enter this occupation by transferring from related helper positions. They learn the trade through years of on-the-job training as helpers or apprentices, picking up skills from experienced body repairers. Accordingly, when asked about their hiring requirements, the majority (59.7%) of employers stated that they required no formal educational training from their employees, although 19 (30.6%) did suggest that entry-level personnel could be better prepared through formal training and basic education.

The current employment opportunities for trained auto body repair technicians entering the field in the Detroit area appear to be somewhat limited. The impact that this finding has on the OCC VBT program is unclear. First, if information from the Occupational Outlook Handbook is correct, this may just be a temporary shortfall in positions caused by the recession. More importantly, only 24.6% of students surveyed indicated that they are taking VBT courses to prepare for a new career. A much larger percentage of students (71.9%) claimed to be interested in VBT for personal development. Information from the Graduate Follow-Up Survey shows that all of the graduates of the OCC VBT program between August 1988 and August 1991 who were seeking positions in auto body repair, totalling 4, were able to find jobs within an average of 4.75 months. Therefore, job availability may not affect the viability of the program.

Employment Outlook

The U.S. Department of Labor describes employment in the field of automotive collision repair and refinishing as relatively stable, although job openings may be somewhat limited during a recession. Barring the advent of continued economic recession, evidence suggests that the need for auto body repair personnel will continue to grow steadily into the next century. Projections by the U.S. Department of Labor indicate that employment of automotive body repairers is expected to increase about as fast as the average for all occupations through the year 2005. Correspondingly, the Michigan Employment Security Commission (MESC) predicts that by the year 2000, the number of jobs in auto body repair will increase 13 percent, on an average of 250 jobs per year.

Projections available from MOIS indicate that 160 (64%) of the openings in auto body repair through the year 2000 will be due to replacement of those who retire, die, or leave the labor force for other reasons. Only 90 (36%) of the job openings are expected to occur due to growth in the field. In the Detroit area, the growth rate of these positions is expected to be only 7 percent or 90 positions per year, 22 percent due to growth and 78 percent due to replacement (Appendix K). However, as cited earlier, surveyed employers ranked growth as the primary reason for hiring new employees.

Research by the I-CAR Education Foundation suggests that the need for skilled auto body repair technicians far exceeds the number of qualified, entry-level employees and that the gap will continue to grow over the next two to five years. Reasons given for the "crisis" include the steady growth of the industry, changes in the labor pool, a poor industry image, and inadequate vocational-technical training. According to I-CAR (1992) the U.S. needs approximately 50,000 entry-level technicians and appraisers each year. The industry now gets about 30,000 entry level people from traditional vocational education schools. Of those 30,000, only one-third have skills adequate to qualify as "entry-level." The Occupational Outlook Handbook (1992) also noted that demand for trained auto body technicians was greater than the supply of qualified applicants. At the same time, these sources report that most employers hire non-skilled workers as helpers and train them to be technicians on-the-job.

Retraining Opportunities

Due to transformations in the collision industry, auto body repair technicians have been obliged to expand and upgrade their skills. Of the employers surveyed, 42 (68.8%) indicated that they provide employees with either in-house training (49.2%) and/or send them out for training at other sites (59.9%). In their narrative remarks the employers mentioned that they utilized the training seminars offered by I-CAR (often referred to as I-CAR certification) and ASE. They also take advantage of seminars put on by vendors and paint companies, such as GM, Chrysler, and Dupont, that are conducted either in-house or at corporate training facilities. When asked about their customized training needs, several voiced an interest. Their comments included:

"There is a need for in-depth training in wheel alignment, front suspensions, and air conditioning recharge. Schools compete with I-CAR certification which is accepted by Allstate and AAA insurances."

"They (employees) should have advanced training in computers."

"Air conditioning service course."

Twelve students (21.1%) surveyed by OCC claimed to be taking VBT courses, in part, to improve their technical skills for work. Over 10 percent of the students enrolled in VBT courses are in the General Motors, Phase 2 program. The purpose of Phase 2 is to retrain GM employees who face potential job elimination for a new career.

Employee Benefits

Wage and Salary

Figures from the U.S. Department of Labor indicate that body repairers employed by automobile dealers in 18 large metropolitan areas had average annual earnings of $37,960 and helpers and trainees usually earn 30 to 60 percent of the earnings of skilled workers. Similarly, surveyed employers reported average salaries of $36,445 for auto body technicians, $20,400 for entry-level technicians, and $14,388 for helpers.

Table 3
Average Salaries

JOB TITLES	Average Salary
Porter	$14,800
Helper	$14,338
Entry level auto body tech.	$20,400
Auto body technician	$36,445
Painter	$40,206
Frame Specialist	$33,730
Mechanic	$19,000

Source: OCC, VBT Employers Survey 1992

The majority of body repairers employed by automotive dealers and repair shops are paid on an incentive basis. Under this method, body repairers are paid a predetermined amount for various tasks, or a "flat rate". Earnings depend upon the amount of work assigned to the worker

and how fast it is completed. Some of these salaries given by employers in response to the OCC survey include the rate of commission and some do not. Therefore, many of the salaries reported in Table 3 are estimations by the employer. If they are at fault, most likely they are too low.

Advancement Opportunities

Entry-level personnel in the auto collision industry have several avenues of advancement. To begin, an auto body repair technician can advance to higher status and a higher pay level in a body shop by becoming more efficient and skilled. According to OCC survey results, the majority of shops pay their technicians a commission for each job completed. In fact, several employers stated that their auto body technicians were paid exclusively by the job, and hourly wages were not given. Therefore, as technicians become more experienced their wages begin to climb. This explains the large salary difference reported by employers between entry-level auto body technicians, averaging $20,400, and the salaries of experienced auto body technicians, averaging $36,544. Within the ranks of smaller shops this may be the only type of advancement possible, employers explained:

> "Advancement is possible as far as pay increase. No change in title."
>
> "Advancement comes in the form of making more money, stability of employment, and being valuable to employer as skills and knowledge advance."
>
> "A Full Body Man is advancement. More money and job security...."

In dealerships or larger shops, an auto body repairman might ascend to higher ranked positions which include specialist, shop manager or foreman, estimator, and service manager. The specialist has primary responsibility for one aspect of repair, such as customized painting, glass replacement, frame straightening, or mechanics. The shop manager or foreman supervises the auto body technicians and helpers in the shop. An estimator calculates the time and cost of a repair. The service manager of an automobile dealership holds an executive position representing the firm in dealing with the service problems of the firm's clientele. He must keep the service department running smoothly and maintain good public relations. The prestige and benefits of these positions depends on the size of the shop.

Chilton's Guide to Auto Body Repair (1981) outlines several other potential career options in the field. They include auto insurance claims adjustors and appraisers, who investigate claims by interviewing the claimant and witnesses, consulting police and hospital records, and inspecting property damage to determine the extent of the company's liability, and material damage adjusters, who inspect automobile damage and use the latest computerized estimating equipment to prepare estimates of the damage. People experienced in automobile repair may qualify as automobile claim adjusters. (Occupational Outlook Handbook, 1992). A

personnel officer from the AAA Insurance Detroit Area headquarters stated in a telephone conversation with OCC, that the company does seek out individuals with auto body experience to be Claims Representative Trainees. Although a high school diploma was a requirement, experience was weighted more heavily than a post-secondary degree in their candidate selection.

A sales position with a manufacturer or distributor of body shop equipment, supplies, or paint is sometimes available to a body repairman and individuals with experience in refinishing and painting techniques can become a specialist with an equipment or supply manufacturer. These jobs are generally in three categories, instructor in a training program, lab technician, and field demonstrator. Chris Turk, Director of the Dupont Training Center stated that the majority of his employees train customers using Dupont products. Although he has an auto body background, he explained that few trainers came from the collision industry. He felt that individuals with a degree in auto body repair and experience in painting and refinishing could find positions at the Dupont Research and Development Lab as a technician. However, Mr. Turk noted, for these positions "a college degree is essential."

Occupational Training

Level of Training Needed

Research by the U.S. Department of Labor revealed that most employers in the field of auto body repair hire individuals without formal technical training, as a result individuals commonly enter the field via related helper or apprentice positions. Nevertheless, the U.S. Department of Labor suggests that most employers would prefer to hire people who have completed formal training, but there are not enough programs to supply employer's needs. As stated in the Occupational Outlook Handbook (1992), "Formal training is highly desirable because advances in technology in recent years have greatly changed the structure, components and even the materials used in automobiles. As a result, many new repair problems have been created and many new skills are required."

The need for trained individuals may not equate to the demand for employees with a post-secondary certificate or degree. Employers surveyed were asked what minimum educational requirements they held for entry-level auto body technicians. The majority (59.7%) answered that they required no educational qualification for technicians, although several mentioned that they prefer hiring individuals with a high school diploma. Nearly a third (32.2%) desired employees with a high school diploma or the equivalent. One-year training certificates were expected only by 8.1% percent of the employers, and Associate Degrees and Bachelor's Degrees were required by none. Dealerships had slightly higher educational standard than the body shops.

Table 4
Educational Requirements

EDUCATIONAL REQUIREMENT	Body Shops	Dealerships	All Employers
No Requirement	64.5%	54.8%	59.7%
High School Diploma or equiv.	32.3%	32.3%	32.3%
One-Year Training Certificate	3.2%	12.9%	8.1%
Associate's Degree	0.0%	0.0%	0.0%
Bachelor's Degree	0.0%	0.0%	0.0%
Total	100.0%	100.0%	100.0%

Source: OCC VBT Employers Survey 1992

Notably, nineteen employers (30.6%) stated that they hire exclusively experienced workers and one of the most frequently mentioned recruitment problems encountered was a "lack of experience" of the applicants. Employers want to hire body repair technicians who can do quality work from the start. As one individual stated, I "only hire those who have excellent qualifications. Those who can step in and do high standard work on the first job."

Where are individuals expected to gain the experience needed to enter the field of auto body repair? Earlier it was explained that the majority of technicians begin as helpers, learning the trade gradually. Yet, educational training does provide another method to gain the knowledge and skills to enter the field. Nineteen (30.6%) surveyed employers suggested that entry-level personnel would be better prepared if they had formal training and/or basic education. Their comment include:

> "They (entry-level personnel) could have some type of mathematical and mechanical training in addition to the body technology knowledge."
>
> "Need to be schooled and skill-educated for the car technology of today and tomorrow. Need to have book learning to back up skill knowledge."
>
> "They could have a two-year training course...if a man had I-CAR certification it would impress me."

Nevertheless, the low interest in educational qualifications by employers does indicate that post-secondary educational qualifications are not yet critical in the field. However, employers appeared to value technical training provided by I-CAR, ASE and other organizations.

Table 5
Skills Employers Evaluate As "Very Important"
When Hiring

SKILL	Body Shops	Dealerships	All Employers
Team Worker	87.1%	80.6%	83.8%
Social Skills	74.2%	90.3%	82.3%
Problem Solving Skills	77.4%	67.7%	72.6%
Math Skills	32.3%	29.0%	30.6%
Writing Skills	16.1%	19.4%	17.7%
Educational Background	12.9%	12.9%	13.0%

Source: OCC VBT Employers Survey 1993

Employers were asked to rate several general skills in terms of importance when hiring. Social skills, being a team worker and getting along with others were considered the most important. A large percentage of employers (72.6%) also valued problem solving skills. Math skills were rated as very important by 30.6%. Over seventeen percent (17.7%) of the employers indicated that writing skills were very important, although nearly half (46.8%) stated that this skill was not important to them. General educational background was only rated as very important by 12.9% of the employers.

As shown in Table 6, a list of specific technical skills were presented to employers to evaluate in a similar manner. Vehicle body repair skills, such as MIG welding, frame alignment, panel fitting and repairing sheet metal were rated highly. Repairing auto plastics was considered very important by 64.5% of employers. Sheet metal fabrication and panel fitting were significantly more important to dealers. All of the paint and refinishing skills listed were rated as very important by the majority of employers.

Of the remaining skills listed, knowledge of exterior molding and trim was the most valued. Body shop employers rated the ability to analyze mechanical components and understanding of electrical systems more highly than the dealerships. Possibly, smaller shops with fewer specialists must rely on the auto body technician to repair a larger range of problems.

About one-fourth of the employers indicated that cost estimation and writing a damage report was very important. Glass replacement was only rated very important by 9.7% of the employers surveyed.

Table 6
Entry-Level Technical Skills
Rated "Very Important" By Employers

Body Repair Skills	Body Shop	Dealership	All Employers
Frame Alignment	64.5%	83.9%	74.2%
Uni-Body Alignment	74.2%	87.1%	80.6%
M.I.G. Welding	80.6%	80.6%	80.6%
Repairing Auto Plastics	67.7%	61.3%	64.5%
Repairing Sheet Metal	83.9%	90.3%	87.1%
Panel Fitting	83.9%	100.0%	91.9%
Sheet Metal Fabrication	41.9%	54.8%	48.4%
Paint and Refinishing Skills			
Preparation of Paint	83.9%	87.1%	85.5%
Paint Mixing and Tinting	77.4%	71.0%	74.2%
Spot Painting/blending	80.6%	77.4%	79.0%
Overall Refinishing	83.9%	74.2%	79.0%
Other Skills			
Glass Replacement	9.7%	9.7%	9.7%
Exterior Molding and Trim	67.7%	64.5%	66.1%
Interior Repairs	16.1%	32.3%	24.2%
Electrical Systems	48.4%	16.1%	32.3%
Cost Estimation	25.8%	25.8%	25.8%
Writing a Damage Report	29.0%	25.8%	27.4%
Analyzing Mech Comp.	67.7%	29.0%	48.4%

Source: OCC Employer Survey 1992

When asked to describe the single most important quality or characteristic looked for when hiring auto body repair technicians, the most commonly mentioned characteristic described was a "good attitude."

"Need self-assured person who will work hard and do the work properly."

"Professional attitude and the ability to learn."

"A willingness to learn and work with others."

Some employers stated that they look for experience, quality and knowledge of the job. Other attributes mentioned include appearance and dependability.

As mentioned earlier in this report, professional certification from nationally recognized organizations and state governments has become increasingly important to gain employment, and in many states, has become a requirement by law. Nearly all of the local employers (88.7%) surveyed require some type of certification. As would be expected, a large percentage of employers, stated that they require one or both types of Michigan certification, in Collision Repair (94.5%) and in Uni-Body Repair (87.3%). Lower demand for Uni-Body certification might reflect the fact there are still a few months before the law goes into effect. Furthermore, as explained by Mr. Ferris at the Michigan Bureau of Automotive Regulations, although most individuals involved with auto body repair will need to pass both exams, many who are not involved with frame adjustment or more technical repairs, such as Painters and Helpers, do not have to be certified.

Certification by the nationally recognized Automobile Service Excellence (ASE) was also expected by 20 employers (36.4%). Additionally, 20 employers (36.4%) stated that they only hire auto body technicians that have been certified by I-CAR (completed the I-CAR Collision Repair Training Program). Other certification requirements mentioned include: Mo-Tech; electrical, mechanical brakes, and air conditioning certification; Allstate Insurance; and GM Tech Center.

Table 7
Certification Requirements

TYPE OF CERTIFICATION	NUMBER	PERCENT
Michigan Certification in Collision	52	94.5%
Michigan Certification in Uni-Body	48	87.3%
Other Certification	22	40.0%
ASE certification	20	36.4%

Source: OCC VBT Employers Survey 1992

Adequacy of Currently Available Training

Nationwide there are thousands of auto body repair training programs offered in secondary and post-secondary institutions, as well as public and privately run training organizations. Nevertheless, some concern exists that the number of trained entry-level auto body repair technicians is not meeting current need.

In Michigan, auto body repair programs are offered in vocational high schools, community colleges, universities, and private vocational schools and training centers. Interestingly, the number of individuals enrolled in auto body repair programs per year far exceeds the number of positions available in the field. As reported earlier in this report, it is

predicted that annually there will be 250 job openings in auto body repair in Michigan and 90 openings in the Detroit area, through the year 2000. Yet, according to figures from the Department of Education and our own investigation, there were 1,847 students in Michigan's vocational-technical schools in 1990-91 and approximately 345 college students in 1989-90 were enrolled in auto body repair programs. Additionally, many individuals attend auto body repair courses in private colleges and training institutions such as I-CAR. A rough estimate of enrollment in auto body repair suggests that there are over 2,000 students in auto body repair programs per year, eight times the number of yearly job openings.

Regardless of the number of students enrolled in auto body repair programs in Michigan, data obtained from local employers indicates that the majority (54.1%) have difficulty finding well qualified personnel, supporting I-CAR's predictions of a shortfall in qualified entry-level personnel in the auto body repair field. Evidently, enrollment in auto body repair programs does not provide a clear indication of the size or quality of the entry-level applicant pool. Explanations for this desparity might include the fact that the majority of students' career and educational goals were not available. However, nearly three-fourths (71.9%) of the students surveyed by OCC were taking VBT courses for personal development, and only 24.6% were enrolled in the VBT program to prepare for a new career. These results suggest that many of the individuals enrolled in auto body repair programs may not seek employment in the field. Furthermore, the quality of available auto body repair programs is unknown.

Measuring the adequacy of educational opportunities in auto body repair presents additional challenges because many employers value experience over education, and train the majority of auto body technicians on the job.

Post-Secondary Institutions Offering Auto Body Repair

Presently, 7 community colleges, 3 universities and 2 training schools, offer Auto Body Repair programs in Michigan, as described by the Center for Education Statistics, Classification of Instructional Program Code 47.0603 (Appendix L).

Throughout the nation, there has been a notable decline in enrollment in auto body repair programs (I-CAR, 1992). This trend has been felt in Michigan. Over the past few years, three college programs have been eliminated in the state and one program has been suspended. Bay de Noc Community College discontinued their auto body repair program eight years ago because of low enrollment coupled with high costs. The programs at Kalamazoo Valley Community College and St. Clair Community College were canceled because of low enrollment. In addition, Wayne County Community College's Auto Body Repair program is currently under review. Although the program has not been officially dropped, no courses are being offered. Consequently, the number of post-secondary program in auto body repair has decreased significantly. Oakland Community College now offers the only college program in this field in the Detroit area.

For the purposes of this study, nine state-supported Michigan colleges, one private university, and two proprietary institutions were contacted regarding auto body repair.

Alpena Community College: Alpena Community College (ACC) offers a 1 year program in Auto Body Repair that begins in the fall term and runs through the end of summer term. It is listed as one of the sub-specialties of the automobile repair and maintenance industry. According to Tom Winter, the only full-time faculty in the auto body repair program, this specialty has been changing rapidly in recent years because of new materials, assembly processes and tools. He feels that the one-year curriculum at ACC provides the modern training required to be up to date in this field of work. Skill areas that are covered include; removing, replacing and straightening of body panels and fenders, welding and leading, and refinishing processes including types of coating, painting procedures, rubbing and polishing. Students must also take and pass the ASE National Certification for Auto Body Repair Technicians and the two Michigan certification tests in order to complete the program.

Between Fall 1988 and Fall 1992 terms the ACC Auto Body Repair program has had a steady enrollment of 18 students. The graduation rates have also remained constant, averaging 11 graduates over the past five years. Mr. Winter feels that the success of this program is due to several factors including a high placement rate after graduation, an intensive and comprehensive one-year curriculum, and finally the lack of competition in the area.

Grand Rapids Community College: The Grand Rapids Community College Auto Body Repair and Industrial Painting program is part of their Occupational Training division or JCOT, which offers hands-on job specific, non-credit training in several fields. These classes require attendance of 8 hours per day, five days a week and range from 16 to 36 weeks. New students are enrolled each month and are encouraged to progress at their own pace throughout the training.

According to the Director of Occupational Training, Mr. Tom Buzer, the Auto Body Repair and Industrial Painting training option is designed to "train entry-level auto body repair personnel as well as industrial spray painters." The intent is to give individuals the opportunity to get the skills they need to enter a new job in the shortest possible time. The Auto Body Repair and Industrial Painting program lasts 26 weeks. Students are expected to put in at least 40 hours a week to receive certification from the college. Obtaining National and State certification is not a requirement of the program, but students who are planning to become auto body technicians are urged to take the Michigan exams.

This program is funded by JTPA and the majority of students are referred to the program from JTPA. Enrollment in the 1991-92 school year was 41, graduates equaled 29, and 25 of those were employed upon completion of program.

Kirtland Community College: Kirtland Community College does not have an Auto Body Repair program as part of their regular, credited program offerings. Nevertheless, they do offer a one-year certification customized training program through the Contracting with Business/Industry department. The program combines off-campus, "hands-on" experience with on-campus related instruction. Students enrolled in the program must train at a local business twelve hours per week (192 hours per semester). They must also take courses that include: Professional Career Development, Engineering Fundamentals, Introduction to Welding, Basic Electricity, and two electives. This program has been in existence since 1986. According to Mr. Loiacano during this time, 6-8 students have been enrolled and 2 have graduated.

Lansing Community College: Lansing Community College offers a one-year certificate program and an Associate's Degree program in Auto Body Repair within the department of Automotive Technology. The one-year Auto Body Certificate Program is designed to provide the student with job entry skills for employment in the auto body repair industry. The curriculum consists of practical laboratory courses that give hands-on experience with techniques and equipment used in the field. The Associates Degree program is designed to develop an auto body repair technician capable of working with the new high-strength, lightweight materials, and skill in repairing components of steel, plastic, aluminum and fiberglass.

Enrollment in this program has grown over the past five years. In the Fall 1992 term they enrolled 111 students in auto body repair courses. Dr. Hayward feels that many students are enrolling in this program for retraining and upgrading skills. He attributes this trend to the vast changes in the industry, including the use of high-strength steels and the influx of uni-body designs, that require more complex welding and straightening methods of repair. There is a fairly extensive staff conducting the program including 2 full-time faculty, 4 part-time faculty, and one lab technician.

Mott Community College: In January, 1992, Mott Community College began to offer a two-year, Associate's Degree program in Auto Body Repair at its Fenton branch in Genessee County. Full operation of the program has been prevented because of delays in setting up the body shop. The courses that are being offered include: Auto Body Welding and Metal Finishing and Beginning Painting. Frame Straightening and Advanced Painting will be offered in the near future. The intent of the program is to give students the knowledge and skills required to weld auto body materials using oxy-acetylene torches, learn roughing, bumping and metal finishing and basic and advanced refinishing procedures. Students will also learn to estimate collision damage. The program was designed to meet the Department of Education's performance standards. Over the past year they have had 76 students enrolled in the program.

Washtenaw Community College: Since the WCC opened its doors in 1965, WCC has offered an Auto Body Repair program. The program offers three different majors. The first is the Auto Body Service Technician, Two Year Program. This 61 credit hour program prepares students to receive an Associates Degree. WCC also offers a one-year program in Automotive Body Repair, designed to provide training in auto body repair. The college also offers a one-year program in Automobile Spray Painting, which provides training to be an auto body refinisher. Students are encouraged to take the ASE test for certification, but it is not a requirement of the program.

Concern about the growing costs of the program and shrinking enrollments prompted a cost benefit study of the Auto Body Repair program, that was completed in Fall, 1992. The report indicated that the cost of their program per credit hour equaled $177.37 and the state average is $166.80. Furthermore, they found that 6% of all enrolled students graduate per year and 50%-60% of the career oriented students normally find a job in the work sector that was directly related to the program. Students and local shops were positive about the program. Finally, the advisory committee recommended several methods of reducing costs that included charging lab fees and increasing enrollment.

Wayne County Community College: Wayne County Community College offered an Auto Body Repair with two options: a one-year Certificate and a two-year Associate of Applied Science Degree. As of November 1992, the Auto Body Repair program at Wayne County Community College is on a two-year suspension and will go under a program review during that time. According to Dr. Olson, Dean of the Career and Technical Education Center, this suspension was prompted by low enrollments in the Auto Body Repair courses, the growing costs of equipment and tools, and the need to up-date curriculum. Dean Olson emphasized that the program is under study and has in no way been eliminated. He feels that the future of the program most likely will entail a merger with the Auto Service Technology Program. If that happens, WCCC will continue to offer Auto Body Repair courses but the program will be eliminated.

Andrews University: Students in the Auto Body Repair program at Andrews University are offered a two-year Associate of Technology Degree, or they can continue their course work in order to receive a four-year Bachelor of Technology Degree. The program focuses on technical courses that teach the fundamentals of auto body panel repair and adjustment, painting, frame straightening, and a major collision repair lab class for experience in all of these areas. Students are also required to learn business procedures by taking accounting, marketing, economics, and management. Additionally, all students must take the ASE certification exam before they can receive either the two-year or four-year degree.

The program functions with two full-time faculty members and the help of a lab technician. Under the direction of Dr. Gerald Coy, Associate Dean of the College of Technology, Andrews University obtained a dealer's license. Consequently, the University buys

damaged cars from insurance companies and students rebuild them. After, the college sells the vehicles and shares the profits with the students. Dr. Coy believes that this adds greatly to the program because it provides extra funds for the college and the students, as well as providing students with hands-on experience working on a wide range of auto body repairs. The curriculum is currently being revised using both NATEF and I-CAR guidelines.

Ferris State University: Ferris State University offers an Associate in Applied Science degree in Automotive Body that has existed for over 30 years. Many graduates continue on to complete a Bachelor degree program in automotive and heavy equipment management, which prepares students for advanced jobs in service, management and sales.

The Automotive Body program is designed to teach students general repair and refinishing techniques and writing repair cost estimates. Technical courses begin in sequence at the Fall of each academic year. Students in the program are also required to take general courses such as mathematics, science, English and humanities. Additionally, they must buy a set of hand-tools, protective eyewear, and have work uniforms. Lastly, students are strongly encouraged to take the Michigan Certification exams in uni-body repair and auto collision.

Jack Richards, the Head of the Automotive Technology Department, mentioned that two years ago this program was on line to be cut because of increased costs of equipment and limited growth in enrollment. A needs assessment was conducted in late 1991. The result of this study convinced the advisory board that the program was viable and should continue to be offered. Over the past two years, enrollment in Automotive Body has reached capacity, averaging 61 students per year. Graduation rates have remained low, averaging between 3-10 percent of total enrollment in the program over the past 5 years.

Northern Michigan University: Northern Michigan University offers a one-year, Auto Body Diploma program. In its over 8 year history, enrollment was described by the departmental secretary as stable. Fall enrollment figures from NMU indicate that over the past five years, an average of 35 students have chosen Auto Body as their major. The program attempts to train students in the skills needed to be an entry-level auto body technician and, according to Mr. Lorenz, NMU also focuses on academic development. All students in the program must take General Mathematics, Reading and Writing.

Edward Lorenz, the only full-time faculty member in the program, stated that efforts are being made to initiate a two-year, Associates degree program in auto body at the university. The proposed Associates degree program has been researched and developed, but still needs to be approved.

Autobody Schools of Michigan: The Autobody Schools of Michigan offers 12 programs in Autobody Repair and Painting. These programs last between 2 to 7 weeks or 20 to 70 hours. The program titles include: Auto Body Repair I, Auto Body Repair II, Auto Body Paint, Advanced Auto Body Restoration, Advanced Auto Body Paint, MIG Welding, Collision Estimation, and others. These programs cost between $245 and $793 dollars, which includes a $25 lab fee. Students are encouraged to work on their own vehicles and must supply their own materials. These classes are offered throughout the year.

I-CAR: I-CAR offers a wide range of courses in 4-hour units of instruction. The cost of these courses listed in I-CAR Winter 1993 Courses and Services Catalogue was $55 per block. The class schedules are established by the local I-CAR Committee and vary to meet the needs of the local participants. Nationally, I-CAR instructs nearly 20,000 individuals each year. Students are primarily those currently working in collision repair shops and insurance claims offices.

Motech Automotive School: Motech offers a 6 month program in Auto Collision Repair. The program is designed so that students attend sessions five days a week, 6 hours per day. It is designed exclusive to place people in the job market upon completion of the program. Students must take the Michigan Auto Collision certification test to graduate and they are urged to take the ASE certification exam as well. Mr. Pitler describes their placement as aggressive and successful. Because it is exclusively a vocational program, Mr. Pitler explained that they try to screen out those individuals who are not serious about becoming auto body repair technicians. For individuals who are interested in auto body repair as a hobby only, Motech "recommends community college classes."

Students in the program can earn up to 30 college credits. Mo-Tech has developed an articulation agreement with Madonna University, so that interested students can transfer into their Automotive Technology program.

Adequacy of OCC, VBT Program

Of the 123 students that have taken at least one OCC VBT course over the past year, 57 were interviewed for this study. The characteristics of the survey population nearly duplicated that of the total number of students that have taken VBT over the past year. The only notable difference between the two populations is that the total population includes three women and the survey population is exclusively male.

The majority (86%) of the students indicated that they were currently employed, 70.2 percent full-time and 15.8 percent part-time. Of those students that are employed, 64 percent stated that the course work that they have taken at OCC in VBT was not related to their current employment. A significant number of the students whose work related to their studies in VBT

indicated that they were taking the courses in order to improve their technical skills and also improve their chances for a raise.

Students were asked to list the primary reasons they had taken a VBT course at OCC. Realizing that students might take courses for more that one reasons, they were allowed to check more than one response to the question. Therefore, the percent total equals more than 100 percent. The most common reason students gave for attending VBT classes was for personal development, chosen by 71.9 percent of the students. Furthermore, 17.5 percent of the population indicated that they had other reasons for choosing to take VBT courses that primarily included the desire to "to restore (my) own car" and to learn about it as "a hobby."

Ten students (17.5%) took VBT courses with the goal of getting a degree or a one-year certificate from OCC. Additionally, 24.6 percent, stated that they are taking courses to prepare for a new career, and 21.1 percent took classes to improve technical skills for their job.

Table 8
Reasons For Taking OCC VBT Courses

REASONS	NUMBER	PERCENT
For personal development	41	71.9%
To prepare for new career	14	24.6%
To improve tech. skills for job	12	21.1%
To get a degree/certificate	10	17.5%
Other	10	17.5%
To increase chance for a raise	4	7%
To transfer to another school	1	1.8%
Required by employer	0	0%

Source: OCC Student Survey, 1992
Total percents equal more than 100% because of multiple responses to the question.

When asked more specifically what they plan to do with the knowledge and skills that they gain in the program, more students mentioned "car restoration for profit" and "to repair personal vehicles" than career related choices, supporting the earlier finding that the majority of students are taking OCC VBT courses for personal development rather than preparing for a career, retraining, or receiving a certificate or a degree.

TABLE 9
Student's Future Plans

FUTURE PLAN	NUMBER	PERCENT
To work as and auto body technician	9	15.8%
To start own body repair business	12	21.1%
Car restoration for profit	11	19.3%
Car restoration for hobby	27	47.4%
To repair personal vehicles	28	49.1%
Other	11	19.3%

Source: OCC Student Survey, 1992

Total percents equal more than 100% because of multiple responses to the question.

There is a positive correlation between students that are going to school to earn a degree or a certificate, and those that are planning to work as auto body technicians, start their own auto body repair business, and partake in car restoration for profit. And, as would be expected, students who are interested in auto body repair primarily as a hobby indicated that they are not in the VBT program to get a degree or a one-year certificate.

Although there are no designated specialties within the VBT curriculum, the OCC program does offer the opportunity for students to concentrate on either painting and refinishing techniques or metal fabrication. When asked which concentration they were most interested in 73.7 percent of the respondents chose painting and refinishing, while 35.1 percent chose metal fabrication. Ten students, or 17.5 percent, chose both concentrations.

In general, students are very satisfied with their VBT courses at OCC. Students were asked to rate all aspects of the VBT program including the variety, content, and scheduling of courses, the quality of the faculty and the equipment/technology available. The only aspect of the VBT program that students seemed somewhat less satisfied with was the equipment/technology available to them.

Table 10
Satisfaction with the VBT Program

PROGRAM ASPECTS	Satisfied	Neutral	Dissatisfied
Variety of courses	91.2%	8.8%	0.0%
Content of courses	87.7%	7.0%	5.3%
Scheduling of courses	84.2%	8.8%	7.0%
Quality of Faculty	82.5%	12.3%	5.3%
Equipment/technology	73.7%	12.3%	14.0%

Source: OCC Student Survey, 1992

In order to get more detailed information concerning students' opinions about the VBT program, students were asked to describe what they most liked and disliked about the program. They were also given and opportunity to give suggestions on how they would improve the program.

Describing what they liked most about the VBT program, over a quarter (26.8%) listed the use of hands-on instruction. The second most popular response was the quality of the instructors. Many also appreciated being able to work on their own cars. Narrative comments included:

> "The instructors were helpful, there was hands-on training, and things were explained well."
>
> "I like the hands on approach and being able to work on my own car."

Consensus among students was lower concerning what they disliked about the program, but some trends did appear. Over one third of the students (34.1%) stated that they felt that they were unhappy with the equipment available to them, 19.5 percent stated that the equipment was outdated and 14.6 percent felt that the supply of equipment in the lab was inadequate. High on the list of dislikes was also the quality of the instruction, an interesting finding because this was also high on the list of what is most liked about the program. A partial explanation for this result is another common dislike among the students, which is the under-staffing or "lack of availability" of both faculty and in lab assistants. It should also be mentioned that there was some dissatisfaction with the structure and scheduling of the curriculum. These comments include:

> "Classes are too segmented. If your car didn't need a repair, you didn't learn that repair."
>
> "There wasn't enough formal instruction. Class could be a little more specific."
>
> "Scheduling. Two courses in program are not available in p.m.."

The most common suggestions for ways to improve the VBT program concerned improving the quality and distribution of equipment, mentioned by 41.9 percent of the students. Many students also mentioned the need for additional faculty and staff. Lastly, the final comments made by students about the program were positive, indicating that overall they felt it was a "good program."

Table 11
LIKES, DISLIKES, AND SUGGESTIONS
Most Common Responses

What do students MOST like?

Hands on instruction	26.8%
Instructors	19.6%
Working on own vehicles	17.9%

What do students MOST dislike?

Outdated Equipment	19.5%
Not enough equipment	14.6%
Instructors	9.8%

Suggestions to improve the VBT program?

Update equipment	32.6%
Get more equipment	9.3%
Get Additional Staff	11.6%

Source: OCC Student Survey, 1992

CONCLUSION

Summary

The auto body repair industry has experienced significant modifications over the past two decades in reaction to changes in automobile manufacturing. Modern car designs and materials require more advanced methods of repair. In reaction to these changes, the auto collision industry has become increasingly professionalized, with upgrades in certification requirements and a slow shift toward specialization.

Educators and industry analysts alike agree that technological advances in the collision industry call for more advanced initial training of auto body repair technicians and retraining of experienced technicians. Both I-CAR and the U.S. Department of Labor found that there is a shortfall in qualified entry-level auto body repair personnel. In support of their conclusions, OCC found that the majority (54.1%) of employers surveyed have difficulty finding qualified personnel. However, the need for trained personnel may not equate to the demand for employees with a post-secondary certification or degree. Employer survey evidence indicates employers value experience and technical skills over formal training.

Industry information may only be of marginal importance to the assessment of the OCC VBT program. Students indicated that they were generally pleased with the programs offerings, with the exception of the distribution, quality and availability of equipment. In addition, the majority of students are involved with the program for personal development rather than career preparation. Therefore, the need for the VBT program may continue at its current level for many years to come.

Issues

1. A small number of students in the VBT program are interested in auto body repair as a career (24.6%), the rest are taking VBT courses for personal development. Is OCC meeting the needs of both of these constituencies?

2. What is the real need for individuals with advanced training in auto body repair in Michigan? Employers surveyed did not claim to value formal, post-secondary training, although many highly regard I-CAR and ASE training programs.

3. If the number of students enrolled in auto body repair programs in Michigan annually, far exceeds the number of yearly job openings, why did the majority of employers surveyed indicate that applicants are not qualified? Is something wrong with the training they are getting?

4. How does the availability of auto repair positions and the demand for trained personnel effect the viability of the OCC, VBT program?

BIBLIOGRAPHY

Alabama Performance Based Instructional Guide For Automotive Body Repair. (1990). Tuscaloosa: Instructional Materials Trade and Industrial Education.

American Machinist. (1992). *Auto body line is fully automated.* Technology Trends Section, 136:19.

Barrier, Michael (June 1992). *A "Doctor" with a miracle cure.* Nation's Business, 16.

Berg, Eric (August 5, 1990). *Better hands for cars.* New York Times, 4A:10.

Chilton's Guide to Auto Body Repair. (1989). Radnor: Chilton Book Co.

Clipp, Richard (April 1992). *How to find qualified technicians.* AutoInc, 6(4):28-30.

Cooke, John (1990). Auto body repair. Middlesex County Vocational and Technical High Schools, 1991 Edition of Course Study Outlines. East Brunswick: McGraw-Hill Book Co.

Gregory, M.R. and Benson, R.T. (1984). V-Tech Guide for auto body repair. South Carolina Department of Education.

Grossblatt, R. and Boynton, B. 1990. The weekend mechanic's auto body repair guide. Blue Ridge Summit: TAB Books, Inc.

I-CAR Educational Foundation (1992). *A symposium: the crisis shortfall of qualified entry-level employees for the collision industry.* Chicago.

I-CAR (1992). *I-CAR annual report fiscal 1993-1997.* Rolling Meadows.

Kushnerick, J., Freeman, K. (Eds). (1981). Chilton's guide to auto body sheet metal repair. Radnor: Chilton Book Co.

Scharff, Robert (1988). Motor auto body repair. Albany: Delmar Publishers, Inc.

Schmeal W.R., and Purcell, John (eds.). 1988. *New Polymer Technology for auto body exteriors.* AICHe Symposium Series. Vol 84 (260). New York: American Institute of Chemical Engineers.

Tolboldt, Bill. (1982). Autobody repairing and repainting. South Holland: The Goodheart-Willcox Company, Inc.

U.S. Department of Labor (1992). Occupational Outlook Handbook, 1992-93 Edition. Washington, D.C.

Vaccari, John (1992). *Laminated paint auto body parts.* American Machinist, 136:45.

Whittemore, Meg (October 1991). *Bumper-to-bumper auto care.* Nation's Business. 70-71.

Winter, Drew. (1988). *Market driven: new plastic alloy.* Ward's Auto World, 73.

SUPPLEMENTAL REFERENCES

Anderson, Arnie. Dean of Vocation and Technical Education, Bay de Noc Community College. Phone Conversation.

Ashcroft, Fred. Mott Community College. Phone Conversation.

Berkely, Laura. Inter-Industry conference on Auto Collision Repair (I-CAR). Phone Conversation.

Conn, Gloria. Vocational Technical Administrator. Wayne County Regional Education Service Agency. Phone Conversation.

Cousino, Ron. Director, U.S. Department of Labor, Bureau of Apprenticeship and Training.

Coy, Gerald. Associate Dean, College of Technology, Andrews University. Phone conversation.

Davenport, Bill. National Auto Technicians Education Foundation and Automotive Service Excellence. Phone conversation.

Ferris, Kirt. Michigan Bureau of Auto Regulations. Phone Conversation

Folkening, James. Director, Michigan Dept. of Education. Phone Conversation.

Forrest, Jerry. Michigan Department of Education. Phone Conversation.

Galaway, Joel. Dean of Technology, Ferris State University. Phone conversation.

Glinieki, Anita. Dean of Occupational Programs, St. Clair Community College. Phone conversation.

Grobe, Loretta. Michigan Department of Education, Proprietary Schools. Phone conversation.

Hanaman, Jim. Oakland Schools District Office. Phone Conversation.

Hayward, Walt. Director of Transportation, Lansing Community College. Phone conversation.

Hundsucker, Jim. Michigan Bureau of Auto Regulations. Phone Conversation.

Jordan, P. Faculty, Washtenaw Community College. Phone Conversation.

Loiacano, John. Coordinator of Contract Education Programs, Kirtland Community College.

Phone conversation.

Lorenz, Edward. Faculty, Northern Michigan University. Phone Conversation.

MacKenzie, John. Michigan Center for Career and Technical Education. Phone conversation.

Manthei, Dan. Principal. Oakland County Tech Center, Northwest Campus. Phone conversation.

Martin, June. Oakland Schools District Office. Phone Conversation.

Olson, Samuel. Dean of Career and Technical Education. Wayne County Community College. Phone conversation.

Peters, Till. Dean of Occupational Education, Grand Rapids Junior College. Phone conversation.

Pitler, A. Instructor, Mo-Tech Automotive Training Center. Phone Conversation.

Roosevelt, Daniel. Principal. Oakland County Tech Center, Northeast Campus. Phone conversation.

Thomas, James. Sergeant, United States Airforce. Phone Conversation.

Wilkinson, Bill. Public Affairs Officer, U.S. Navy. Phone Conversation.

Williams, Roger. Director, Auto Body Schools of Michigan. Phone conversation.

Winter, Tom. Alpena Community College. Phone conversation.

Woodward, Dan. Educational Consultant, Michigan Department of Education, Career and Technical Education, Secondary Education. Phone Conversation.

Xenos, John. Principal. Oakland County Tech Center, Southwest Campus. Phone conversation.

APPENDIX A: Description of the Program

Vehicle Body Technology

Auburn Hills

This program leads to an Associate Degree and/or a Certificate with a specialty in Vehicle Body Repair. This program provides instruction and laboratory practice on modern equipment using current methods consistent with the needs of industry. This program will include all phases of auto body repair. Special emphasis will be placed on small business management as well as advanced techniques in auto body repair.

Major Requirements			Credits
IND	100	Introductory Seminar in Industrial Sciences	2
VBT	101*	Fundamentals of Auto Body Repair	6
VBT	121*	Vehicle Body Painting and Refinishing	6
VBT	131*	Panel Reconstruction and Repair	6
VBT	201*	Frame Alignment and Correction	6
VBT	221*	Advanced Body Repair Processes	6

Required Supportive Courses			
IND	140.3	Cooperative Internship	3
IND	240.3	Cooperative Internship Advanced	3
ATA	180	Automotive Air Conditioning and Heating	4
TEW	110	Welding A/G	3

Students must select, with departmental approval, 6 credits from the following:

BUS	121	Starting and Operating a Small Business	3
BUS	131	Principles of Supervision	3
ATA	120	Front Suspension and Steering Service	4
ATA	130	Automotive Electrical Systems Servicing	4
TEM	101	Basic Mathematics[1]	3
VBT	125	Custom Vehicle Painting	4

General Education Requirements

See graduation requirements for an Associate in Applied Science Degree on Pages 33, 35 and 36.

[1]Or higher level course.
★General Education courses listed as Required Supportive may be used to meet requirements of the General Education component.
*When all courses marked with an asterisk are completed, the student may apply for a certificate.

APPENDIX B: Advisory Commitee Notes

OAKLAND COMMUNITY COLLEGE
AUBURN HILLS CAMPUS • 2900 FEATHERSTONE ROAD • AUBURN HILLS, MICHIGAN 48057 • 313-853-4200

May 26, 1986

Dear Vehicle Body Advisory Committee Member:

In attendance at the Vehicle Body Advisory Committee meeting on May 22, 1986 were the following members:

Harvey Eschenburg - OCC
Barbara Einhardt - OCC
Scott Irwin - NWOVEC
Thomas Porcelli - Bowman Chevrolet

1) Mr. Harvey Eschenburg, faculty member in charge of the program, discussed the curriculum. Instruction includes Auto Body Repair, Painting and Refinishing, Reconstruction, Alignment and Correction and Advanced Body Repair Processes.

2) The group toured the auto lab and felt that although the facilities are good, an improved spray booth (preperably with a down draft system) would be a good addition.

3) The committee expressed a need to market this program to make the community more aware of its existence.

4) Since some of the area vocational schools also have programs in Auto Body, more communication between the high school instructors and OCC faculty is needed.

5) Program surveys were completed for the State Dept. of Education (See attachment)

Sincerely,

Barbara Einhardt
Admin. Assistant:
Dean of Career Education

c: Dr. Gram
Dr. Rose

3. b. Summary of Evaluation Perceptions by Students

Number of Students Participating 38

Comments:

- Practical experience opportunities are very good
- Lab facilities are good
- Instructors are knowledgeable

Recommendations:

- Continue updating courses to keep up with requirements in dealerships

4. Summary of Community College Action Plan - (Include comments on goals and objectives, processes and resources. Use additional sheets if necessary.)

- The Advisory Committee will meet regularly.
- The addition of a new spray booth will be reviewed.
- The college will place added emphasis on marketing this program.
- More communication will be held with high school instructors.
- The curriculum will be reviewed for updating of courses.

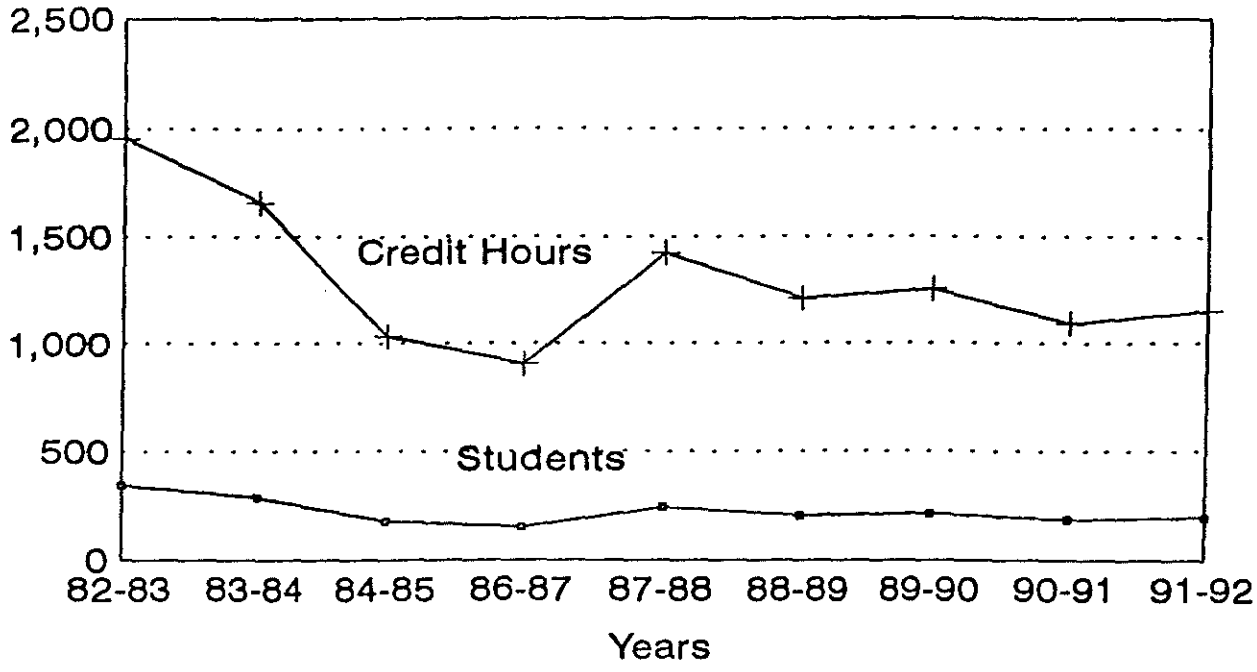
APPENDIX C: Enrollment and Graduation Trends

Oakland Community College

Oakland Community College

SCH and Enrollment in Vehicle Body Technology

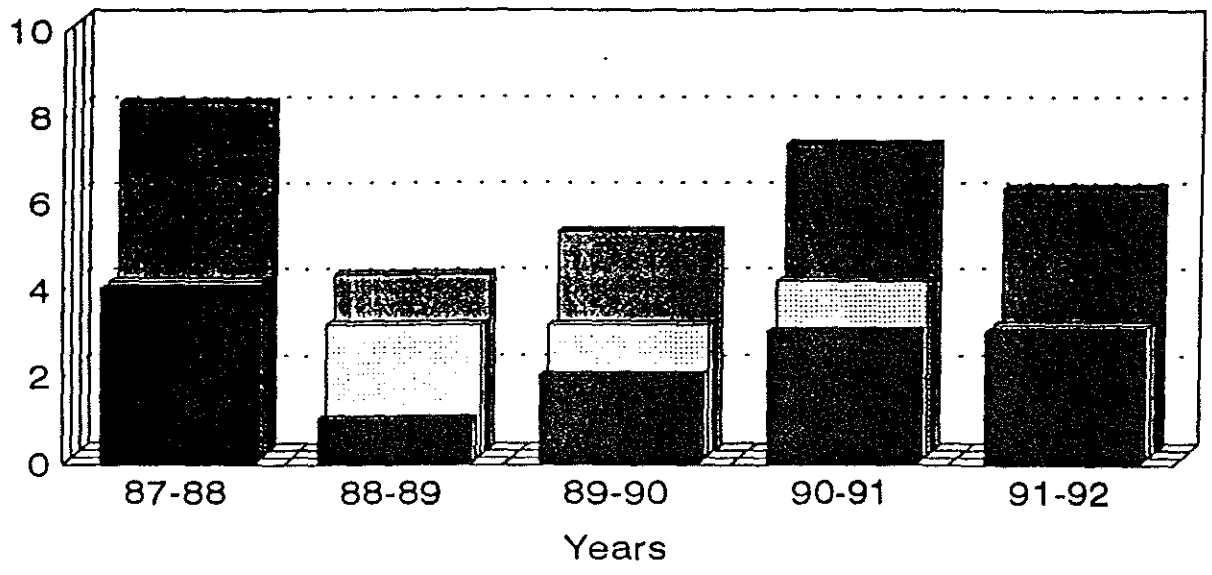
(1982-83 through 1991-92)



Source of Data: ACS-6 Enrollment Report

Degrees in Vehicle Body Technology

(1987-88 through 1991-92)



SOURCE: OCC Office of Institutional Planning & Analysis, March, 1992.

OAKLAND COMMUNITY COLLEGE
DEGREES AWARDED BY PROGRAM
(1987-88 through 1991-92)

Program	1987-88	% of Total	1988-89	% of Total	1989-90	% of Total	1990-91	% of Total	1991-92	% of Total	Percent Change 1990-91 to 1991-92	Percent Change 1987-88 to 1991-92
Machine Tool Tech	0	0.0	1	1.3	1	1.3	0	0.0	0	0.0	---	---
Machine Tool-Numerical Control	0	0.0	0	0.0	0	0.0	0	0.0	1	0.9	---	---
Manufacturing Technology	9	9.0	6	7.8	15	19.5	11	11.3	13	12.1	18.2%	44.4%
Mechanical Design Technology	2	2.0	1	1.3	1	1.3	3	3.1	1	0.9	-66.7%	-50.0%
Mechanical Production Tech	0	0.0	3	3.9	0	0.0	0	0.0	0	0.0	---	---
Quality Assurance Technology	0	0.0	0	0.0	0	0.0	0	0.0	2	1.9	---	---
Robotics Tech-Automated Systems	0	0.0	0	0.0	0	0.0	0	0.0	1	0.9	---	---
Robotics Tech-Electromech.	29	29.0	11	14.3	6	7.8	12	12.4	6	5.6	-50.0%	-79.3%
Robotics Tech-Hydromech.	5	5.0	4	5.2	2	2.6	1	1.0	3	2.8	200.0%	-40.0%
Vehicle Body	4	4.0	1	1.3	2	2.6	3	3.1	3	2.8	0.0%	-25.0%
Welding/Fabrication Technology	2	2.0	0	0.0	0	0.0	0	0.0	0	0.0	---	-100.0%
TOTAL Auto Technologies	100	100.0	77	100.0	77	100.0	97	100.0	107	100.0	10.3%	7.0%
BUSINESS												
Accounting	78	11.9	82	14.8	80	13.4	68	11.6	80	12.8	17.6%	2.6%
Business Administration	409	62.2	345	62.2	389	65.3	385	65.7	400	63.9	3.9%	-2.2%
Business Information Systems	0	0.0	0	0.0	0	0.0	0	0.0	2	0.3	---	---
Computer Info Systems	0	0.0	0	0.0	0	0.0	2	0.3	8	1.3	300.0%	---
Conference & Court Reporting	1	0.2	1	0.2	1	0.2	0	0.0	1	0.2	---	0.0%
Data Process Bus. Programming	44	6.7	31	5.6	34	5.7	21	3.6	21	3.4	0.0%	-52.3%
Data Process Computer Science	12	1.8	5	0.9	2	0.3	5	0.9	4	0.6	-20.0%	-66.7%
Data Process Systems Analysis	14	2.1	17	3.1	11	1.8	15	2.6	13	2.1	-13.3%	-7.1%
Executive Secretarial	6	0.9	4	0.7	7	1.2	5	0.9	4	0.6	-20.0%	-33.3%
Pre-International Commerce	1	0.2	0	0.0	0	0.0	1	0.2	2	0.3	100.0%	100.0%
Legal Assisting	2	0.3	10	1.8	14	2.3	24	4.1	35	5.6	45.8%	1650.0%
Legal Secretarial	8	1.2	5	0.9	2	0.3	4	0.7	1	0.2	-75.0%	-87.5%
Mgmt Dev-Business Management	29	4.4	15	2.7	16	2.7	17	2.9	22	3.5	29.4%	-24.1%
Mgmt Dev-Retail Fashion/Buying	5	0.8	1	0.2	5	0.8	3	0.5	3	0.5	0.0%	-40.0%
Mgmt Dev-Retail Management	3	0.5	3	0.5	2	0.3	4	0.7	2	0.3	-50.0%	-33.3%
Mgmt Dev-Office Administration	11	1.7	9	1.6	8	1.3	6	1.0	4	0.6	-33.3%	-63.6%
Office Information Systems	5	0.8	11	2.0	14	2.3	24	4.1	22	3.5	-8.3%	340.0%
Word Processing/Text Editing	30	4.6	16	2.9	11	1.8	2	0.3	2	0.3	0.0%	-93.3%
TOTAL Business	658	100.0	555	100.0	596	100.0	586	100.0	626	100.0	6.8%	-4.9%

APPENDIX D: Joint Program Agreement Documentation

OCC

MEMORANDUM

TO:

P. Fulton	J. Davis
C. Gram	D. Jaksen
R. Saunders	B. Rose
J. Warner	J. Macri
M. Crow	M. McGee
G. Keith	D. Buchan
H. Kieba	S. Lorton

FROM: Dave Doidge DDoidge

SUBJECT: [redacted]

DATE: November 6, 1991

Attached please find a draft of the proposed agreement between OCC and Macomb Community College for offering joint programs, as prepared by Provost Blanzy. This proposal addresses many of the questions that were raised in previous discussions, and preserves the concept of providing additional educational options for students within the facilities and resource of the two colleges.

Please review the proposal and send me your response by November 27. Based on your responses, I will work out final details with Dr. Blanzy, or reconvene the joint planning group, as appropriate. When a final acceptable document is ready, I will ask Chancellor Fulton for her approval.

Implementation of this agreement will be a significant step for both our College and Macomb. Thank you in advance for your valued consideration.

DD/nbr

attachment

D R A F T II
10/30/91

Joint Academic Programming Agreement

Between

Macomb Community College and Oakland Community College

Macomb Community College and Oakland Community College agree to cooperative academic programming whenever it is mutually feasible. The purpose of this agreement is to expand student access to programs of their choice in a cost effective manner. Generally the two colleges agree that existing programs which are relatively high in cost and low in student demand and do not currently exist at both colleges will be made available for students at either college.

A pilot program consisting of up to five programs from each institution will be made available for students from either college at the regular tuition rates of their home institution. The joint programming will begin no later than the Fall, 1992 term.

Two types of joint academic programming will be offered. The first type of joint academic programming will be in the form of a consortium agreement for Allied Health programs that require state and/or national accreditation. In this case, the college at which the program is accredited will be responsible for maintaining program accreditation and will charge all consortium identified students current in-district tuition and fees. Although the "sending" consortium college will list the program in their catalog and the classes in their schedule of classes, it will be clearly identified as a degree offered and conferred by the program accredited college. All non-specialized courses required for the degree will normally be taken at the "home" college and will transfer in total to the degree granting college.

The second type of joint academic programming pertains to all joint programs that are not part of a consortium agreement for Allied Health. For these programs, the college that does not currently have the program will duplicate the curriculum of the specialized part of the program, will obtain authorization through its governance structure to offer the certificate and degree in the specialization, will include the program in its catalog and will advertise the specialized course offerings in its schedule of classes in a manner to make it clear that the courses are offered at the college which originally had the program. In this case, the student will register at and pay tuition and fees to his/her "home" institution.

Procedures and Understandings Related to the Joint Academic Programming Agreement Between Macomb Community College and Oakland Community College

1. The ten pilot programs are:

At Macomb Community College	At Oakland Community College
1) Metallurgical Science Technology (South Campus)	1) Aviation Flight Technology (Highland Lakes Campus)
2) Plastics Technology (South Campus)	2) Vehicle Body Technology (Auburn Hills Campus)
3) Printing Technology (South Campus)	3) Exercise Science and Technology (Highland Lakes Campus)
Consortium Agreements	**Consortium Agreements**
4) Physical Therapist Assistant (Center Campus)	4) Radiologic Technology (Southfield Campus)
5) Veterinary Technician (Center Campus)	5) Hospital Pharmacy Technology (Southfield Campus)

2. The college currently offering each program is referred to as the "receiving" college and the college that will be adapting the program of the "receiving" college is referred to as the "sending" college.

3. The "sending" college will use its governance structure to determine whether the program will be added to the college's curriculum and which courses will be offered at the "sending" college and which will be offered at the "receiving" college.

4. Programs and classes will be included in both college's catalogs and both the catalog and schedule of classes will indicate at which college and campus the courses will be offered.

5. a. For Allied Health Consortium programs that require state/national accreditation, resident (in-district) students from the "sending" college will enroll in classes at the "receiving" college and will be charged "receiving" college resident (in-district) tuition and fees. The "receiving" college will be responsible for obtaining and maintaining program accreditation and/or approval. The "receiving" college will award the final degree earned by the student.

11. If either college chooses to eliminate a program while serving as a receiving institution, it can do so as long as it provides a year's notice to the other college so that arrangements can be made for the completion of the program by students enrolled in the program. The sending college can discontinue the joint programming agreement by simply notifying the receiving college.

OCC

M E M O R A N D U M

TO: Dr. Bill Rose, Dean of Academic Services

FROM: Harvey Eschenburg

SUBJECT: Joint Vehicle Body Course Offerings, OCC/MCCC

DATE: November 19, 1991

The faculty and staff of the Vehicle Body Technology program are pleased to hear that an agreement has been reached which will allow MCCC students to attend Vehicle Body classes at the Auburn Hills Campus of OCC on an in-district basis. This joint effort will not only help course offerings at OCC in the Vehicle Body Shop, it will also be a benefit to any students at MCCC who select Vehicle Body Repair as their course of study.

It is recommended that the following Vehicle Body Technology courses be included in the agreement:

VBT 101	Fundamentals of Auto Body Repair	6 credits
VBT 121	Vehicle Body Painting and Refinishing	6 credits
VBT 131	Panel Reconstruction and Repair	6 credits
VBT 201	Frame Alignment and Correction	6 credits
VBT 221	Advanced Body Repair Processes	6 credits
VBT 125	Custom Vehicle Painting	4 credits

It is also recommended that as these joint classes are scheduled, OCC will have 75 percent of the total number of positions available to resident students. This will allow five positions in each section to be scheduled at MCCC for Macomb County resident students.

rs

c. C. Gram
D. Buchan
L. Pennefather

APPENDIX E: Entry-Level Job Titles

Oakland Community College
VBT Employers Survey
Job Titles

1. **Porter**
   - Parts Runner
   - Trainee

2. **Helper**
   - Apprentice
   - Assistant
   - Body Shop Helper
   - Floor Technician
   - Flunky (Glorified)
   - Frame Helper
   - Painter Helper
   - Prepper
   - Prep. Painters
   - Trainee

3. **Entry-Level Auto Body Repair Technician**
   - Entry-Level Body Technician
   - Starter Bodyman
   - Assistant Bodyman/Paintman
   - Journeyman

4. **Auto Body Repair Technician**
   - Bumper
   - Collision Technician
   - Truck Repairman
   - Combos
   - Body Repairman
   - Bodyman
   - Body Shop Technician
   - Full Technician/Bodyman
   - Bump Technician

5. **Painter**
   - Paint Technician

6. **Frame Specialist**
   - Frameman

7. Mechanic

APPENDIX F: VBT Employer Survey

Survey Number_____

VEHICLE BODY TECHNOLOGY
NEEDS ASSESSMENT
EMPLOYER TELEPHONE SURVEY

Name of Business:_____

Type of Business: _____

City and Zip Code:_____

Telephone: _____

A. Once you reach the Director of Training, Personnel, Human Resources or other appropriate supervisor, be sure to record:

Name: _____

Title:_____

Phone:_____

Time Interview Begins:_____

1. Of the auto body repair technicians your company employs:

   a. How many are part-time (30 hours or less per week)? _____*(actual number)*

   b. How many are full-time (more than 30 hours per week)?_____*(actual number)*

2. Of those auto body repair technicians hired full or part time, what are examples of job titles and salary ranges for entry level positions? *(If they pay on commission, probe for estimated hourly (or weekly) wage)*

	Job Titles	Entry Level Salary Range	*(Circle correct response)*
a)	_____	_____ to _____	per hour/week/month/year
b)	_____	_____ to _____	per hour/week/month/year
c)	_____	_____ to _____	per hour/week/month/year

3. Are you currently hiring entry level auto body personnel?

   1 _____ Yes
   0 _____ No *(Skip to 5)*

4. What is the primary reason for hiring these employees?

	Yes	*No*
a) Expansion of the company	1	0
b) Employee turnover	1	0

c) Other reasons. Please specify:_____

11. What kind of recruiting problems do you encounter?

12. With regard to preparedness for employment, in what ways would you say entry level personnel could be better prepared?

13. Please rate how important it is for entry level auto body repair technicians to have a strong knowledge base in the following applications using the scale: 3=Very Important, 2=Somewhat Important, 1=Not Important.

	Very Important	*Somewhat Important*	*Not Important*
a) Frame alignment	3	2	1
b) Uni-body alignment	3	2	1
c) M.I.G. Welding	3	2	1
d) Repairing auto plastics	3	2	1
e) Repairing damaged sheet metal panels	3	2	1
f) Panel fitting and alignment	3	2	1
g) Sheet metal fabrication	3	2	1
h) Preparation for paint	3	2	1
i) Paint mixing and tinting	3	2	1
j) Spot painting and blending	3	2	1
k) Overall refinishing	3	2	1
l) Glass replacement	3	2	1
m) Exterior molding and trim	3	2	1
n) Interior repairs	3	2	1
o) Electrical systems	3	2	1
p) Cost estimation	3	2	1
q) Writing a damage report	3	2	1
r) Analyzing mechanical components	3	2	1

14. Are there other skills you would like your entry level auto body repair technicians to have? Please explain.

15. As part of our review we are interested in understanding potential career paths for entry level auto body repair technicians. Could you explain what advancement opportunities are available, with examples of typical job titles.

APPENDIX G: Employers Surveyed

Vehicle Body Technology Needs Assessment
Employer's List

D = Willing to help in the development of a program
P = Willing to consider offering a paid internship
U = Willing to consider offering an unpaid intership

BODY REPAIR, PAINT SHOPS

Darwin Hogg (U)
Manager
Campbell Collision Inc
9987 E Grand River Ave
Brighton, Michigan 48116
(313) 227-6151

Jamie Lawson
Manager
Johns Corvette Care Inc
23954 Kean St
Dearborn, Michigan 48124
(313) 277-4700

Kevin Mott (P, U)
General Manager
Westborn Collision Inc
23717 Kean
Dearborn, Michigan 48124
(313) 565-7388

Neil Lefton (P)
Manager
Cadillac Body Svc Inc
8461 Grand River Ave
Detroit, Michigan 48204
(313) 898-5600

Marty Coyne
Plant Manager
Hulet Body Co
8578 Witt
Detroit, Michigan 48209
(313) 842-5400

Ken Nowak (D)
Body Shop Manager
Mc Donald Ford Sls Inc
14036 W Seven Mile
Detroit, Michigan 48235
(313) 341-1422

Doug Craig (D)
Manager
Muscat Bros Body Shop Inc
7405 Greenfield Rd
Detroit, Michigan 48228
(313) 846-0550

John Solano (D, U)
Owner, Manager
Solomac Inc
19035 W Davison St
Detroit, Michigan 48223
(313) 835-3425

Tim Palankan (D)
Part Owner
Yees Stan Collision Inc
16521 E 10 Mile Rd
East Detroit, Michigan 48021
(313) 771-0211

Scott Marsonek (P)
Owner, Manager
Farmington Hills Collision Ctr
32733 Folsom Rd
Farmington Hills, Michigan 48336
(313) 471-5744

Allan Kolito (P, U)
Body Shop Manager
Collision Craftmen Inc
23235 Telegraph Rd
Southfield, Michigan 48034
(313) 356-6888

John Gaglianos (D, P, U)
Owner, President
Gaglianos Auto Craft Inc
5923 E 14 Mile Rd
Sterling Heights, Michigan 48312
(313) 228-3950

Tony Attard
Partner
Ronys Body Shop Inc
11650 Allen Rd
Taylor, Michigan 48180
(313) 287-3910

Gordy Whiting (P)
Body Shop Assistant
Fischer Body Refinishing
1759 Maplelawn Dr
Troy, Michigan 48084
(313) 649-6100

Pat Smith (P, U)
Manager
Troy Collision Inc
931 Rankin
Troy, Michigan 48083
(313) 585-5850

Mike Whelan (D, P, U)
Owner
Prior Model Cars Inc
50111 Van Dyke
Utica, Michigan 48317
(313) 731-4600

James Overholser (D, P, U)
President
Eureka Body & Fender Inc
1801 Eureka
Wyandotte, Michigan 48192
(313) 285-9586

Walter Banka (D, P, U)
Owner
Bankas Collision Inc
6016 E 7 Mile Rd
Detroit, Michigan 48234
(313) 892-3510

Gary Komasara (D)
Owner, President
Rochester Hills Collision Inc
1750 Livernois
Rochester, Michigan 48306
(313) 652-7883

Matt Fairbanks (P)
Body Shop Manager
Snethkamp Chrysler Jeep-Eagle Inc
11600 Telegraph Rd
Redford Township, MI
(313) 255-2700

Chris Buglione (D, U)
Manager
All Pro Collision Shop
15351 Gratiot Ave
Detroit, Michigan 48205
(313) 777-6000

Bill Spaulding (P)
Body Shop Manager
Grohs Frank Chevrolet Inc
7120 Dexter Ann Arbor Rd
Dexter, Michigan 48130
(313) 426-4677

Mark Gillman (D, P, U)
Body Shop Manager
Dusseau Bob Inc
31625 Grand River Ave
Farmington, Michigan 48336
(313) 474-3170

Steve Gurriero (D, P)
Manager
Saks Bob Toyota Inc
35300 Grand River Ave
Farmington, Michigan 48335
(313) 478-0500

Al Perkins
Body Shop Manager
Holzer Tom Ford Inc
39300 W Ten Mile
Farmington Hills, Michigan 48335
(313) 474-1234

Scott Lewis (D, P, U)
Manager
Gage Oldsmobile Inc
21710 Woodward Ave
Ferndale, Michigan 48220
(313) 399-3200

Dan O'Leary (D, P)
Body Shop Manager
Harrell Chevrolet Olds Inc
26900 Telegraph
Flat Rock, Michigan 48134
(313) 782-2421

Mark Bacon (D, P, U)
Body Shop Manager
Albert Chevrolet Inc
G 5100 Clio Rd
Flint, Michigan 48504
(313) 785-4011

Joe Cookingham (D, P)
Body Shop Manager
Delehanty Pontiac Co
1510 E Pierson Rd
Flushing, Michigan 48433
(313) 659-5687

Gary Redford
Shop Manager
Bennett Al Ford Sls of Flint
5470 Ali Dr
Grand Blanc, Michigan 48439
(313) 695-3000

John McCullough (D, U)
Body Shop Manager
Milnes Chev-Olds-Pontiac
1900 S Van Dyke
Imlay City, Michigan 48444
(313) 724-0561

APPENDIX H: VBT Student Survey

VEHICLE BODY TECHNOLOGY STUDENT SURVEY SSN#_____

1. What was your primary reason for taking vehicle body technology (VBT) courses at OCC? *(Let the respondent answer and then check all that apply.)*

_____ To obtain a degree or certificate.
_____ To complete courses necessary for transfer to another college.
_____ To prepare for a new career.
_____ To improve your knowledge, technical skill or competency for your job.
_____ To comply with your employer's requirements.
_____ To increase your chances for a raise and/or promotion.
_____ For personal development.
_____ Other._____

2. What is your current employment situation?

1 _____ Employed full-time.
2 _____ Employed part-time.
3 _____ Unemployed. *Not employed but actively seeking employment (Go to question 5)*
4 _____ Not employed and not seeking employment, *(because of choice.) (Go to question 5)*

3. What is your current occupation/job title?

_____

4. Is your current employment related to the coursework you have taken at OCC in vehicle body technology?

1 _____ Yes
0 _____ No

5. How do you plan to use the knowledge and skills gained in your vehicle body technology courses at OCC, in the future? (Read responses and check all that apply)

1 _____ To work as an Auto Body Technician.
2 _____ To start your own auto body repair business.
3 _____ Car restoration for profit.
4 _____ Car restoration for hobby.
5 _____ To repair personal vehicles.
6 _____ Other. _____

_____

6. Is/was vehicle body technology your major field of study at OCC?

1 _____ Yes. (Skip to Question 8)
0 _____ No.

7. What is/was your major field of study? _____

APPENDIX I: Employer Narrative Responses

VEHICLE BODY TECHNOLOGY NEEDS ASSESSMENT
EMPLOYERS SURVEY: NARRATIVE RESPONSES

4. What is the primary reason for hiring these employees?
4c. Other Reasons.

109 Increase in volume.
130 Going to team concept - Team Leader, Mid Level Technician, and Apprentice.
210 Need Porter, additional employee, trainee, and to wash cars.

5. What is the minimum educational qualification required by your company for entry level personnel in auto body repair?
5f. Other education or degree not listed.

101 Experience and certified with the state.
105 Don't need any experience. Train our own people.
109 Experienced and state certified.
111 Five year experience and one year with foreign cars.
122 Experience.
127 Experience.
130 Experience.
201 One year vocational school.
207 Must be certified.
210 Have to be state certified.
213 Proof of five years experience or training.
214 With experience, technical school, or work.
217 Only hire experience.
218 Background and skills.
220 Education from Washtenaw Community College is usually impressive.

7. What professional certification and licensing do you require?
7d. Other certification or licensing.

103 I-CAR certified.
105 I-CAR certified.
109 I-CAR certified.
110 I-CAR certified.
114 I-CAR certified.
115 I-CAR or Mo-Tech certified.
120 I-CAR certified.
123 I-CAR certified.
127 I-CAR certified.
129 I-CAR certified.
130 I-CAR certified.
202 I-CAR certified.

130 Desire to work, able to work with people, ability to communicate, and loyalty to employer.
131 Ability, quality of workmanship, and dependability.
201 Look for self-confidence and a willingness to learn.
202 Attitude, and ability and willingness to learn.
203 Good at doing the job, dependability, and no drinking.
204 Neat appearance and not a hot-head.
205 Conscientious, and a team worker.
206 Ability to do the job.
207 Background and qualifications.
208 Their attitude, the way they talk, and their willingness to adapt to our way of doing things.
209 Don't look at one single quality. Look at the whole picture.
210 Attitude and work ethic.
211 Attitude.
212 Hire by qualifications, recommendations, and not by looks.
213 To have customer focus (see a need to satisfy the customer).
214 What training and experience they have had.
215 Attitude and the desire to do the work.
216 Quality of work.
217 The length of previous employment. Has to have worked at one place for at least four years.
218 Ability.
219 Their experience, appearance, and professionalism.
220 A willingness to learn and to work with others.

11. What kind of recruiting problems do you encounter?

101 Absenteeism, and contraband drugs.
102 Too many problems to define in a few minutes.
104 Job wanderers.
105 Need people who want to work and not just collect a paycheck.
108 Not a lot of good, young, and new people.
109 Sometimes receive six good applicants and sometimes 0.
110 Lack of experience.
111 No experience. Five out of 10 applicants are acceptable.
112 No experience and trouble shooting skills.
114 Not qualified.
115 Not enough experience.
116 Not qualified.
117 Slow learners and not able to understand instructions.
120 Image of the industry is poor - grease monkey scenario is still prevalent. As a result,

VEHICLE BODY TECHNOLOGY NEEDS ASSESSMENT
EMPLOYERS SURVEY: NARRATIVE RESPONSES

118 On the job training and a willingness to learn.
119 A good training background in a shop. Try to start as a Porter to get an idea of how a shop operates.
120 Co-op and book training through schools or vo-techs.
121 Attend a technical school to get basic knowledge.
123 Schooling, and hands on experience.
124 Taking classes in body repair and to get all the knowledge available.
125 Attend school.
126 Work part-time while attending school prior to looking for full-time employment.
128 On the job experience.
129 Willing to work, listen, and get along with others.
130 Work in trade while attending school to gain experience, and it shows an interest and ambition.
131 They could have good paint, and automobile knowledge. The rest can be taught in the shop.
201 They need body shop experience as a paint help, bumper assistant, or apprentice. Should be paid by hour rather than job because new people are slow and get discouraged if paid by job.
202 Need experience.
203 Work as a Painter or Body Man's helper.
204 Get experience in an independent shop then try to move up to a dealership.
205 Get an education.
206 Get experience.
207 Shop experience by working as an assistant or helper.
208 Having an idea of basics of bump and paint operations. Understand operations of dealership, how people are paid and understand they work to satisfy the customer.
209 Find that most men are unfamiliar with products they use (Bondos, paint materials, etc.). They should have knowledge of products used in shop.
210 Look at schooling, training, and experience.
211 Need schooling and hands on training.
212 Have more on the job training.
213 Need to be schooled and skill educated for the car technology of today and tomorrow. Need to have book learning to back up skill knowledge.
214 They could have a two year training course and if a man had I-CAR certification it would impress me.
215 Need prior work experience.
216 Take courses and get familiar with the work/materials.
217 Have own tools and get experience.
218 Go to a small shop first to get experience.
219 More hands on experience.
220 Have more schooling and on the job experience.

VEHICLE BODY TECHNOLOGY NEEDS ASSESSMENT
EMPLOYERS SURVEY: NARRATIVE RESPONSES

111 Work in a small shop, then a larger shop, a dealership, and then a foreign car repair shop. Pay is comensurate with the size of the shop.

112 From Parts Runner to Body Man, to Parts Company Rep., to manager/owner of company.

113 Begin as a Body Man. Quality and speed of work enables men to make more money as there are no titles.

114 Advance through making more money as they become more skilled.

115 Advancement comes in the form of making more money, stability of employment, and being valuable to employer as skills and knowledge advance.

116 From Body Man's Helper to Body Repair Technician to Full Body Man ($50-70,000/yr).

117 Go from Helper to a Full Body Man or Painter.

118 A Full Body Man is advancement. More money and job security are forms of advancement.

119 Become a Body Man, Frame Man, and Painter. Salary goes up as skills advance.

120 Apprentice to Journey Man. Work to be a Team Leader, Shop Foreman, go into insurance work or shop management.

121 Technician, manager, and owner.

122 Body Man, Painter, manager, and owner.

123 From Apprentice to Body Man, to Painter, to Frame Man.

124 Body Man, Painter to manager of department.

125 Body Men make more money as they get better and quicker. If they are good they can make a lot of money.

126 From Body man to Body Repair Manager, to Body Shop Manager, to owner.

127 Income expands as technicians become better and faster. Advancement is in the form of financial awards.

128 Don't see much future in it. Insurance companies have payment rates so low that is it difficult to make money in the business.

129 Go to Repairman, Painter, into management position in dealership or body shop. Go into insurance where salary is less but the health and retirement benefits are great or into a high volume shop where a person can make up to $100,000/yr.

130 Can go from a porter to manager - depending on ambition, quality of skills, and the ability to communicate.

131 Can work up the rank as - worker, leader, manager, and owner.

201 The highest paid position is a #1 Painter. A #1 Painter receives $80-100,000/yr.

202 Porter, Trimmer, Paintman, Body Man, Estimator, manager, and insurance work. Can go into the paint industry to represent a paint company or into the parts industry to represent a parts company.

203 If talented and with hard work, monetary advancement rather than titles are the form of advancement.

204 Body Man, manager, and Estimator.

205 From Helper to Body Man or Painter, to a general manager.

206 Body Man, Paint Man, manager, and insurance adjuster.

123 I-CAR certification.
124 Paint Vendor classes, Refinishing classes and updates on Mitchell Manual time.
127 I-CAR certification and in-house safety programs.
128 I-CAR certification.
129 I-CAR that pertains to their function, and safety oriented classes.
130 I-CAR certification; internal monthly meetings to discuss new technology, innovation; and vendor classes.
131 Employees go to vendors for seminars and reps. and vendors come in to the shop.
201 Ford Motor provides some training.
202 GM schools, I-CAR, PPG Paint Clinic, and DuPont Paint School.
204 Send to GM Tech. Center for training in plastic repair, welding, frame work, and painting.
205 Oakland Tech, I-CAR certification, ASE programs, and Tech Car.
206 OSHA training for safety.
207 I-CAR certification and Chrysler supplies information but not training.
208 Some in-house classes are safety oriented, GM training and I-CAR.
210 Tint, alignment, supplemental restraint technology - from GM.
211 Ford Motor Co.
212 GM and I-CAR.
213 PPG (maker of Deltron Paints) has seminars and insurance companies are constantly having seminars.
214 I-CAR certification, licensing for frame and unibody repair from Chief or Carliner.
218 GM offers classes on new technology and models.
219 Factory provides training - GM, Chrysler, and Toyota.
220 GM provides ongoing classes in almost any subject needed.

18. Would your company consider offering internships for students in the Vehicle Body Technology program at OCC?

Paid:
105 Would take an intern but paying them would depend on the type of individual.
109 Would consider offering internships but uncertain as to whether paid or unpaid.
112 Have offered internships in the past but do not currently have enough manpower to train with a student.
127 Would have to see program and decide whether paid or unpaid.
130 Have to look at program.
202 Would have to know what is involved.
215 Would have to look at the program.
216 Currently working with Macomb Community College.
220 Would be happy to work with a student in the near future.

Unpaid.

APPENDIX J: Student Narrative Responses

VEHICLE BODY TECHNOLOGY NEEDS ASSESSMENT
STUDENT SURVEY: NARRATIVE RESPONSES

1. What was your primary reason for taking vehicle body technology (VBT) courses at OCC? Other Response.

02	To fix up my car.
03	Car restoration. To learn about new technologies and painting techniques.
05	A '55 Mercury station wagon.
09	Restoring an old car.
10	Hands on.
11	This is the first career field I want.
13	To restore my car, and a hobby.
44	To learn more about auto body.
46	Hobby.
47	Hobby.

3. What is your current occupation/job title?

02	Grounds keeper.
03	Railcar loader.
04	GM phase 2 program.
05	Meijers/deli-clerk.
06	Delivery driver.
07	Painter.
08	GM, skilled trades, electrician.
09	GM job bank - journey millwright.
10	Truck driver.
11	Restaurant bartender.
12	GM truck & coach, electrical repair, trouble shooter.
13	Truck driver.
14	Group leader; grounds keeper at OCC.
15	OCC/mechanical.
16	GM truck and bus painter.
17	Yard maintenance.
19	GM truck and bus, hourly employee.
20	Line worker.
22	Lawn maintenance.
23	GM assembler.
24	Service manager for mobile homes.
25	Pizza maker.
26	Car detailer.
27	GM truck and bus, metal finisher.
28	Body shop technician.
29	Tire warehouse sales/repair.
30	Lawn maintenance.

11	All aspects.

10. What do you or did you most like about the Vehicle Body Technology course/program?

01	I liked vehicle body painting the most.
02	Convenient location and inexpensive.
03	Instructor Harvey Eshenburg is very good. The fact that you can take a piece of junk and make a showroom vehicle out of it. The instructors are helpful, knowledgeable, and enthusiastic.
04	Overall like how it relates to work and hobby. Appreciate the way faculty helps out.
05	Hands on work in paint and refinishing.
06	Could work on my own vehicle.
07	Demonstration from outside sources.
08	Learning technique involved in painting.
09	Learned a lot and enjoyed the people I was working with.
10	Hands on painting coverage.
11	I get to work on my car and get college credits.
12	Instructors are very willing to help as in showing different ways for some processes. Hands on.
13	Able to confidently work on car. Great instructors.
14	It's free since I'm employed at OCC. It's great to have a program to keep car running and to improve on hobby.
15	The people who run in "super knowledgeable", especially parapros.
16	Brought me up to date.
17	You can work at your own pace and on your own projects. Good guidance.
18	Hands on training.
19	Hands on training.
20	Faculty was right there to answer questions.
21	Having the tools I needed there to work with.
22	The instructors were helpful, there was hands on training, and things were explained well.
23	Hands on training and teamwork with both instructors and students.
24	Staff is very helpful.
25	The amount of information was tremendous. Mr. Eshenburg was great.
26	Didn't like much but did learn a thing or two.
27	Harvey Eshenburg is a great instructor.
28	I get to work on my own vehicle.
29	The things I learned, like turning a junker into something better.
30	The sense of accomplishment of doing the work myself.

VEHICLE BODY TECHNOLOGY NEEDS ASSESSMENT
STUDENT SURVEY: NARRATIVE RESPONSES

09	Tools are outdated and worn out. Running behind in paint technology spray guns.
10	Scheduling. Two courses in program are not available in pm.
11	Just started program and everything is fine so far.
12	Only one hoist in body shop.
13	Nothing to complain about.
14	Not a parapro available. Krib man out/instructor out.
15	Dislike beginner instructor "Paul" who is not nearly as knowledgeable as "Dan".
16	Scheduling conflict with work and family.
18	Sometimes there are not enough vehicles to work on.
20	95% of equipment did not work.
24	Classes are too segmented. If your car didn't need a repair, you didn't learn that repair.
25	Toxic fumes.
26	Nothing to help me get a job in auto body work.
27	Too stingy with supplies. Paid a supply fee but couldn't get anything out of crib. Had to bring my own.
28	I don't like to ask for supplies I already paid for with my tuition.
29	Bob the tool crib manager.
31	Doing the work was tough.
32	Outdated equipment and tools.
33	Teacher per student ratio. Too many students in class.
35	Lack of access for storage of vehicles when you're working on them.
36	Equipment in some areas needs to be updated.
37	Upgrade equipment and make more available.
39	Availability of instructors.
40	I like everything about the program.
41	Tool room workers are never there.
42	Location. Auburn Hills was far.
43	Teacher doesn't give any assistance and they are not informed. Auto body class is a waste of time.
44	More tools, more parking space for cars being worked on, sand blasting room needs to get electrical hook up.
45	Tools are occasionally broken, there is poor maintenance of the shop, and the lighting should be lower.
47	Teacher didn't know as much as I think he should have.
48	More welders and sanders.
49	Some tools need to be updated.
50	Not enough space to leave the cars being worked on.
51	Staff doesn't have enough time to help you.
52	There wasn't enough formal instruction. Class could be a little more specific.

41 Improve tool room.
42 Buy cars for students to work on.
43 Get teachers that are informed.
44 Get a teacher assistant.
45 Better maintenance of the shop, put more money into it and get modern technology and tooling.
46 Clean up the air inside the lab.
47 Have an assistant teacher.
48 More tools.
49 Another paint booth.
50 More parking spaces, and more specialized classes like one just for painting.
51 There should be an introductory course to this program. There should be more tools.
52 Have the professor go over material with you first rather than it being trial and error.
54 I like it the way it is.
55 More information on different paints being used on todays cars, and how they're changing due to environmentals reasons. More tools.
56 There needs to be more faculty input into the classes and the tools and technology need to be updated.
57 Update equipment and buy paint guns.

13. Is there any other comment you would like to make about the Vehicle Body Technology program at OCC?

02 They should go into Pontiac city schools more, recruit minorities, and bring them to OCC to see the shop.
03 I'm very satisfied with this program.
04 Very satisfied.
09 Learn more about airbags and how to replace them.
10 Having lots of fun and the faculty is nice and helpful.
14 I think it's a great program with knowledgeable and helpful instructors.
15 Parapros are the best and most instructors are great.
19 Improve quantity of parking for vehicles being left for repair/restoration.
20 Faculty is superb; can't get anything better.
24 Add book instruction so it's not all lab work.
26 Too much geared for workshop of people who already knew what they were doing.
32 Good program. Very satisfied.
34 Learned a lot from the class.
37 Super program.

APPENDIX K: MESC Employment Projections

MICHIGAN
Occupational Employment Projections
1988 - 2000

Occupation Title	Employment 1988	Employment 2000	Change Level	Change Percent	Average Annual Openings Total	Growth	Replacement
ANIMAL CARETAKERS, EXCEPT FARM	2,600	2,850	250	9	70	20	50
FOREST AND CONSERVATION WORKERS	800	900	75	11	40	10	30
GARDENERS AND GROUNDSKEEPERS	23,200	26,750	3,525	15	1,130	300	830
NURSERY WORKERS	1,600	1,900	300	18	70	20	50
ALL OTHER AGRIC.,FOREST,FISH.	2,250	2,450	200	9	100	20	80
PRECISION PROD,CRAFT & REPAIR	472,350	492,650	20,300	4	15,360	1,690	13,670
BLUE COLLAR WORKER SUPERVISORS	62,850	63,600	750	1	1,860	60	1,800
MECHANICS, INSTALLERS, REPAIRERS	174,900	188,250	13,375	8	5,670	1,110	4,560
INDUSTRIAL MACHINERY MECHANICS	17,500	19,000	1,500	9	750	120	630
MAINTENANCE REPAIRERS, GEN.UTIL.	37,850	44,400	6,550	17	1,650	550	1,100
MILLWRIGHTS	8,900	8,850	-50	-1	240	0	240
VEHICLE & MOBILE EQUIP. MECHANIC	52,850	58,250	5,400	10	1,540	450	1,090
AIRCRAFT ENGINE SPECIALISTS	200	250	25	9	0	0	0
AIRCRAFT MECHANICS	1,900	2,250	375	20	50	30	20
AUTOMOTIVE BODY,RELATED REPAIRER	8,100	9,150	1,050	13	250	90	160
AUTOMOTIVE MECHANICS	26,950	29,000	2,025	8	710	170	540
BUS, TRUCK, DIESEL ENG. MECHANIC	9,100	10,100	1,000	11	280	80	200
FARM EQUIPMENT MECHANICS	1,000	1,050	25	3	20	0	20
MOBILE HEAVY EQUIPMENT MECHANICS	3,750	4,450	675	18	150	60	90
MOTORCYCLE REPAIRERS	350	300	-25	-10	10	0	10
SMALL ENGINE SPECIALISTS	1,500	1,700	225	15	70	20	50
COMMUNICATIONS EQUIP. MECHANICS	3,950	3,250	-700	-18	50	-60	110
CENTRAL OFFICE & PBX INSTAL/RPR.	1,250	1,250	0	0	40	0	40
RADIO MECHANICS	150	200	0	3	10	0	10
SIGNAL OR TRACK SWITCH MAINT.	100	50	-50	-45	0	0	0
ALL OTHER COMMUN.EQUIP.MECHANICS	2,400	1,750	-650	-27	20	-50	70
ELECTRICAL & ELECTRONIC EQ.MECH.	15,550	16,650	1,100	7	420	90	330
DATA PROCESSING EQUIP. REPAIRERS	1,250	1,750	500	40	50	40	10
ELEC.HOME ENTERTAINMENT EQ. RPR.	1,050	1,150	100	9	40	10	30
ELECTRICAL POWERLINE INSTAL/RPR.	6,100	6,000	-100	-2	120	-10	130
ELECTRONICS REPAIRERS,COMM.&IND.	1,500	1,650	150	11	60	10	50
HOME APPLI.& POWER TOOL REPAIRER	1,050	1,050	50	4	40	0	40

APPENDIX L: CIP Codes

Center for Education Statistics:
A Classification of Instructional Programs (CIP)

47.0601 Vehicle and Mobile Equipment Mechanics and Repairers, General

An instructional program that prepares individuals to maintain and repair aircraft; automobiles; diesel engines in vehicles such as buses, ships, trucks, railroad locomotives, and construction equipment; stationary diesel engines in electrical generators; and small engines in mobile equipment such as lawnmowers and rotary tillers.

47.0603 Automotive Body Repair

An instructional program that prepares individuals in automobile body and fender repair. Includes instruction in body preparation for painting and finishing.

APPENDIX M: Michigan Community College Enrollment

Michigan State Enrollement Statistics
Automotive Body Repair (CIP 47.0603)
Vehicle and Mobile Equipment Mechanics and Repairers, General (CIP 47.0601)

Source: Michigan Department of Education
Michigan Community and Junior Colleges
Enrollment Data Profile 1988-89/1989-90

Enrollment, July 1988 through June 1989

	CIP 470603
Total Enrollment	275
Total Men	254
Percent Men	92.36%
Total Women	8
Percent Women	2.91%
Unknown Gender	13
Minority Enrollment	
American Indian	3
Black	33
Asian	4
Hispanic	10
Total Minority	50
Percent Minority	18.18%

Enrollment, July 1989 through July 1990

Total Enrollment	250
Total Men	215
Percent Men	86.00%
Total Women	35
Percent Women	14.00%
Minority Enrollment	
Anerican Indian	4
Black	20
Asian	12
Hispanic	34
Total Minority	70
Percent Minority	28.00%