To the Graduate Council

I am submitting herewith a thesis written by John H. Smith entitled "Automotive Services and Related Occupations--A Curricula Development Project." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Industrial Education.

Joe Reed, Major Professor

We have read this thesis and recommend its acceptance:

Accepted for the Council:

Vice Chancellor
Graduate Studies and Research

AUTOMOTIVE SERVICES AND RELATED OCCUPATIONS--

A CURRICULA DEVELOPMENT PROJECT

A Thesis

Presented for the

Master of Science

The University of Tennessee

John H. Smith

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ABSTRACT

The purpose of this study was the development of a validated curriculum for training persons for entry level employment in the automotive services field through the use of a particular set of procedure, or steps (now called the "Tennessee Model" for curriculum development).

One rather unique feature about this curriculum development is that the project utilized automotive service instructors who were involved in the day-to-day training of future employees and who are constantly aware of the employment requirements in their local area. This was also a combined effort involving instructors from both secondary and post-secondary automotive mechanics programs.

Occupational advisory committees made up of skilled workers from labor and management in the automotive services field were used to review each step in the development and to furnish validation of the completed curriculum guide.

The major development from this project was a validated coordinated curriculum guide to provide a training program structured in such a way that trainees finding it necessary to leave the program before completion would have learned competencies in at least one or more payroll jobs that would allow them to obtain employment in the field of automotive service.

Forty-eight payroll jobs were identified for which a training need could exist across the state of Tennessee. A list of tasks or competencies performed by workers in these payroll jobs was completed and

checked on a chart which shows the inter-relationships of these tasks to the payroll jobs. An information section was developed for each payroll job. This section contains:

1. D.O.T. and U.S.O.E. taxonomy numbers.
2. A job description.
3. Job entry requirements (usual method of entry).
4. Important aptitudes and traits needed by workers in that job.
5. Institutional training level.
6. A list of related payroll jobs.
7. An outline of tasks or competencies necessary for performance proficiency.
8. Minimum performance standards for entry employment.

An additional development from the project was a list of related traits and abilities for selected payroll jobs which the occupational advisory committees rated for importance.

Excerpts from the curriculum guide are included in the appendixes of this study. The complete guide will be available from the Tennessee Research Coordinating Unit, University of Tennessee, Knoxville, Tennessee.

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CHAPTER I

INTRODUCTION

Secondary and post-secondary automotive service trades instructors in the State of Tennessee have done a great deal of work in development and selection of materials and in organization for instruction. However, there has been very little done toward the coordination and correlation of these efforts, toward the validation of the product, or articulation of secondary training with that at the post-secondary level.

Much of the developmental work has been directed toward the two major payroll jobs, that of automotive technician and auto body repairman. There is a need for identification of other occupations (specific job titles) related to automotive services occupations. Some of these related occupations may be specialties within the two major fields. Since these related occupations have not been identified, there is need for this identification and the subsequent selection and development of course content and materials to provide for training to encompass these related occupations.

The total problem really consists of six major needs as follows:

1. Identification of payroll jobs in automotive service and related occupations for which a training need exist in the State of Tennessee.
2. Development of an articulated and coordinated program at secondary and post-secondary levels, aimed at meeting

these needs, based on a validated task analysis of identified payroll jobs.

3. Selection and utilization of effective instructional materials that have been developed by individual instructors, but have not been disseminated throughout the state.
4. Selection and utilization of effective published material, including texts, workbooks, manufacturers' service manuals and informational literature.
5. Development of validated performance standards for each payroll job.
6. Dissemination and acceptance of the coordinated program of instruction.

I. RATIONALE

Some of the expected benefits to be derived from this project are as follows:

1. Much duplication of effort in the production and selection if instructional material can be avoided.
2. Instruction in skills and related knowledges will be more nearly validated in terms of employment needs.
3. Trainees can be channeled more effectively into those payroll jobs best suited to their individual skills and abilities and a greater opportunity for specialization can be provided.

4. Articulation of secondary and post-secondary training, as well as validation of previous training or work experience, can be improved through the application of performance standards for the determination of advanced standing; thus eliminating duplication of training already received.
5. Course completion and issuance of certificates or diplomas can be based on performance rather than clock hours of attendance.
6. The exchange of ideas dealing with original or unique training ideas among instructors can be accelerated and could result in an overall improvement of instruction.
7. Because of the use of local and state occupational advisory committees, the acceptance for employment of secondary and post-secondary graduates should be materially improved.

II. OBJECTIVES

The objectives to be met in approaching a solution to the stated problem are as follows:

1. To identify payroll jobs in automotive service and related occupations for which training is needed at either secondary or post-secondary levels in the State of Tennessee.
2. To identify and validate (through the use of occupational advisory committees) the skills and knowledges required

for satisfactory performance at entry level in each payroll job (task analysis).

3. To organize the skills and knowledges identified under 2 above into a curriculum plan so as to provide multiple exit points from training into employment.
4. To utilize to the fullest materials already available from business and industry, publishing companies, and instructors, rather than copy or paraphrase the content of textbooks, service manuals, or other materials available.
5. To identify performance standards required for entry employment in each payroll job identified in 1 above.
6. To select or develop instructional materials and related information required for preparing persons for entry into employment at one--or more than one--payroll job level.
7. To develop a plan for organizing shop--or laboratory--activities and related information into a logical learning plan so that essential technical information may be acquired parallel with its need in relation to skills.
8. To validate each step listed above by the use of occupational advisory committees.
9. To develop a plan for publishing, disseminating and diffusing the materials developed or selected.

III. LIMITATIONS

Due to the scope and length of time required to complete this curricula development project, this study was limited to items one, two, three, four, five, and eight as listed in the objectives.

Chapter three presents the methodology used in completing the project, including an outline of the procedures or steps which are required for the development of a curriculum guide for a given trade. An attempt was made to show that these procedures can be used in the development of a validated guide for a vocational program in the conclusions and recommendations of chapter four.

IV. DEFINITION OF TERMS

Relative to this study, the following definitions are considered necessary for the understanding of the material presented:

U.S.O.E. Instructional Codes and Payroll Job Titles published by the U.S. Office of Education for the purpose of identifying and classifying the various occupations and the payroll jobs within the occupations.

D.O.T. (Dictionary of Occupational Titles) Occupational information developed and prepared by the U.S. Employment Service primarily for use in placement, counseling, and related activities by those persons concerned with occupational information in vocational, personnel and related services and activities.

Payroll Job. Title used to designate a specific set of related job activities for the purpose of identification on a payroll.

Job Description. A listing of the specific duties or tasks performed by a worker in a specific payroll job.

Usual Method of Entry. The requirements for obtaining employment in a specific payroll job.

Important Aptitudes and Traits. Specific capacities and activities required of a worker in order to perform a job adequately.

Institutional Level. Institution where training in a specific payroll job may be obtained or where this training should be offered.

Related Payroll Job. Jobs having common (like) tasks or related duties.

Competencies Required. Specific (single) task performed by a worker in a specific payroll job.

Statement of Proficiency. Acquired abilities in traits and aptitudes.

Apprenticeship Training. Training acquired, on-the-job, by a worker under the supervision of an experienced (Journeyman) mechanic in specific payroll job.

Entry Level. The point at which a trainee may enter a specific payroll job without having had previous experience.

Secondary School. Any school or school program with grades 9 through 12.

Post-Secondary School. Any school or school program with grades above 12 or any program or school not identified as being secondary such as a manufacturers' service or sales school.

CHAPTER II

REVIEW OF LITERATURE

Since the purpose of this project was the development of a validated curriculum for training persons for entry level employment in the automotive services trades, it was necessary to review literature dealing with establishing procedures for this purpose. It was also necessary to determine to what extent existing curriculum development in the automotive services occupations had been done using the objectives proposed by this study.

One of the primary projects following these procedures was Education for Office Careers, an Articulated Curriculum Guide, produced by the Tennessee Research Coordinating Unit and directed by Mr. Gilbert Harrison, Jr. (4) This project was begun in March 1971 and was primarily concerned with the development of a procedural model for curriculum development based on identifiable tasks to be performed in a given occupation.

The objectives of this project were expanded to include objectives directly related to office occupations training. In this study, five objectives were identified. They were:

1. To develop a model for curriculum development based on identifiable tasks to be performed in validated office occupations.

2. To identify and classify realistically the existing and emerging job titles appropriate to office occupations trainees of Tennessee.
3. To determine job performance standards acceptable to the employers of Tennessee and surrounding areas.
4. To develop a curriculum that will furnish an opportunity for trainees to meet performance standards acceptable to the employers.
5. To develop a total curriculum in office occupations that will provide for articulation and continuity of training at all institutional levels.

The performance standards shown in the guide developed from the project are minimum entry level standards. They are not achievement standards set by teachers for classrooms or laboratory performances, nor do they reflect the higher performance standards required by some employers.

A considerable amount of research went into the development of the standards. This research involved extensive study and use of curriculum guides developed under contract with the U.S. Office of Education and with the reports of organizations and individuals having received U.S.O.E. grants for curriculum research or development projects. Materials developed by or under contract to the U.S. Department of Labor were also used extensively. An attempt to validate the findings in all publications relative to what exists in Tennessee was made by: (1) using local and state studies of manpower and job

performance requirements, (2) conducting scores of interviews with employers and employees throughout Tennessee, and (3) seeking the advice and counsel of an advisory committee made up of representative employers in the state.

Two rather unique features relative to the development of this guide should be noted. First, the work was done by instructors in junior high schools, secondary schools, area vocational schools, and community colleges. This is a departure from the usual procedure of such a project being developed primarily by State Department of Education, University or Commercial publishing firm staff members. It was felt that the project could be and should be done by instructors who are involved in the day-by-day training of future employees and who are constantly aware of the employment requirements in their local areas. It was felt that greater utility might result from this teacher development approach.

Secondly, the guide is based on the need for trainees to perform in certain categories of tasks at specified levels. This departs from the usual practice of writing guides based upon content by subject areas. It was the feeling of the project committee that such a format lends itself to being utilized in any framework within which the training is provided.

This office education guide contains information about 29 different office occupations. Preparation of several of the 29 occupations included will frequently prepare a trainee for jobs of a similar, but more specific nature. For instance, an adding machine operator was

not shown as one of the jobs but preparation as a general office clerk would also prepare one for an adding machine operator's job.

The 29 jobs were divided into five clusters or groups. Jobs within each cluster were, in the opinion of the project committee, listed in descending order from the highest level to the lowest level. This means that persons entering a training program designed to prepare them to meet performance standards for the highest level job in a cluster would, in most cases, be qualified to meet the requirements of the lower level jobs in ascending order. Thus, if a trainee was unable to complete a total program, there was a likelihood that he would be able to meet the qualifications for a job at one of the lower levels.

The curriculum was designed in such a way that the areas of training most nearly common to all jobs and clusters occurred as soon as possible or practical. This arrangement would make it possible for the trainee to change training objectives from one cluster to another with as little loss of time as possible.

Each of the 29 jobs has its own information section in the guide. The information sections are arranged in cluster sections. Each information section for a particular job title contains the following:

1. A general information sheet containing D.O.T. and U.S.O.E. Taxonomy numbers, job description, usual method of entry, etc.
2. A grid sheet containing 13 categories of tasks performed by most office workers, a number representing the level of performance required in each task category for the

job title represented by that section, and a number representing the level of performance for each task category for several other jobs. Thus, a comparison may be made between the primary job and some related jobs. Numbers encircled indicate a higher performance level requirement for a related job than for the primary job.

3. An outline of the units of instruction necessary for the training of an enrollee to reach the required performance level. The units are listed by task categories. An abbreviated topical outline is also given. A detailed unit of instruction with helpful suggestions is being developed to correspond with the outline in the guide.
4. Minimum performance standards in each of the task categories for the job title. The performance standards or levels are written in as specific or measurable terms as possible at this time.

One section of the guide is devoted to a listing of all suggested units of instruction for all job titles, and another section is devoted to a listing of performance standards at all levels for all task categories.

For the purpose of arriving at a suitable list of procedures for the automotive services curriculum development and to help with selecting the proper format for obtaining the necessary data, a project completed in October, 1968, by Leon P. Engleburt for the Nebraska

Research Coordinating Unit for Vocational Education, entitled Analyzing Vocational Competencies in Auto Mechanics (2) was reviewed.

The purpose of this study was to develop a model for determining the competencies required by semi-skilled and skilled workers in auto mechanics. Two limitations were recognized in the selection, (1) that the area being studied must have a high need for semi-skilled and skilled workers and (2) that the area is included in the Trades and Industries programs as specified in the Standard Terminology for instruction in local and state school systems. The most comprehensive study available for obtaining this information was the quarterly report of the Nebraska Department of Labor.

From the review of literature a list on nine (9) job titles and competencies in each job title was developed. This list of job titles and competencies was then made into an interview form.

In order to secure a listing of the social competencies needed in each job title a general social skill interview form was developed from the review of literature.

The two questionnaire forms which were developed were used to interview workers, supervisors, and management from each of the proposed job titles. A sampling for the interviews included a cross section of the different types and sizes of companies. It was apparent from the data collected that the job titles used in the interview form would need to be revised to conform more closely to those currently being used in industry.

This study found that course content should be derived from an analysis of competencies required of workers on the job, and that this analysis should follow this procedure:

1. Determine the need
   a. Locally--surveys, interested groups, and labor department area surveys.
   b. State and National--reports and surveys.
2. Develop a working list of job titles and competencies.
   a. D.O.T.
   b. Standard Terminology for instruction from U.S. Office of Education.
   c. Published materials from industry.
3. Select panel of experts from industry, workers, supervisors, and management.
4. Interview the panel of experts to critique the list of job titles and competencies.
5. Analyze the collected information to determine the general and specific job titles by the competencies performed.

A computer search by RCU on the subject of auto mechanics and curriculum development or curriculum guides or curriculum planning turned up a number of items listed as curriculum guides or course development guides, which had been done by state departments of education or groups of instructors.

These studies include A Basic Plan for the Organization and Management of Instruction in Vocational Automobile-Body Repair,

developed at the Mississippi State University Curriculum Laboratory and published in August 1967 (1). This guide was prepared to assist the instructor in planning and developing instructional materials for training high school students for employment at the advanced beginner's level in auto-body repair. This material was developed by trade instructors by grouping the major segments of a trade analysis into instructional blocks and then into basic manipulative tasks. Each block contains an outline of operations and jobs for group, subgroup, or individual performance. Related instruction outline topics are included for each instructional block. The course is designed for a two-year program with 1,080 hours of training. Instructional procedures are recommended for the trade competent teacher.

The South Carolina State Department of Education, Columbia Trade and Industrial Education Section, Clemson University, has a Curriculum Guide for Trade and Industries Automotive Mechanics Programs, which was published in 1971 (9). Prepared by the State Department of Education, this curriculum guide is for instructors and administrators to use in planning trade and industrial courses in the automotive trades cluster for secondary schools. The purpose of the course is to provide skills and knowledge for entry employment in this field. This two-year program is designed for three hours per day for a total of 540 hours per year and is open to eleventh and twelfth grades. The course includes 16 common topics for the two years. Lists of suggested reference books, available pamphlets, periodicals, 35 and 16 mm films, and catalogues are appended.

From this review of literature it would appear that, although there are many curriculum guides available, most of these were not developed through the procedures used in the development of this study. In reviewing these guides, one becomes aware of the need for the development of a task analysis and job titles as they actually exist in local industry along with performance standards and validation of the finished product by journeyman mechanics, supervisors, and management in the industry.

For identification of nationally accepted payroll job titles, description in general terms of work performed and of worker traits and characteristics, Volume I and II, Dictionary of Occupational Titles, published by the U.S. Department of Labor, 1965, (7, 8) was used.

In order to obtain the proper method and format for making the task analysis, the following publications were reviewed:

Fryklund, Verne C., Analysis Techniques for Instructors, Bruce Publishing Company, 1956. (3)

Kneeland, Natalie, Techniques of Job Analysis, University of Texas, 1964. (5)

Mager, R. F. and Beach, K. M., Developing Vocational Instruction, Palo Alto, California: Fearon Publishers, 1967. (6)

CHAPTER III

DEVELOPMENTAL PROCEDURES

In May 1971, a project for the development of curricula in automotive service and related occupations was transmitted to the Research Coordinating Unit of the University of Tennessee by Charlie M. Dunn, Assistant Commissioner of Vocational-Technical Education. This project was initiated for the purpose of testing certain procedures for the development of curricula for the automotive services occupations. The curriculum guide to be developed by these procedures was to be validated at each step by craft advisory committees across the state.

In the initial meetings composed of personnel from the state staff of Vocational-Technical Education and members of the Research Coordinating Unit staff, the methods for selection of the working committee and consultants were established.

These methods were as follows:

I. Composition of Working Committee

   A. Each Vocational Region Coordinator would nominate committee members from his region as follows:

      1. One auto mechanics instructor from the secondary level

      2. A representative of the regional office

   B. The State Coordinator, Area Vocational-Technical Schools, would nominate one auto mechanics instructor from an Area Vocational-Technical School in each region.

In addition, he would nominate one or more persons involved in curriculum development from his staff.

C. The Occupational Research Coordinating Unit would nominate a qualified person to represent the ORCU and to serve as principal investigator.

II. Consultants

A. At the state level, teacher-educators and representatives of industry would be invited to serve as consultants at appropriate times during the project.

B. Occupational advisory committees at the local level would be asked to work closely with the instructors and other personnel actively engaged in the project.

The committee members for the project were selected as described above and all agreed to serve with permission from their immediate supervisor which was granted (letters of request are exhibited in Appendix A). The members selected were as follows:

Working Committee

Secondary Instructors

Paul Street
Grundy County High School
Tracy City, Tennessee

James Anderson
McMinn County High School
Athens, Tennessee

Harold Johnson
Obion County High School
Union City, Tennessee

Post-Secondary Instructors

George Barksdale
State Area Vocational-Technical School
McKenzie, Tennessee

Richard Brakebill
State Area Vocational-Technical School
Athens, Tennessee

Bobby Lundquist
State Area Vocational-Technical School
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Project Coordinator

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408 Highland Avenue
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Mr. Max Edwards, Regional Supervisor
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Mr. Harold Gregory, Director
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Mr. Charles Hale
Curriculum Specialist
Area Vocational-Technical Schools
214 Cordell Hull Building
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Mr. James Judd
Area Vocational-Technical School
214 Cordell Hull Building
Nashville, Tennessee

Mr. James T. Woodard
Auto Body Repair Instructor
Knoxville Vocational-Technical School
Knoxville, Tennessee

Two meetings with the Project Committee were held in June of 1971, for the purpose of presenting guidelines for the project and making assignments to the working committee. At the first meeting held on June 11, 1971, copies of the proposal were distributed for study and members of the committee and consultants were invited to make suggestions for revision and improvement.

There was much discussion of the methodology, centering around payroll job identification, task analysis, occupational advisory committees and the time schedule for completing the project.

It was brought out emphatically that if the project was to accomplish its purpose, the final outcome must be based on a task analysis,

with each step in the development of the curriculum and course of study to be validated by appropriate advisory committees.

A tentative list of procedures in the development of this curricula project was distributed for study. This list was developed from a similar project for office occupations conducted by the Tennessee Research Coordinating Unit and a project of analyzing vocational competencies in auto mechanics conducted by the Nebraska Research Coordinating Unit.

After study and discussion of this list of procedures, a list of procedures or steps for the development of a curriculum was established. These steps now known as the "Tennessee Model" for curriculum development were as follows:

I. IDENTIFY PAYROLL JOBS

A. Verify by Craft Committees

II. TIE TO D.O.T. TITLES

A. Write Job Descriptions

B. Identify Job Entry REQ'S

C. List Important Aptitudes & Traits

D. Identify Institutional Level in which Training should be offered

III. IDENTIFY TASKS PERFORMED

In Each Payroll Job (Task Listings)

A. Cross-Reference on a Chart

B. Group in Content Areas

IV. MAKE A TASK ANALYSIS

Do - Must Know - Desirable To Know

V. IDENTIFY PERFORMANCE ST'DS

For Each Payroll Job

VI. MAKE A MASTER CURRICULUM GUIDE

VII. DEVELOP A COURSE OF STUDY

Skills, Related Information, & Materials

Step seven is not covered in this publication since it is to be completed after the curriculum guide has been introduced to the vocational personnel across the state.

At the second meeting held on June 22, 1971, emphasis was placed on the desirability of utilizing all available prepared materials which fitted into each phase of the project, including payroll job descriptions, course content derived from task analysis and instructional materials.

Performance or proficiency standards were discussed at some length and the consensus was that their identification and development in specific measurable terms would most likely be the most difficult portion of the project.

The form or format for reporting each phase of the project was developed and presented to the committee at this time. (This form is similar to the format used for the office occupations project) (Appendix B). This is the form in which the curriculum guide for automotive services and related occupations will appear.

At this June 22nd meeting, assignments were made for the working committee to begin work in identifying payroll job titles and for beginning the task listing as identified with each payroll job.

At this time an instrument (Appendix B) for obtaining a list of important aptitudes and traits for each payroll job title from the occupational advisory committee members was also distributed. This instrument was to be used as the initial contact with these advisory committee members to acquaint them with the project and to explain what would be expected from them. The occupational advisory committees used, were those used by the project working committee in their respective auto mechanics program (Appendix E).

On September 7, 1971, all automotive services instructors throughout the state were notified by letter (Appendix C) that a curricula for automotive services and related occupations was being developed and input would be expected from each instructor.

The working committee was called to a workshop at the State Fire Training School on October 18 - 20, 1971 (Appendix C). At this meeting, the list of tasks performed in each payroll job was completed, along with the list of payroll jobs required across the state, and each task was checked on a chart to the appropriate payroll job. These lists would be revised later to comply with recommendations from the advisory committees (Appendix D).

The tasks of writing the job descriptions, job entry requirements, important aptitudes and traits, and institutional training level was begun, and assignments made.

An explanation of the task analysis form and its use was given and each member was assigned three tasks from the brake section to complete and turn in for checking. It was pointed out that the task

analysis should be completed before the performance standards could be written.

The completed related aptitudes and traits survey forms were turned in and compilation of the results appears in a chart in the completed curriculum guide (Appendix D).

Due to the fact that each member of the project committee was working on the project in addition to performing his duties required as a full-time instructor, it was not feasible to have another meeting until April 24, 1972. At this workshop (Appendix C) it developed that a recheck on the task listings as to which tasks were performed in each payroll job was required and seven new payroll jobs in auto body work, automotive instructors, etc. were added.

Other items covered during this meeting were the proofing of job descriptions, the procedure for obtaining proficiency standards, along with new assignments on the task analysis.

At a workshop for Area Vocational-Technical School Automotive instructors, in May 1972, the proposal of the project committee was explained and the instructors were asked to help with the proficiency standards, which produced some amazing results. The material developed formed the basis for the final standards that appear in the guide. The final copy for these proficiency standards was completed at a meeting of the working committee held in August 1972 (Appendix C).

The material developed from the work up to this date was edited and compiled in final form for the curriculum guide. Copies of the completed guide were mailed to the members of the working committee

for final check in preparation for presenting to the craft advisory committee for final validation. Procedures for this validation were discussed at the next meeting of the group on February 1, 1973, and a review questionnaire form (Appendix B) was presented. It was decided that six selected auto mechanics instructors would be added to the review committees. These instructors would be selected by the three regional coordinators serving on the project committee.

At this February meeting it was decided that the second publication from the project would be the task analysis and a third publication would contain the courses of study, texts and reference book recommendations along with a list of sources of training aids. Also, the format for the study schedules (Appendix B) to carry the instructional materials was discussed and the form selected.

Each member (instructor) of the working committee returned to his school and held meetings with his occupational advisory committee to review the completed guide to complete the final validation. After this work was completed the revised curriculum guide was released to the Tennessee Research Coordinating Unit for publishing.

CHAPTER IV

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

I. SUMMARY

To summarize the curriculum guide itself, it contains information about forty-eight (48) different automotive service occupations (Appendix D). Preparation for some of these occupations may prepare a trainee for a number of other related occupations with the addition of training in specific areas. Example -- (to become a tractor mechanic, the automotive technician would need training in hydraulics.) There is also a number of specialties within the total course of automotive mechanics. The program can be structured in such a way that trainees finding it necessary to leave the program before completion would have earned competencies in some area (payroll job) that would allow them to obtain employment in the field of automotive service.

Each of the forty-eight payroll jobs has its own information section in the guide. The sections are arranged in order of their U.S.O.E. identification number. Each information section (Appendix D) for a particular job title contains the following:

1. A general information sheet containing D.O.T. and U.S.O.E. taxonomy numbers, job descriptions, usual method of entry, important aptitudes, and institutional training level.

2. A list of the related payroll jobs (indication of additional training requirements).
3. An outline of the units of instruction (tasks performed) necessary for an enrollee to reach the required performance level.
4. Minimum performance standards in each payroll job title. The performance standards are written in as specific or measurable terms as possible.

All times listed for completion of performance tests are for entry level into a job and take into consideration the pressures involved in taking tests and that the trainee is not expected to be as proficient as a journeyman mechanic. These performance tests are not meant to preclude any tests or any requirements set up by an employer nor are they to be substituted for tests and performance levels required by each unit of instruction in the course of study.

It is also intended that should any part or parts of the performance test be failed, the trainee would be expected to engage in learning activities designed to assist him in reaching the performance level desired.

A chart (Appendix D) showing a summary of the important aptitudes and traits compiled from the responses of the occupational advisory committees is included in the curriculum guide. This chart shows the relationship of importance to certain payroll jobs. It will also point out the need for including a section on environmental relationships in the training program.

This study has attempted to test a particular set of procedures or steps that can be used to secure the data needed in developing a validated, coordinated curriculum guide for a trade subject (in this case, automotive services). These procedures or steps are as follows:

I. Identifying Payroll Jobs

(Jobs available in program's service area)

A. Verify by occupational advisory committee

B. Assign most applicable D.O.T. Titles

(furnishes reference point)

II. Write Information Section

A. Job Description

B. Job Entry Requirements

C. List Important Aptitudes and Traits

D. Identify Institutional Training Level

III. Identify Tasks Performed

(Task Listings)

A. Group in Content Areas

B. Cross-Reference on a Chart

IV. Make a Task Analysis

A. Do (skills needed)

B. Know (specific related technical information)

C. Desirable to Know (nice to know-but not required)

V. Identify Performance Standards

(For each payroll job, to be written in specific measurable terms)

VI. Assemble the Master Curriculum Guide

(Should include all of the above items except the task analysis)

VII. Develop a Course of Study

A. Skills and Related Information Organized in a Logical Learning Plan

B. Materials Required to Carry the Instruction

There is the possibility that some adjustments would need to be made in the collecting of data or in the format of the guide for a different trade. However, the basic steps outlined above could remain the same.

II. CONCLUSIONS

In reviewing the literature related to this project one becomes acutely aware of the many competencies required of the skilled craftsman in the automotive services field. Vocational education should always be in the process of changing and up-dating the curriculum in order to meet these changes.

A well developed curriculum is an integral part of an effective training program. The content of this curriculum should be derived from a validated analysis of the competencies required by workers in the various payroll jobs of a particular vocational occupation.

From a review of the material developed in this project, it appears that a working committee of competent trade instructors, with a coordinator and consultants from industry, could develop an effective

curriculum for a vocational program using the procedure or steps outlined in the summary above.

III. RECOMMENDATIONS

In order to determine how well the curriculum guide developed from this project is correlated with the requirements of workers in local situations and in view of the far-reaching affects that this project could have on the educational programs throughout the state, four recommendations are made.

Those recommendations are:

1. That the curriculum guide developed from this project be placed in the hands of automotive services instructors throughout the state and utilized for at least one year.
2. That an evaluation and revision of this guide be made after this trial period in order to keep up with current developments in industry and to receive the full benefit from this project.
3. That the task analysis (publication two) and course outlines (publication three) be published and evaluated in the same manner as the curriculum guide.
4. That step seven (development of materials) of the procedures be completed following the lines of the study schedule form (Appendix B) developed by the committee on this project.

BIBLIOGRAPHY

BIBLIOGRAPHY

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APPENDIXES

APPENDIX A

Copies of the letters of request to serve on the project working committee

THE UNIVERSITY OF TENNESSEE
COLLEGE OF EDUCATION
KNOXVILLE, TENNESSEE 37916

TENNESSEE RESEARCH
COORDINATING UNIT FOR
VOCATIONAL EDUCATION
309 MOUNTCASTLE STREET
615-974-3325

Mr. Robert E. Barnett, Superintendent
State Area Vocational-Technical School
P O Box 148
Athens, Tennessee 37303

Dear Mr. Barnett:

The Division of Vocational-Technical Education and the Research Coordinating Unit at the University of Tennessee are continuing work on a model project for developing a total curriculum for Automotive Service & Related Occupations.

The project involves selected Secondary & Area Vocational-Technical School teachers. The project will be coordinated by State Supervisory and Research Coordinating Unit personnel.

Since this is the beginning of a new school year, we are requesting your assistance by permitting Mr. Richard Brakehill, a teacher in your school system, to continue participation in this project. A teacher's involvement in this project necessitates 2 - one day periods of classroom absence during the school year. In addition, the teacher would be required to participate in 2 - three day workshops--one in late October and one in February.

Teachers will be reimbursed for all expenses (travel, lodging, and meals). State employees are not allowed honorariums for this project.

If this meets with your approval, will you please notify Mr. John Smith by October 27, 1971. Mr. Smith may be contacted by phone at 745-6940, or by mail at Box 148, Athens, Tennessee, 37303.

Your cooperation in helping us to bring this project to a successful completion will be deeply appreciated.

Sincerely,

John H. Smith, Assistant
Superintendent, Athens Area
Vocational-Technical School

Gary R. Bice

Dr. Garry R. Bice
RCU Director

cc: Mr. Richard Brakehill

THE UNIVERSITY OF TENNESSEE
COLLEGE OF EDUCATION
KNOXVILLE, TENNESSEE 37916

TENNESSEE RESEARCH
COORDINATING UNIT FOR
VOCATIONAL EDUCATION
909 MOUNTCASTLE STREET
615-974-3338

Mr. Bruce Jordan, Superintendent
McMinn County Schools
Athens, Tennessee 37303

Dear Mr. Jordan:

The Division of Vocational-Technical Education and the Research Coordinating Unit at the University of Tennessee are continuing work on a model project for developing a total curriculum for Automotive Service & Related Occupations.

The project involves selected Secondary & Area Vocational-Technical School teachers. The project will be coordinated by State Supervisory and Research Coordinating Unit personnel.

Since this is the beginning of a new school year, we are requesting your assistance by permitting Mr. James Anderson, a teacher in your school system, to continue participation in this project. A teacher's involvement in this project necessitates 2 - one day periods of classroom absence during the school year. In addition, the teacher would be required to participate in 2 - three day workshops--one in late October and one in February.

Teachers will be reimbursed for all expenses (travel, lodging, and meals). State employees are not allowed honorariums for this project.

If this meets with your approval, will you please notify Mr. John Smith by October 27, 1971. Mr. Smith may be contacted by phone at 745-6940, or by mail at Box 148, Athens, Tennessee, 37303.

Your cooperation in helping us to bring this project to a successful completion will be deeply appreciated.

Sincerely,

John H. Smith, Assistant
Superintendent, Athens Area
Vocational-Technical School

Gary R. Bice

Dr. Garry R. Bice
RCU Director

cc: Mr. James Anderson

THE UNIVERSITY OF TENNESSEE
COLLEGE OF EDUCATION
KNOXVILLE, TENNESSEE 37916

TENNESSEE RESEARCH
COORDINATING UNIT FOR
VOCATIONAL EDUCATION
900 MOUNTCASTLE STREET
615-974-3336

Mr. George Blakemore, Superintendent
Ohion County Schools
Union City, Tennessee 37261

Dear Mr. Blakemore:

The Division of Vocational-Technical Education and the Research Coordinating Unit at the University of Tennessee are continuing work on a model project for developing a total curriculum for Automotive Service & Related Occupations.

The project involves selected Secondary & Area Vocational-Technical School teachers. The project will be coordinated by State Supervisory and Research Coordinating Unit personnel.

Since this is the beginning of a new school year, we are requesting your assistance by permitting Mr. Harold Johnson, a teacher in your school system, to continue participation in this project. A teacher's involvement in this project necessitates 2 - one day periods of classroom absence during the school year. In addition, the teacher would be required to participate in 2 - three day workshops--one in late October and one in February.

Teachers will be reimbursed for all expenses (travel, lodging, and meals). State employees are not allowed honorariums for this project.

If this meets with your approval, will you please notify Mr. John Smith by October 27, 1971. Mr. Smith may be contacted by phone at 745-6940, or by mail at Box 148, Athens, Tennessee, 37303.

Your cooperation in helping us to bring this project to a successful completion will be deeply appreciated.

Sincerely,

John H. Smith, Assistant
Superintendent, Athens Area
Vocational-Technical School

Gary R. Bice

Dr. Garry R. Bice
RCU Director

cc: Mr. Harold Johnson

THE UNIVERSITY OF TENNESSEE
COLLEGE OF EDUCATION
KNOXVILLE, TENNESSEE 37916

TENNESSEE RESEARCH
COORDINATING UNIT FOR
VOCATIONAL EDUCATION
909 MOUNTCASTLE STREET
615-974-3338

Mr. Cordell Wilburn, Superintendent
State Area Vocational-Technical School
Highway 25 East
Hartsville, Tennessee 37074

Dear Mr. Wilburn:

The Division of Vocational-Technical Education and the Research Coordinating Unit at the University of Tennessee are continuing work on a model project for developing a total curriculum for Automotive Service & Related Occupations.

The project involves selected Secondary & Area Vocational-Technical School teachers. The project will be coordinated by State Supervisory and Research Coordinating Unit personnel.

Since this is the beginning of a new school year, we are requesting your assistance by permitting Mr. Bobby Lundquist, a teacher in your school system, to continue participation in this project. A teacher's involvement in this project necessitates 2 - one day periods of classroom absence during the school year. In addition, the teacher would be required to participate in 2 - three day workshops--one in late October and one in February.

Teachers will be reimbursed for all expenses (travel, lodging, and meals). State employees are not allowed honorariums for this project.

If this meets with your approval, will you please notify Mr. John Smith by October 27, 1971. Mr. Smith may be contacted by phone at 745-6940, or by mail at Box 148, Athens, Tennessee, 37303.

Your cooperation in helping us to bring this project to a successful completion will be deeply appreciated.

Sincerely,

John H. Smith, Assistant
Superintendent, Athens Area
Vocational-Technical School

Garry R. Bice

Dr. Garry R. Bice
RCU Director

cc: Mr. Bobby Lundquist

THE UNIVERSITY OF TENNESSEE
COLLEGE OF EDUCATION
KNOXVILLE, TENNESSEE 37916

TENNESSEE RESEARCH
COORDINATING UNIT FOR
VOCATIONAL EDUCATION
809 MOUNT CASTLE STREET
615-974-2338

Mr. Guy R. Kirk, Superintendent
Area Vocational-Technical School
Highway 22 North
McKenzie, Tennessee 38201

Dear Mr. Kirk:

The Division of Vocational-Technical Education and the Research Coordinating Unit at the University of Tennessee are continuing work on a model project for developing a total curriculum for Automotive Service & Related Occupations.

The project involves selected Secondary & Area Vocational-Technical School teachers. The project will be coordinated by State Supervisory and Research Coordinating Unit personnel.

Since this is the beginning of a new school year, we are requesting your assistance by permitting Mr. George Barksdale, a teacher in your school system, to continue participation in this project. A teacher's involvement in this project necessitates 2 - one day periods of classroom absence during the school year. In addition, the teacher would be required to participate in 2 - three day workshops--one in late October and one in February.

Teachers will be reimbursed for all expenses (travel, lodging, and meals). State employees are not allowed honorariums for this project.

If this meets with your approval, will you please notify Mr. John Smith by October 27, 1971. Mr. Smith may be contacted by phone at 745-6940, or by mail at Box 148, Athens, Tennessee, 37303.

Your cooperation in helping us to bring this project to a successful completion will be deeply appreciated.

Sincerely,

John H. Smith, Assistant
Superintendent, Athens Area
Vocational-Technical School

Gary R. Bice

Dr. Garry R. Bice
RCU Director

cc: Mr.George Barksdale

THE UNIVERSITY OF TENNESSEE
COLLEGE OF EDUCATION
KNOXVILLE, TENNESSEE 37916

TENNESSEE RESEARCH
COORDINATING UNIT FOR
VOCATIONAL EDUCATION
909 MOUNTCASTLE STREET
615-974-3338

Mr. William Hargis, Superintendent
Grundy County Schools
Altamont, Tennessee 37301

Dear Mr. Hargis:

The Division of Vocational-Technical Education and the Research Coordinating Unit at the University of Tennessee are continuing work on a model project for developing a total curriculum for Automotive Service & Related Occupations.

The project involves selected Secondary and Area Vocational-Technical School teachers. The project will be coordinated by State Supervisory and Research Coordinating Unit personnel.

Since this is the beginning of a new school year, we are requesting your assistance by permitting Mr. Paul Street, a teacher in your school system, to continue participation in this project. A teacher's involvement in this project necessitates 2 - one day periods of classroom absence during the school year. In addition, the teacher would be required to participate in 2 - three day workshops--one in late October and one in February.

Teachers will be reimbursed for all expenses (travel, lodging, and meals). State employees are not allowed honorariums for this project.

If this meets with your approval, will you please notify Mr. John Smith by October 27, 1971. Mr. Smith may be contacted by phone at 745-6940, or by mail at Box 148, Athens, Tennessee, 37303.

Your cooperation in helping us to bring this project to a successful completion will be deeply appreciated.

Sincerely,

John H. Smith, Assistant
Superintendent, Athens Area
Vocational-Technical School

Garry R. Bice

Dr. Garry R. Bice
RCU Director

cc: Mr. Paul Street

APPENDIX B

Copies of the format and forms used to collect the data in this project

JOB TITLE

D.O.T._____ U.S.O.E._____

JOB DESCRIPTION:

USUAL METHOD OF ENTRY (JOB ENTRY):

IMPORTANT APTITUDES AND TRAITS:

Trainee characteristics

Example: coordination
perception
desire to do detail
use of grammar

INSTITUTIONAL LEVEL:

GENERAL RELATED ATTITUDES & ABILITIES

Person answering questions: Owner_____Manager_____Mechanic_____
(check one)

Commonly used Job Title_____

Corresponding Job Title from D.O.T._____

Instructions: In the column at the right hand side, please rate each skill according to the following scale:

1. Not needed
2. Little need
3. Average need
4. High need

---

1. Ability to read and understand written instructions. _____
2. Can communicate well with fellow employees _____, employer _____, customer _____.
3. Must have mechanical insight and manipulative dexterity._____
4. Neat, clean, attractive appearance. _____
5. Expected to arrive for work and meetings on time. _____
6. Expected to refer to people by their proper name. _____
7. Expected to know and use correct name for all tools. _____
8. Must have good math background. _____
9. Able to handle personal problems without their interference with his job. _____
10. Must be honest and have a positive attitude toward work. _____
11. Must be safety conscious and follow safety procedures. _____
12. _____
13. _____

14. _____

15. _____

REVIEW COMMITTEE QUESTIONNAIRE

DATE_____

Name of Reviewer_____ Position _____

Occupational Job Title_____

Firm_____ Address_____

Dealership_____ Independent_____

Number of Persons Employed _____

Would you or your firm be interested in present employees receiving additional training? _____

Indicate areas of training desired:

_____ _____

_____ _____

_____ _____

CURRICULUM GUIDE REVIEW

Additional Payroll Jobs Needed:

_____

_____

_____

Do competencies for listed payroll jobs meet stated need?_____
(List needed additions per payroll job on separate sheets)

Would this guide help you in selecting new employees?_____

Would the guide help you in evaluating previous training and experience of employees?_____

Would the guide serve in determining up-grading needs for employees?
_____

Additional Comments: _____

_____

_____

TASK ANALYSIS SHEET

NAME OF TASK _____ Page of Pages

Must Do (Steps)	Must Know (Specific Related	Desirable to Know

NO._____

AUTO MECHANICS - (LEARNING SCHEDULE)

AREA:

SUBJECT:

STUDY ASSIGNMENT:

SHOP ASSIGNMENT:

APPENDIX C

Copies of minutes of meetings held during the course of the project development

The University of Tennessee
College of Education
Knoxville, Tennessee 37916

Tennessee Research
Coordinating Unit for
Vocational Education
909 Mountcastle Street

615-974-3338

TO: All Auto Mechanics Instructors

FROM: John H. Smith, Principal Investigator

SUBJECT: Research and Development of Curricula in Automotive Service and Related Occupations

DATE: September 7, 1971

The State Department of Vocational-Technical Education has requested that a project for the research and/or development of curricula in Automotive Service and related occupations be activated through the Research Coordinating Unit for Vocational-Technical Education. This project has been approved and the committee has been selected to work on the project. Attached sheet will name the committee members.

The committee is actively involved in this project and will be asking for your assistance from time to time. You will be kept up-to-date on the progress of the project as we proceed. Any material which you have that would help in this work should be referred to the committee member nearest you.

At the present, the committee has met twice. The payroll jobs to be investigated have been selected and each member is working on identifying the tasks performed in each job.

Each phase of the job will be validated by you as instructors, mechanics, service managers, shop owners, and by Craft Advisory Committee members of the various auto mechanics programs across the state.

If you have any questions and/or suggestions, please feel free to make your wishes known. Please direct your inquiry to anyone of the committee members or directly to me, (John H. Smith) at the Athens Area Vocational-Technical School, Post Office Box 848, Athens, Tennessee 37303.

COMMITTEE MEMBERS AS APPOINTED

WORKING COMMITTEE:

1. Secondary Instructors

   James Anderson, McMinn High School
   Harold Johnson, Central High, Obion County
   Paul Street, Grundy County High School

2. Post-secondary Instructors

   George Barksdale, McKenzie AVTS
   Richard Brakebill, Athens AVTS
   Bobby Lundquist, Hartsville AVTS

CONSULTANTS:

Joe Casteel, West Tennessee Regional Office
Ed Kobeck, Middle Tennessee Regional Office
Max Edwards, East Tennessee Regional Office

INVESTIGATORS:

John H. Smith, Athens AVTS, Principal Investigator
James Judd, State Department, Associate Investigator
Bob Coker, RCU

The University of Tennessee
College of Education
Knoxville, Tennessee 37916

Tennessee Research
Coordinating Unit for
Vocational Education
909 Mountcastle Street

615-974-3338

TO: Gary Bice, Director, Tennessee RCU

FROM: John H. Smith

SUBJECT: Automotive Occupations, Curriculum Development Committee Workshop, October 18, 19, and 20, 1971. State Fire Service Training School, Murfreesboro.

Personnel present and participating in this meeting are listed on the attached sheet.

After the invocation, a list of things to be done during the workshop were discussed along with any problems and questions that had materialized from the work that the committee had done thus far.

The committee was divided into groups of three and assigned a specific group of content areas to begin work on completing and checking the task listings.

Large charts were passed out for listing all tasks performed in the automotive industries. The chart provided for listing payroll jobs found to be needed with a block for identifying tasks performed in each payroll job. The groups then proceeded to the task at hand. Before adjourning for the day, the committee members were asked to turn in all copies of the related aptitudes and traits survey that had been returned to them.

On Tuesday, October 19, at 8:30 a.m. work continued on identification of tasks and the different groups were asked to check the others work.

After completion of the task listings, work was begun on listing the payroll job titles and checking the tasks performed in each. At this time, all the payroll jobs that could be identified in the D.O.T. were added back to the list. This was done to eliminate the possibility of

overlooking any area where training might need to be offered and to insure that the scope of the project was complete. The principle investigator was given the responsibility for the Auto Body man and painter sections as the working committee did not feel that they had expertise in these areas.

Before adjourning for the day, a discussion was held as to the form the Office Occupations project was taking and to the use of the same format. This format was adopted for our use and each instructor was assigned six payroll jobs to write the job description, usual method of entry, important aptitudes and traits, and the institutional level at which training could be offered. Each instructor was asked to have one payroll job written up for the morning session for the following day.

On Wednesday, October 20, at 8:30 a.m., work continued on job descriptions with a discussion of questions and checking of the one completed description. Each committee member was instructed to have all assigned work turned in by November 15th.

An explanation of the job or task analysis form and its use was given. Each member was assigned part of the Brake System to complete and turn in by November 15th. At which time, he would get a new assignment. The total job analysis was expected to be finished by the middle of January.

The committee worked hard on the project and was quite enthusiastic about the whole project. The writer was well pleased with the amount of work accomplished and will forward copies of the completed work as soon as available.

The meeting adjouned at twelve noon.

PARTICIPANTS IN WORKSHOP ON AUTOMOTIVE SERVICE AND RELATED OCCUPATIONS CURRICULA DEVELOPMENT

State Fire Service Training School
Murfreesboro, Tennessee
October 18-20, 1971

Working Committee Members

Secondary School Instructors

Harold Johnson, Obion County Vocational Supervisor
Paul Street, Grundy County High School
James Anderson, McMinn County High School

Post-Secondary Instructors

George Barksdale, McKenzie Area Vocational-Technical School
Richard Brakebill, Athens Area Vocational-Technical School
Bobby Lundquist, Hartsville Area Vocational-Technical School

Consultants

Ed Kobeck, Middle Tennessee Regional Office
Joe Casteel, West Tennessee Regional Office
Max Edwards, East Tennessee Regional Office
Bob Coker, RCU

Investigators

John Smith, Athens Area Vocational-Technical School
Principal Investigator

James Judd, Supervisor, Area Vocational-Technical Schools
Associate Investigator

The University of Tennessee
College of Education
Knoxville, Tennessee 37916

Tennessee Research
Coordinating Unit for
Vocational Education
909 Mountcastle Street

615-974-3338

TO: Dr. Gary Bice, Director of Tennessee RCU

FROM: John H. Smith

SUBJECT: Automotive Occupation Curriculum Development Committee Workshop, August 7, 8, and 9, 1972, Fire Training School, Murfreesboro, Tennessee

DATE: August 21, 1972

Personnel present and participating in this meeting were:

Paul Street, Grundy County High School
James Anderson, McMinn County High School
Harold Johnson, Obion County Board of Education
George Barksdale, McKenzie SAVTS
Richard Brakebill, Athens SAVTS
Bobby Lundquist, Lundquist Motors, Portland, TN
Joe Casteel, West Tennessee Regional Office
John Smith, Principle Investigator
Max Edwards, East Tennessee Regional Office

The first meeting began at 1 p.m. on Monday, August 7. The things to be done during the workshop were discussed along with problems and questions that materialized from the work that had been done thus far, along with what directions we would take to accomplish our objectives.

The committee divided into groups to begin work on the performance standards. Work proceeded throughout the day and through Wednesday noon working toward finishing the standards. These have been typed and copies will be mailed shortly.

Additional meetings to complete the project have not been arranged pending discussion with Dr. Bice.

The University of Tennessee
College of Education
Knoxville, Tennessee 37916

Tennessee Research
Coordinating Unit for
Vocational Education
909 Mountcastle Street

615-974-3338

MEMORANDUM

TO: Dr. Gary Bice, Director of Tennessee RCU

FROM: John H. Smith

SUBJECT: Automotive Occupation Curriculum Development Committee Workshop, April 24, 25, 26, 27, 1972 Montgomery Bell State Park

DATE: May 31, 1972

Personnel present and participating in this meeting were:

James Anderson, McMinn County High School
Harold Johnson, Obion County Board of Education
Warren Barksdale, McKenzie SAVTS
Richard Brakebill, Athens SAVTS
Bobby Lundquist, Hartsville SAVTS
Joe Casteel, West Tennessee Regional Office
Ed Kobeck, Middle Tennessee Regional Office
Bob Coker, Research Coordinating Unit
James Judd, State Department SAVTS
John Smith, Principle Investigator

The first meeting began at 9 a.m. on Monday, April 24. The things to be done during the workshop were discussed along with problems and questions that materialized from the work that had been done thus far, along with what directions we would take to accomplish our objectives.

The committee divided into groups to begin work on the task listings. Work processed throughout the day and through Wednesday working on checking task listings against payroll jobs as to which tasks were performed by each job. Seven new payroll jobs were added in the area of body work, instructors, etc.

Thursday was spent in proofing the job descriptions, method of entry, aptitudes and traits, and instructional level of training. The committee is in agreement at this time that the work to this point is correct.

A brief discussion was held on how to write proficiency standards. It was decided that it would help our work if at the Area School Teacher's Meeting in May, they could write proficiency standards and let us check them. (This was done. They have not been checked; this will be done at our next meeting.)

Each member of the working committee was assigned two sections of the job analysis to finish and have turned in by the end of May. New assignments will be made at that time in order to try to finish by July 1. Each member of the group felt that we had accomplished a great deal during this meeting and I would like to commend the group for their dedication to this project. This is an excellent group to work with.

Material from the work done will be available as soon as the retyping and editing is done. The meeting adjourned late Thursday anticipating another meeting as soon as can be arranged after the job analysis is finished.

The University of Tennessee
College of Education
Knoxville, Tennessee 37916

Tennessee Research
Coordinating Unit
Vocational Education
909 Mountcastle Street

615-974-3338

TO: James Anderson, McMinn High
Harold Johnson, Obion County Board of Education
Paul Street, Grundy County High
George Barksdale, McKenzie AVTS
Richard Brakebill, Athens AVTS
Joe Casteel, West Tennessee Regional Office
Ed Kobeck, Middle Tennessee Regional Office
Max Edwards, East Tennessee Regional Office
James Judd, State Department AVTS
Gary Bice, Research Coordinating Unit

FROM: John H. Smith

SUBJECT: Automobile Service Occupations Curricula Workshop, Fire Training School, Murfreesboro, Tennessee

The completed Curriculum Guide is ready and a copy is being mailed to you under separate cover. You should review this material and bring it to the next workshop along with any questions and/or suggestions you may have regarding the material.

Our next meeting will be on January 11-12, 1973 at the Fire Training School, Murfreesboro, Tennessee. We will plan to start at 1 p.m. on the 11th and finish by noon on the 12th. Please make your own reservations.

Bring any completed assignments with you. We will plan to discuss the guide in reference to validation by craft advisory committees and to make plans for completing the project at the earliest possible date.

If you have any questions, or if you will be unable to attend, please notify me as soon as possible.

The University of Tennessee
College of Education
Knoxville, Tennessee 37916

Tennessee Research
Coordinating Unit for
Vocational Education
909 Mountcastle Street

615-974-3338

MEMORANDUM

TO: Dr. Gary Bice, Director of Tennessee RCU

FROM: John H. Smith

SUBJECT: Automotive Occupation Curriculum Development Committee Workshop, February 1 and 2, 1973, Fire Training School, Murfreesboro, Tennessee

DATE: February 20, 1973

Personnel present and participating in this meeting were:

Ed Kobeck, Middle Tennessee Regional Office
Harold Johnson, Obion County Board of Education
George Barksdale, McKenzie SAVTS
Richard Brakebill, Athens SAVTS
Joe Casteel, West Tennessee Regional Office
Lynn Bevins, Curriculum Lab
Randell Norris, State Staff, SAVTS
John Smith, Principle Investigator

The first meeting began at 1 p.m. on Thursday, February 1, 1973. The things to be done during the workshop were discussed along with problems and questions that materialized from the work that had been done thus far, along with what directions we would take to accomplish our objectives.

The group reviewed the curriculum guide in detail. It was decided that the guide was complete as it stood with two or three minor additions. These additions include a "definition of terms" sheet and two small additions to the performance tests. Mr. Lynn Bevins, from the Curriculum Lab, met with us on the following day and made some sugges-

tions about printing. He indicated that with Mr. Harrison's approval the curriculum lab would do the printing.

It was decided that the three regional coordinators would take the completed guide to six (6) selected instructors in each region for review. It was felt that this would help us with the explanation when we are ready for dissemination.

On Friday, we worked on the second publication which will be the task analysis. This analysis is 90 percent complete and new assignments were made with a target date for completing set as February 23, 1973.

The next meeting was tentatively set for March 14-16 to review the analysis and to work out the study schedules to carry the instructions material. The target date for having material ready for state wide distribution to teachers was set for June 1973.

APPENDIX D

Samples of the completed guide and charts

developed from the project

PAYROLL JOB: NEW CAR GET-READY MAN

D.O.T. 806.381-034 U.S.O.E. 17.03

JOB DESCRIPTION:

The new car get-ready man inspects and services new automobiles on delivery to dealer and makes minor repairs or adjustments to place vehicle in saleable condition. He records discrepancies, signs acceptance slip for each vehicle inspected, inspects for loose or misaligned trim, doors, hardware, and other items, and corrects defects, using hand tools. He starts engine, activates power equipment, such as electric windows, seats, and radio to detect faulty unit or system, and observes functioning of horn, lights, directional signals, cigarette lighter, and other electrical components. He observes minor chips or scratches in paint, touches up imperfections, and also installs standard components, such as hubcaps and wiper blades, removed before shipment or during storage. He may polish car to remove preservative coating and road film accumulated during transit, may spray undercoating material onto underside of vehicle, and may wash car and vacuum interior. He tunes engine, using mechanic tools and test equipment.

USUAL METHOD OF ENTRY:

It is necessary to have completed the required amount of technical training such as offered in a secondary or post-secondary auto-mechanics course or the equivalent. Specialization is usually required through on-the-job training.

IMPORTANT APTITUDES AND TRAITS:

The new car get-ready man should be in good physical condition, have manipulative dexterity, and have mechanical aptitude. He should have knowledge of the function and operation of all systems of the vehicle in order to diagnose and troubleshoot. It is desirable to have a pleasing personality, cooperativeness, neatness in appearance, honesty, and an ability to communicate with others.

NEW CAR GET-READY MAN - (Continued)

INSTITUTIONAL LEVEL:

The basic auto course in auto mechanics may be obtained at the secondary or post-secondary level. Special courses may be offered in post-secondary education and by the auto manufacturers and their affiliates.

RELATED PAYROLL JOBS:

*Tractor Mechanic
Parts Salesman
*Service Manager
*Repair Service Salesman
Service Station Attendant
Bus Inspector
Automobile Tester (Gov't.)
Auto Air-Cond. Specialist
*Automotive Technician
Safety Lane Inspector
Mechanics Helper
Brake Specialist
Brake Adjuster
*Mechanical Maintenance Man
Auto Service Technician
Carburetor Specialist
Muffler Installer
Automatic Transmission Specialist
Radiator Man
Transmission Mechanic (Manual)
Tune-Up Specialist
Automotive Electrician
Clutch Rebuilder
Engine Mechanic
Front End & Steering Specialist
Diesel Mechanic
*Ind. Truck Mechanic
*Const. Equipment Mechanic
*Engr. Equipment Mechanic
*Logging Equipment Mechanic

*Additional training will be required for entry level into this payroll job.

COMPETENCIES REQUIRED:

Cooling System

1. Check liquid level
2. Make pressure test
3. Test radiator cap
6. Test anti-freeze
7. Install anti-freeze
8. R & R hose
9. R & R thermostat
10. R & R belts
11. R & R temperature gauge
12. R & R sending unit

Differential and Drive Line

1. Check differential liquid level
2. Troubleshoot differential

NEW CAR GET-READY MAN - (Continued)

COMPETENCIES REQUIRED:

Exhaust System
1. Troubleshoot exhaust system

Engines
1. Check and/or replace engine oil
2. Troubleshoot engine

Fuel System
1. Service air filters
2. R & R fuel pump (rocker arm type)
3. R & R fuel pump (push rod type)
4. R & R fuel pump (pulsating type)
5. Test fuel gauge
6. R & R fuel tank unit
7. R & R fuel lines
8. Overhaul carburetor (single barrel)
9. Overhaul carburetor (2 barrel)
10. Overhaul carburetor (4 barrel)
11. Repair electrical accessories
12. Repair or replace emission control
13. Make external adjustments on carburetor

Clutch
1. Troubleshoot clutch
2. R & R clutch assembly
3. R & R clutch release bearing
4. Adjust clutch
5. Repair hydraulic system
6. Replace clutch housing
7. R & R pilot bearings and bushing

Standard Transmission
1. Troubleshoot transmission problems
4. Adjust linkage
7. Adjust clutch

Automatic Transmission
7. Test, repair, or replace electrical accessories

Generator and Circuit
1. Test generator components
2. Remove and replace generator and belts
3. Repair generator

NEW CAR GET-READY MAN - (Continued)

COMPETENCIES REQUIRED:

Generator and Circuit
4. Remove, adjust and/or replace regulator
5. Run charging circuit test (on car)

Alternator and Circuit
1. Test the alternator components
2. Remove and replace alternator and belts
3. Repair an alternator
4. Remove, adjust and/or replace regulator
5. Run charging circuit test on car
6. Test light and field relays

Ignition System
1. Troubleshoot ignition system
2. Troubleshoot magnetic impulse or transistorized system
3. Remove and replace distributor
4. Install points and condensor
5. Install vacuum advance
6. Test distributor
7. Adjust mechanical advance
8. Test secondary circuit
9. R & R distributor caps, rotor and high tension cables
10. Set initial ignition timing
11. Test coil
12. R & R ignition coil
13. R & R ignition resistor and/or primary wire
14. R & R ignition switch and/or steering lock components
15. Remove, service and replace spark plugs
16. Scope engine

Battery
1. Check liquid level
2. Remove and replace battery
3. Load test battery
4. Test insulated and ground circuits
5. R & R and/or clean battery cables
6. Test specific gravity

Starter Motor and Circuit
1. Troubleshoot starting circuit
2. Remove and replace starter motor
3. Major overhaul of starter motor
4. Test the starter motor
5. Disassemble, repair, and/or replace starter solenoid

NEW CAR GET-READY MAN - (Continued)

COMPETENCIES REQUIRED:

Accessories:

1. Troubleshoot accessories operation
2. Install optional accessories
3. R & R windshield wiper motor
4. R & R windshield washer
5. R & R dash gauges
6. R & R radio and/or tape players
7. R & R horn
8. R & R accessory switches
9. Repair accessory wiring
10. R & R horn relay

Lights

1. Troubleshoot light system
2. R & R lightbulbs
3. R & R stop light switch
4. R & R dimmer switch
5. R & R headlight switch
6. Repair headlight switch
6. Repair headlight door switch
7. R & R turn signal switch
8. Aim headlights
9. R & R flasher unit
10. Repair light wiring

Brake System

1. Check fluid level
2. Troubleshoot brake system

Front and Rear Suspension

1. Troubleshoot front suspension
13. Clean, repack, and adjust front wheel bearings

Wheel Alignment and Balancing

1. Check tire pressure
4. Balance wheels

Vehicle Service

1. Lubricate vehicle
2. Clean lights and windows
3. Interior servicing
4. Wash vehicle
5. Wax and buff vehicle
6. Check and maintain windshield washer

NEW CAR GET-READY MAN - (Continued)

COMPETENCIES REQUIRED:

Orientation

1. Safety procedures
2. Housekeeping
3. Shop maintenance
5. Identification and use of proper hand tools
6. Care and use of power tools
8. Basic automotive electricity
9. Reading and using shop manual

Environmental Relationship

1. Job application
2. Job responsibility

STATEMENT OF PROFICIENCIES:

1. Trainee must have completed all assignments for this unit of instruction.

2. Trainee must have demonstrated satisfactory progress in all phases of the curriculum.

3. Trainee must have demonstrated a cooperative attitude, a willingness to learn and work, and pride in workmanship.

4. Trainee must pass a performance test given and evaluated in accordance with the curriculum.

PERFORMANCE TEST:

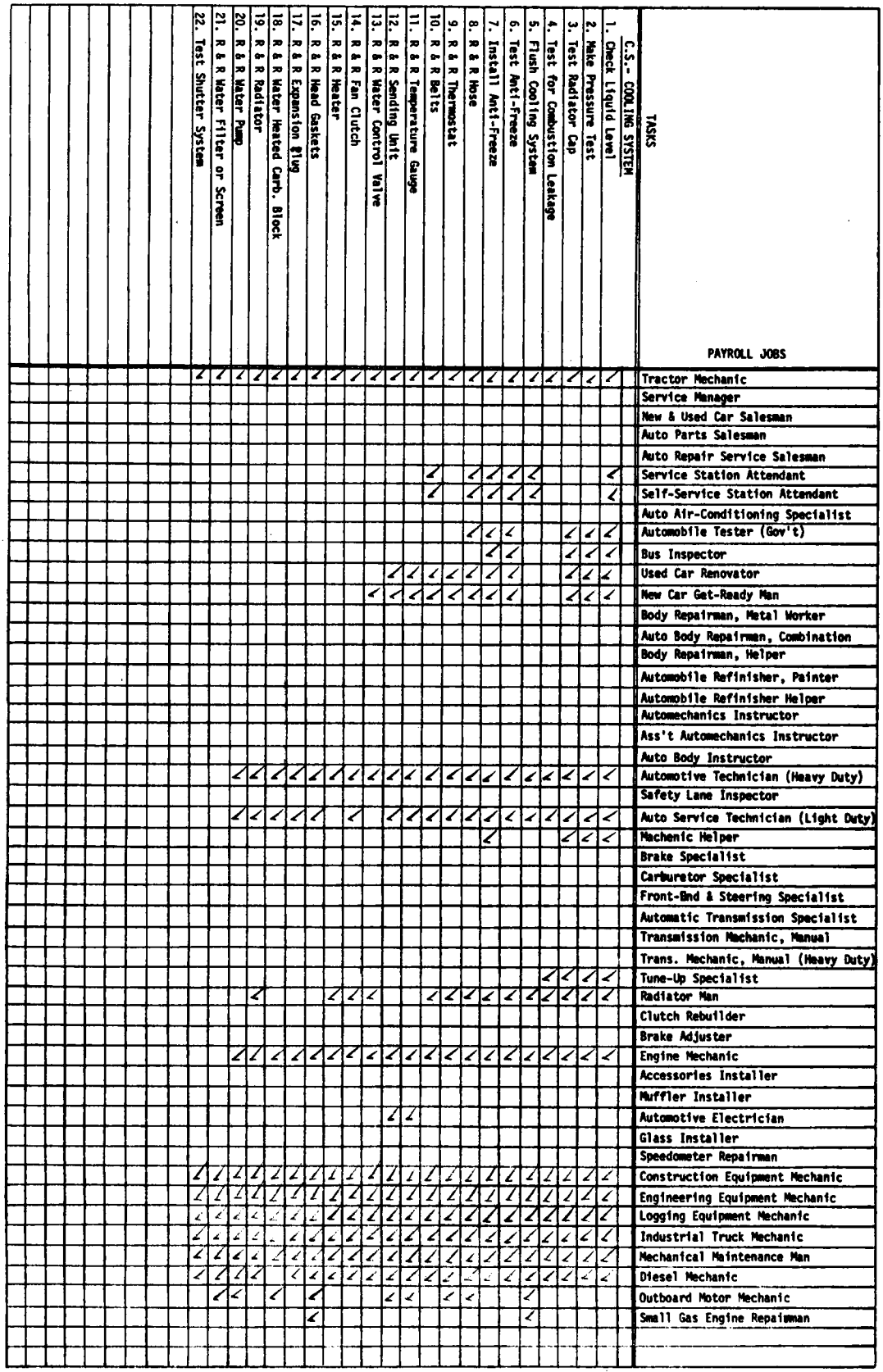
1. Complete all checks and tests as outlined on New Car Pre-Delivery Form (manufacturer recommended) or similar Diagnostic Form. These forms should be made in triplicate making, special note for any discrepancies or major unit deficiencies.
   (a). Inspection form heading must be completed showing car model, body style, identification number, key number, etc., and including inspector's name.
   (b). Every check item on form must be marked according to true findings.
   (c). Repairs or defects not covered by manufacturer's warranty must be repaired at time of inspection.

1. Time allowed for above inspection and minor repairs is 2 hours 30 minutes.

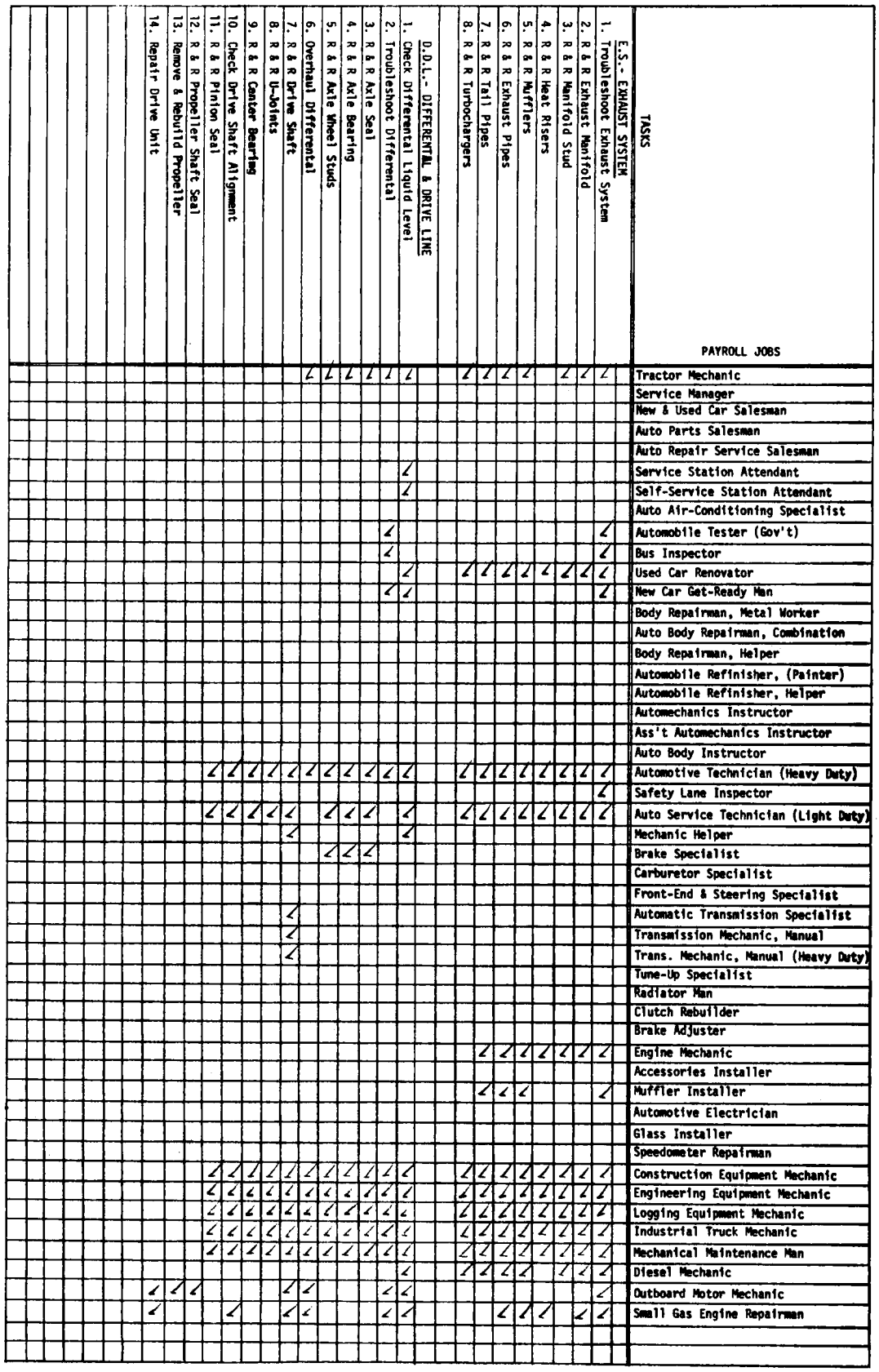
NEW CAR GET-READY MAN - (Continued)

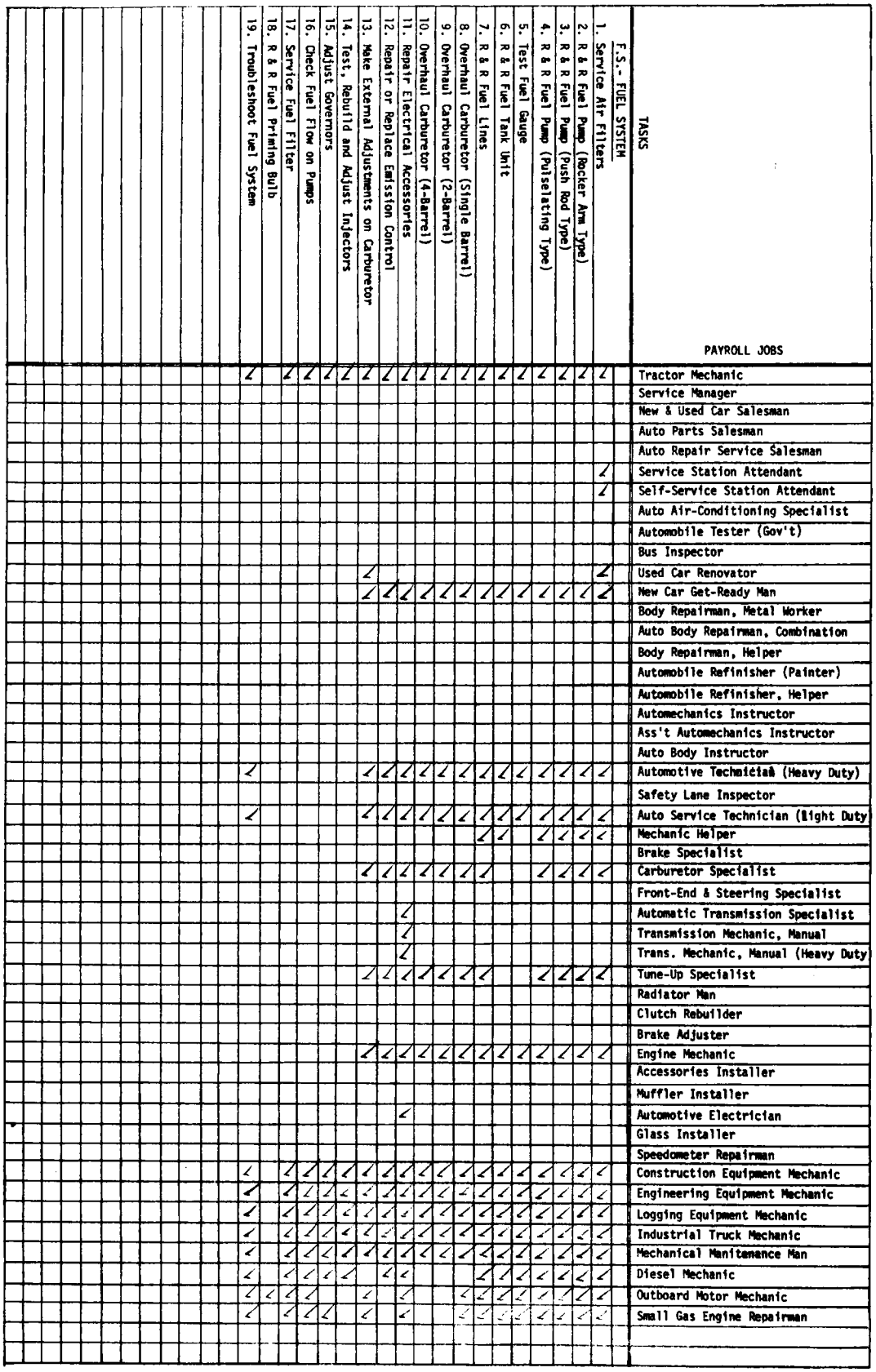
PERFORMANCE TEST:

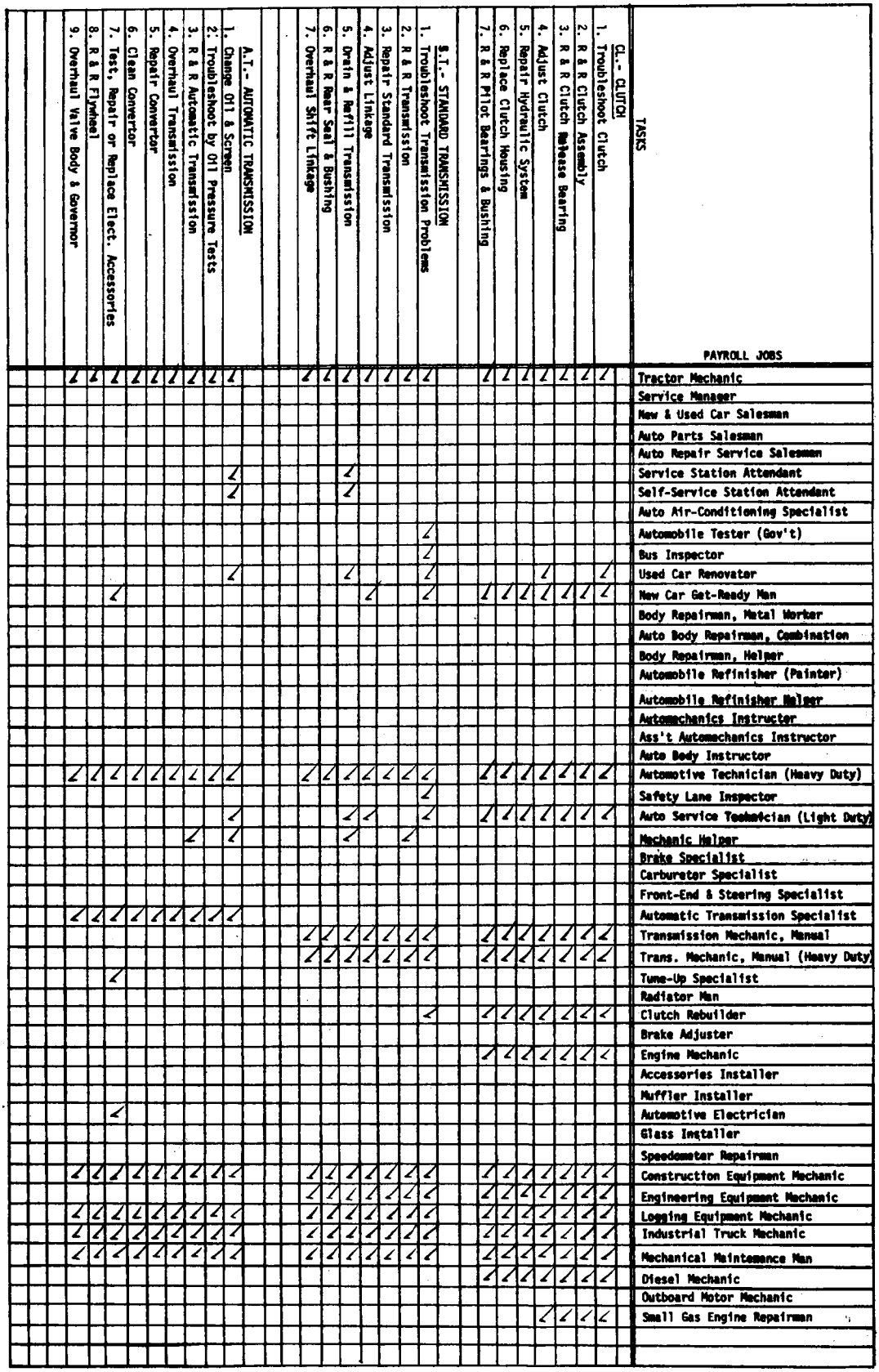
3. Must perform tests on major repairs noted on inspection form, refer to the appropriate proficiency job description, as listed:
   (1). Automobile Tune-Up
   (2). Automobile Electrician
   (3). Automobile Brake Specialist
   (4). Automobile Front-End & Steering Specialist
   (5). Automobile Air-Conditioning Specialist
   (6). Automobile Body Repairman, Combination


TASKS
C.S.- COOLING SYSTEM
1. Check Liquid Level
2. Make Pressure Test
3. Test Radiator Cap
4. Test for Combustion Leakage
5. Flush Cooling System
6. Test Anti-Freeze
7. Install Anti-Freeze
8. R & R Hose
9. R & R Thermostat
10. R & R Belts
11. R & R Temperature Gauge
12. R & R Sending Unit
13. R & R Water Control Valve
14. R & R Fan Clutch
15. R & R Heater
16. R & R Head Gaskets
17. R & R Expansion Plug
18. R & R Water Heated Carb. Block
19. R & R Radiator
20. R & R Water Pump
21. R & R Water Filter or Screen
22. Test Shutter System
PAYROLL JOBS
Tractor Mechanic
Service Manager
New & Used Car Salesman
Auto Parts Salesman
Auto Repair Service Salesman
Service Station Attendant
Self-Service Station Attendant
Auto Air-Conditioning Specialist
Automobile Tester (Gov't)
Bus Inspector
Used Car Renovator
New Car Get-Ready Man
Body Repairman, Metal Worker
Auto Body Repairman, Combination
Body Repairman, Helper
Automobile Refinisher, Painter
Automobile Refinisher Helper
Automechanics Instructor
Ass't Automechanics Instructor
Auto Body Instructor
Automotive Technician (Heavy Duty)
Safety Lane Inspector
Auto Service Technician (Light Duty)
Machenic Helper
Brake Specialist
Carburetor Specialist
Front-End & Steering Specialist
Automatic Transmission Specialist
Transmission Machanic, Manual
Trans. Mechanic, Manual (Heavy Duty)
Tune-Up Specialist
Radiator Man
Clutch Rebuilder
Brake Adjuster
Engine Mechanic
Accessories Installer
Muffler Installer
Automotive Electrician
Glass Installer
Speedometer Repairman
Construction Equipment Mechanic
Engineering Equipment Mechanic
Logging Equipment Mechanic
Industrial Truck Mechanic
Mechanical Maintenance Man
Diesel Mechanic
Outboard Motor Mechanic
Small Gas Engine Repairman

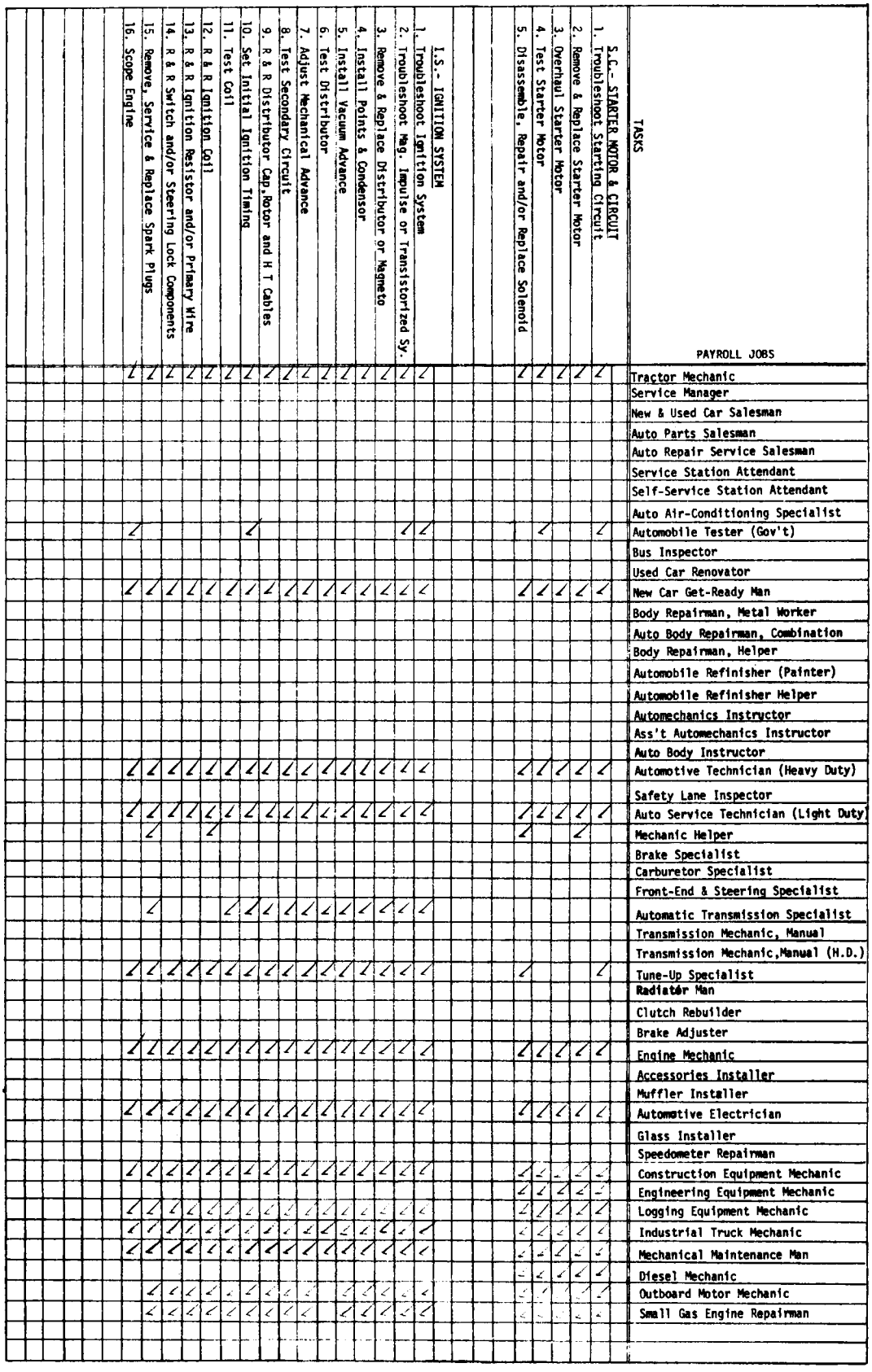
TASKS	Tractor Mechanic	Service Manager	New & Used Car Salesman	Auto Parts Salesman	Auto Repair Service Salesman	Service Station Attendant	Self-Service Station Attendant	Auto Air-Conditioning Specialist	Automobile Tester (Gov't)	Bus Inspector	Used Car Renovator	New Car Get-Ready Man	Body Repairman, Metal Worker	Auto Body Repairman, Combination	Body Repairman, Helper	Automobile Refinisher (Painter)	Automobile Refinisher Helper	Automechanics Instructor	Ass't Automechanics Instructor	Auto Body Instructor	Automotive Technician (Heavy Duty)	Safety Lane Inspector	Auto Service Technician (Light Duty)	Mechanic Helper	Brake Specialist	Carburetor Specialist	Front-End & Steering Specialist	Automatic Transmission Specialist	Transmission Mechanic, Manual	Trans. Mechanic, Manual (Heavy Duty)	Tune-Up Specialist	Radiator Man	Clutch Rebuilder	Brake Adjuster	Engine Mechanic	Accessories Installer	Muffler Installer	Automotive Electrician	Glass Installer	Speedometer Repairman	Construction Equipment Mechanic	Engineering Equipment Mechanic	Logging Equipment Mechanic	Industrial Truck Mechanic	Mechanical Maintenance Man	Diesel Mechanic	Outboard Motor Mechanic	Small Gas Engine Repairman
EN.- ENGINES																																																
1. Check and/or Replace Engine Oil	✓					✓	✓																																									
2. Troubleshoot Engine	✓						✓																																									
3. R & R Engine Assembly	✓						✓																																									
4. R & R Intake Manifold	✓						✓																																									
5. R & R Valve Cover Gaskets	✓						✓																																									
6. R & R Rocker Arm Assembly	✓						✓																																									
7. Adjust Valves	✓						✓																																									
8. R & R Head Gaskets	✓						✓																																									
9. Overhaul Cylinder Heads	✓						✓																																									
10. R & R Oil Pan	✓						✓																																									
11. Overhaul Pistons	✓						✓																																									
12. R & R Bearings	✓						✓																																									
13. R & R Rear Main Oil Seal	✓						✓																																									
14. R & R Timing Cover Oil Seal	✓						✓																																									
15. Remove Cylinder Ridge	✓						✓																																									
16. Hone Cylinder	✓						✓																																									
17. R & R Timing Chain and/or Gear	✓						✓																																									
18. R & R Cam Shaft	✓						✓																																									
19. R & R Valve Lifters & Cam Followers	✓						✓																																									
20. Rebuild Flat-Head Engine	✓						✓																																									
21. Rebuild In-Line Engine	✓						✓																																									
22. Rebuild V-Type Engine	✓						✓																																									
23. R & R Crank Shaft	✓						✓																																									
24. R & R Freeze Plugs	✓						✓																																									
25. R & R Engine Mounts	✓						✓																																									
26. R & R Blower System	✓						✓																																									
27. R & R Cylinder Sleeves	✓						✓																																									
28. R & R Port Covers and Clean Carbon	✓						✓																																									
29. R & R Cylinder Head and Clean Carbon	✓						✓																																									


TASKS
E.S.- EXHAUST SYSTEM
1. Troubleshoot Exhaust System
2. R & R Exhaust Manifold
3. R & R Manifold Stud
4. R & R Heat Risers
5. R & R Mufflers
6. R & R Exhaust Pipes
7. R & R Tail Pipes
8. R & R Turbochargers
D.D.L.- DIFFERENTIAL & DRIVE LINE
1. Check Differential Liquid Level
2. Troubleshoot Differential
3. R & R Axle Seal
4. R & R Axle Bearing
5. R & R Axle Wheel Studs
6. Overhaul Differential
7. R & R Drive Shaft
8. R & R U-Joints
9. R & R Center Bearing
10. Check Drive Shaft Alignment
11. R & R Pinion Seal
12. R & R Propeller Shaft Seal
13. Remove & Rebuild Propeller
14. Repair Drive Unit
PAYROLL JOBS
Tractor Mechanic
Service Manager
New & Used Car Salesman
Auto Parts Salesman
Auto Repair Service Salesman
Service Station Attendant
Self-Service Station Attendant
Auto Air-Conditioning Specialist
Automobile Tester (Gov't)
Bus Inspector
Used Car Renovator
New Car Get-Ready Man
Body Repairman, Metal Worker
Auto Body Repairman, Combination
Body Repairman, Helper
Automobile Refinisher, (Painter)
Automobile Refinisher, Helper
Automechanics Instructor
Ass't Automechanics Instructor
Auto Body Instructor
Automotive Technician (Heavy Duty)
Safety Lane Inspector
Auto Service Technician (Light Duty)
Mechanic Helper
Brake Specialist
Carburetor Specialist
Front-End & Steering Specialist
Automatic Transmission Specialist
Transmission Mechanic, Manual
Trans. Mechanic, Manual (Heavy Duty)
Tune-Up Specialist
Radiator Man
Clutch Rebuilder
Brake Adjuster
Engine Mechanic
Accessories Installer
Muffler Installer
Automotive Electrician
Glass Installer
Speedometer Repairman
Construction Equipment Mechanic
Engineering Equipment Mechanic
Logging Equipment Mechanic
Industrial Truck Mechanic
Mechanical Maintenance Man
Diesel Mechanic
Outboard Motor Mechanic
Small Gas Engine Repairman

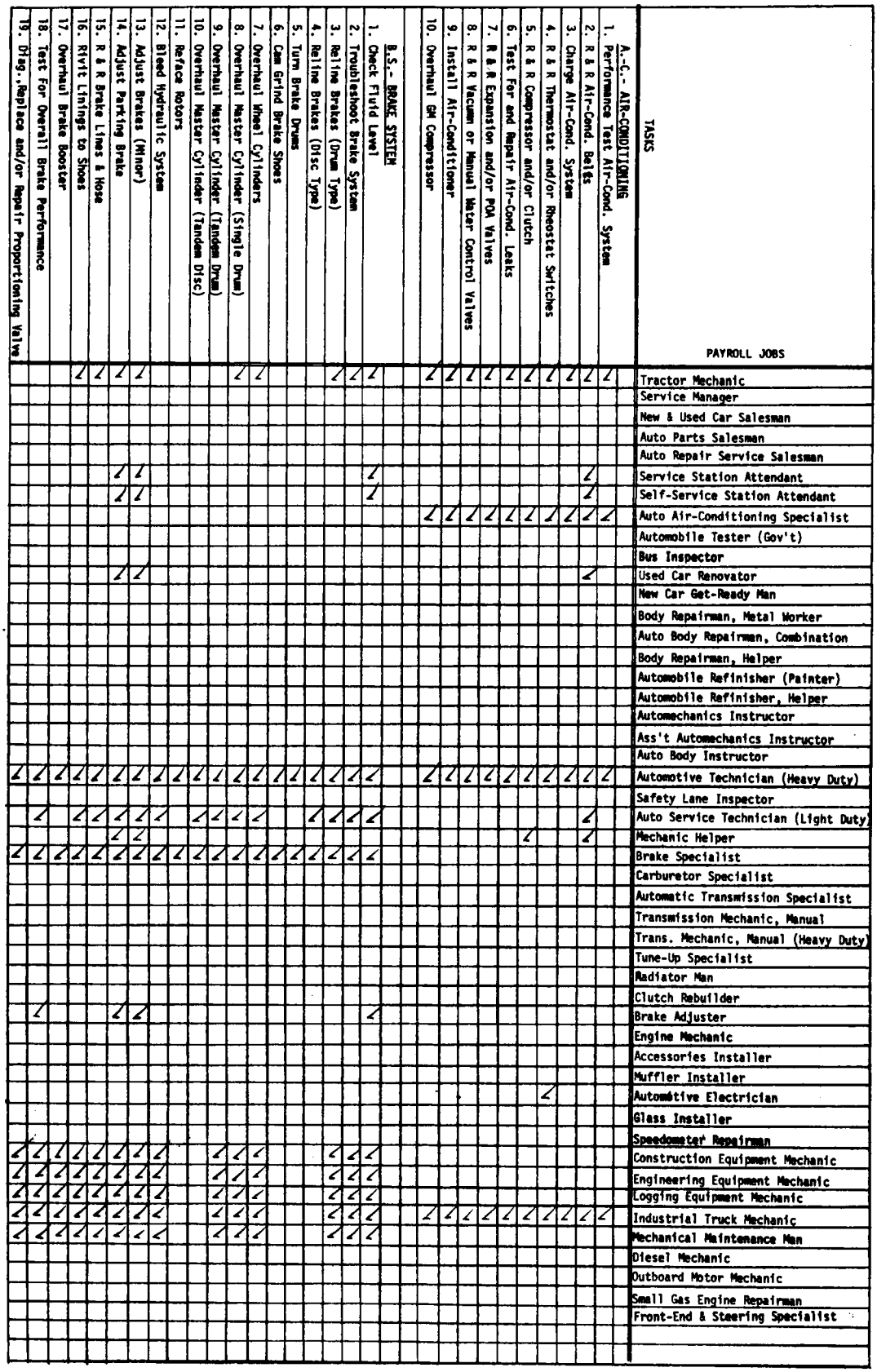

F.S.- FUEL SYSTEM
1. Service Air Filters
2. R & R Fuel Pump (Rocker Arm Type)
3. R & R Fuel Pump (Push Rod Type)
4. R & R Fuel Pump (Pulsating Type)
5. Test Fuel Gauge
6. R & R Fuel Tank Unit
7. R & R Fuel Lines
8. Overhaul Carburetor (Single Barrel)
9. Overhaul Carburetor (2-Barrel)
10. Overhaul Carburetor (4-Barrel)
11. Repair Electrical Accessories
12. Repair or Replace Emission Control
13. Make External Adjustments on Carburetor
14. Test, Rebuild and Adjust Injectors
15. Adjust Governors
16. Check Fuel Flow on Pumps
17. Service Fuel Filter
18. R & R Fuel Priming Bulb
19. Troubleshoot Fuel System
TASKS
PAYROLL JOBS
Tractor Mechanic
Service Manager
New & Used Car Salesman
Auto Parts Salesman
Auto Repair Service Salesman
Service Station Attendant
Self-Service Station Attendant
Auto Air-Conditioning Specialist
Automobile Tester (Gov't)
Bus Inspector
Used Car Renovator
New Car Get-Ready Man
Body Repairman, Metal Worker
Auto Body Repairman, Combination
Body Repairman, Helper
Automobile Refinisher (Painter)
Automobile Refinisher, Helper
Automechanics Instructor
Ass't Automechanics Instructor
Auto Body Instructor
Automotive Technician (Heavy Duty)
Safety Lane Inspector
Auto Service Technician (Light Duty
Mechanic Helper
Brake Specialist
Carburetor Specialist
Front-End & Steering Specialist
Automatic Transmission Specialist
Transmission Mechanic, Manual
Trans. Mechanic, Manual (Heavy Duty
Tune-Up Specialist
Radiator Man
Clutch Rebuilder
Brake Adjuster
Engine Mechanic
Accessories Installer
Muffler Installer
Automotive Electrician
Glass Installer
Speedometer Repairman
Construction Equipment Mechanic
Engineering Equipment Mechanic
Logging Equipment Mechanic
Industrial Truck Mechanic
Mechanical Maintenance Man
Diesel Mechanic
Outboard Motor Mechanic
Small Gas Engine Repairman


TASKS
PAYROLL JOBS
CL.- CLUTCH
1. Troubleshoot Clutch
2. R & R Clutch Assembly
3. R & R Clutch Release Bearing
4. Adjust Clutch
5. Repair Hydraulic System
6. Replace Clutch Housing
7. R & R Pilot Bearings & Bushing
S.T.- STANDARD TRANSMISSION
1. Troubleshoot Transmission Problems
2. R & R Transmission
3. Repair Standard Transmission
4. Adjust Linkage
5. Drain & Refill Transmission
6. R & R Rear Seal & Bushing
7. Overhaul Shift Linkage
A.T.- AUTOMATIC TRANSMISSION
1. Change Oil & Screen
2. Troubleshoot by Oil Pressure Tests
3. R & R Automatic Transmission
4. Overhaul Transmission
5. Repair Converter
6. Clean Convertor
7. Test, Repair or Replace Elect. Accessories
8. R & R Flywheel
9. Overhaul Valve Body & Governor
Tractor Mechanic
Service Manager
New & Used Car Salesman
Auto Parts Salesman
Auto Repair Service Salesman
Service Station Attendant
Self-Service Station Attendant
Auto Air-Conditioning Specialist
Automobile Tester (Gov't)
Bus Inspector
Used Car Renovator
New Car Get-Ready Man
Body Repairman, Metal Worker
Auto Body Repairman, Combination
Body Repairman, Helper
Automobile Refinisher (Painter)
Automobile Refinisher Helper
Automechanics Instructor
Ass't Automechanics Instructor
Auto Body Instructor
Automotive Technician (Heavy Duty)
Safety Lane Inspector
Auto Service Technician (Light Duty)
Mechanic Helper
Brake Specialist
Carburetor Specialist
Front-End & Steering Specialist
Automatic Transmission Specialist
Transmission Mechanic, Manual
Trans. Mechanic, Manual (Heavy Duty)
Tune-Up Specialist
Radiator Man
Clutch Rebuilder
Brake Adjuster
Engine Mechanic
Accessories Installer
Muffler Installer
Automotive Electrician
Glass Installer
Speedometer Repairman
Construction Equipment Mechanic
Engineering Equipment Mechanic
Logging Equipment Mechanic
Industrial Truck Mechanic
Mechanical Maintenance Man
Diesel Mechanic
Outboard Motor Mechanic
Small Gas Engine Repairman

TASKS	PAYROLL JOBS
G.C. - GENERATOR & CIRCUIT	
1. Test Generator Components	
2. Remove & Replace Generator & Belts	
3. Repair Generator	
4. Remove, Adjust and/or Replace Regulator	
5. Run Charging Circuit Test (On Car)	
A.C. - ALTERNATOR & CIRCUIT	
1. Test Alternator Components	
2. Remove & Replace Alternator & Belts	
3. Repair Alternator	
4. Remove, Adjust and/or Replace Regulator	
5. Run Charging Circuit Test (On Car)	
6. Test Light & Field Relays	
Ba. - BATTERY	
1. Check Liquid Level	
2. Remove & Replace Battery	
3. Load Test Battery	
4. Test Insulated & Ground Circuits	
5. Remove, Replace and/or Clean Battery Cables	
6. Test Specific Gravity	
	Tractor Mechanic
	Service Manager
	New & Used Car Salesman
	Auto Parts Salesman
	Auto Repair Service Salesman
	Service Station Attendant
	Self-Service Station Attendant
	Auto Air-Conditioning Specialist
	Automobile Tester (Gov't)
	Bus Inspector
	Used Car Renovator
	New Car Get-Ready Man
	Body Repairman, Metal Worker
	Auto Body Repairman, Combination
	Body Repairman, Helper
	Automobile Refinisher (Painter)
	Automobile Refinisher, Helper
	Automechanics Instructor
	Ass't Automechanics Instructor
	Auto Body Instructor
	Automotive Technician (Heavy Duty)
	Safety Lane Inspector
	Auto Service Technician (Light Duty)
	Mechanic Helper
	Brake Specialist
	Carburetor Specialist
	Front-End & Steering Specialist
	Automatic Transmission Specialist
	Transmission Mechanic, Manual
	Trans. Mechanic, Manual (Heavy Duty)
	Tune-Up Specialist
	Radiator Man
	Clutch Rebuilder
	Brake Adjuster
	Engine Mechanic
	Accessories Installer
	Muffler Installer
	Automotive Electrician
	Glass Installer
	Speedometer Repairman
	Construction Equipment Mechanic
	Engineering Equipment Mechanic
	Logging Equipment Mechanic
	Industrial Truck Mechanic
	Mechanical Maintenance Man
	Diesel Mechanic
	Outboard Motor Mechanic
	Small Gas Engine Repairman


S.C.- STARTER MOTOR & CIRCUIT
1. Troubleshoot Starting Circuit
2. Remove & Replace Starter Motor
3. Overhaul Starter Motor
4. Test Starter Motor
5. Disassemble, Repair and/or Replace Solenoid
I.S.- IGNITION SYSTEM
1. Troubleshoot Ignition System
2. Troubleshoot Mag. Impulse or Transistorized Sy.
3. Remove & Replace Distributor or Magneto
4. Install Points & Condensor
5. Install Vacuum Advance
6. Test Distributor
7. Adjust Mechanical Advance
8. Test Secondary Circuit
9. R & R Distributor Cap, Rotor and H.T. Cables
10. Set Initial Ignition Timing
11. Test Coil
12. R & R Ignition Coil
13. R & R Ignition Resistor and/or Primary Wire
14. R & R Switch and/or Steering Lock Components
15. Remove, Service & Replace Spark Plugs
16. Scope Engine
TASKS
PAYROLL JOBS
Tractor Mechanic
Service Manager
New & Used Car Salesman
Auto Parts Salesman
Auto Repair Service Salesman
Service Station Attendant
Self-Service Station Attendant
Auto Air-Conditioning Specialist
Automobile Tester (Gov't)
Bus Inspector
Used Car Renovator
New Car Get-Ready Man
Body Repairman, Metal Worker
Auto Body Repairman, Combination
Body Repairman, Helper
Automobile Refinisher (Painter)
Automobile Refinisher Helper
Automechanics Instructor
Ass't Automechanics Instructor
Auto Body Instructor
Automotive Technician (Heavy Duty)
Safety Lane Inspector
Auto Service Technician (Light Duty)
Mechanic Helper
Brake Specialist
Carburetor Specialist
Front-End & Steering Specialist
Automatic Transmission Specialist
Transmission Mechanic, Manual
Transmission Mechanic, Manual (H.D.)
Tune-Up Specialist
Radiator Man
Clutch Rebuilder
Brake Adjuster
Engine Mechanic
Accessories Installer
Muffler Installer
Automotive Electrician
Glass Installer
Speedometer Repairman
Construction Equipment Mechanic
Engineering Equipment Mechanic
Logging Equipment Mechanic
Industrial Truck Mechanic
Mechanical Maintenance Man
Diesel Mechanic
Outboard Motor Mechanic
Small Gas Engine Repairman

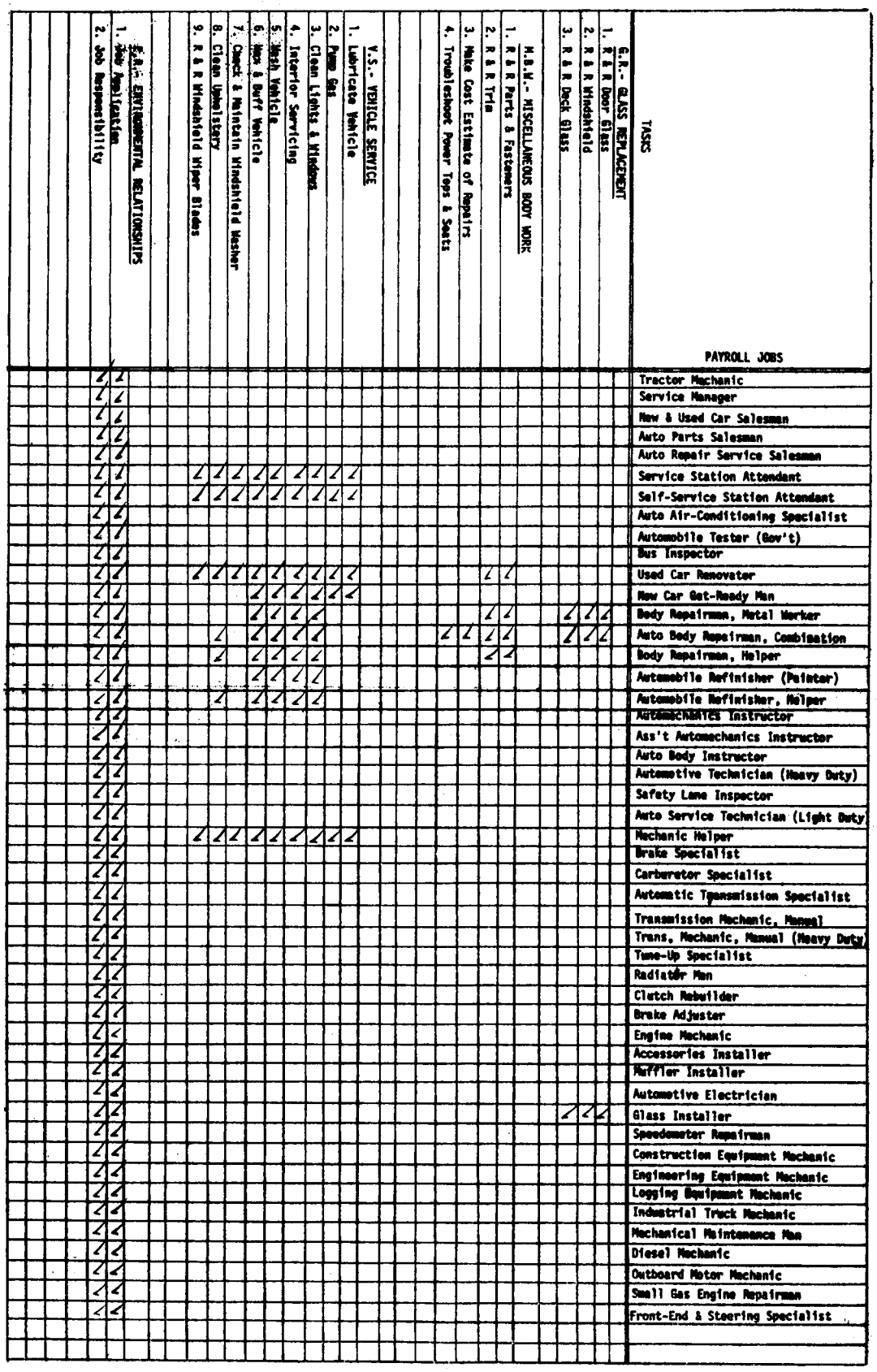
TASKS	Tractor Mechanic	Service Manager	New & Used Car Salesman	Auto Parts Salesman	Auto Repair Service Salesman	Service Station Attendant	Self-Service Station Attendant	Auto Air-Conditioning Specialist	Automobile Tester (Gov'T)	Bus Inspector	Used Car Renovator	New Car Get-Ready Man	Body Repairman, Metal Worker	Auto Body Repairman, Combination	Body Repairman, Helper	Automobile Refinisher (Painter)	Automobile Refinisher, Helper	Automechanics Instructor	Ass't Automechanics Instructor	Auto Body Instructor	Automotive Technician (Heavy Duty)	Safety Lane Inspector	Auto Service Technician (Light Duty	Mechanic Helper	Brake Specialist	Carburetor Specialist	Automatic Transmission Specialist	Transmission Mechanic, Manual	Trans. Mechanic, Manual (Heavy Duty	Tune-Up Specialist	Radiator Man	Clutch Rebuilder	Brake Adjuster	Engine Mechanic	Accessories Installer	Muffler Installer	Automotive Electrician	Glass Installer	Speedometer Repairman	Construction Equipment Mechanic	Engineering Equipment Mechanic	Logging Equipment Mechanic	Industrial Truck Mechanic	Mechanical Maintenance Man	Diesel Mechanic	Outboard Motor Mechanic	Small Gas Engine Repairman	Front-End & Steering Specialist		
PAYROLL JOBS																																																	
AGG.- ACCESSORIES																																																	
1. Troubleshoot Accessories Operation											✓	✓																																				
2. Install Optional Accessories																																																
3. R & R Windshield Wiper Motor																																																
4. R & R Windshield Washer																																																
5. R & R Dash Gages																																																
6. R & R Radio and/or Tape Player																																																
7. R & R Horns																																																
8. R & R Accessory Switches																																																
9. Repair Accessory Wiring																																																
10. R & R Horn Relay																																																
LL.- LIGHTS																																																
1. Troubleshoot Light System										✓																																						
2. R & R Lightbulbs									✓	✓																																						
3. R & R Stop Light Switch									✓	✓																																						
4. R & R Dimmer Switch									✓	✓																																						
5. R & R Headlight Switch							✓	✓	✓	✓																																						
6. R & R Headlight Door Switch							✓	✓	✓	✓																																						
7. R & R Turn Signal Switch						✓	✓	✓	✓	✓																																						
8. Aim Headlights					✓																																										
9. R & R Flasher Unit				✓	✓																																										
10. Repair Light Wiring			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓																																				

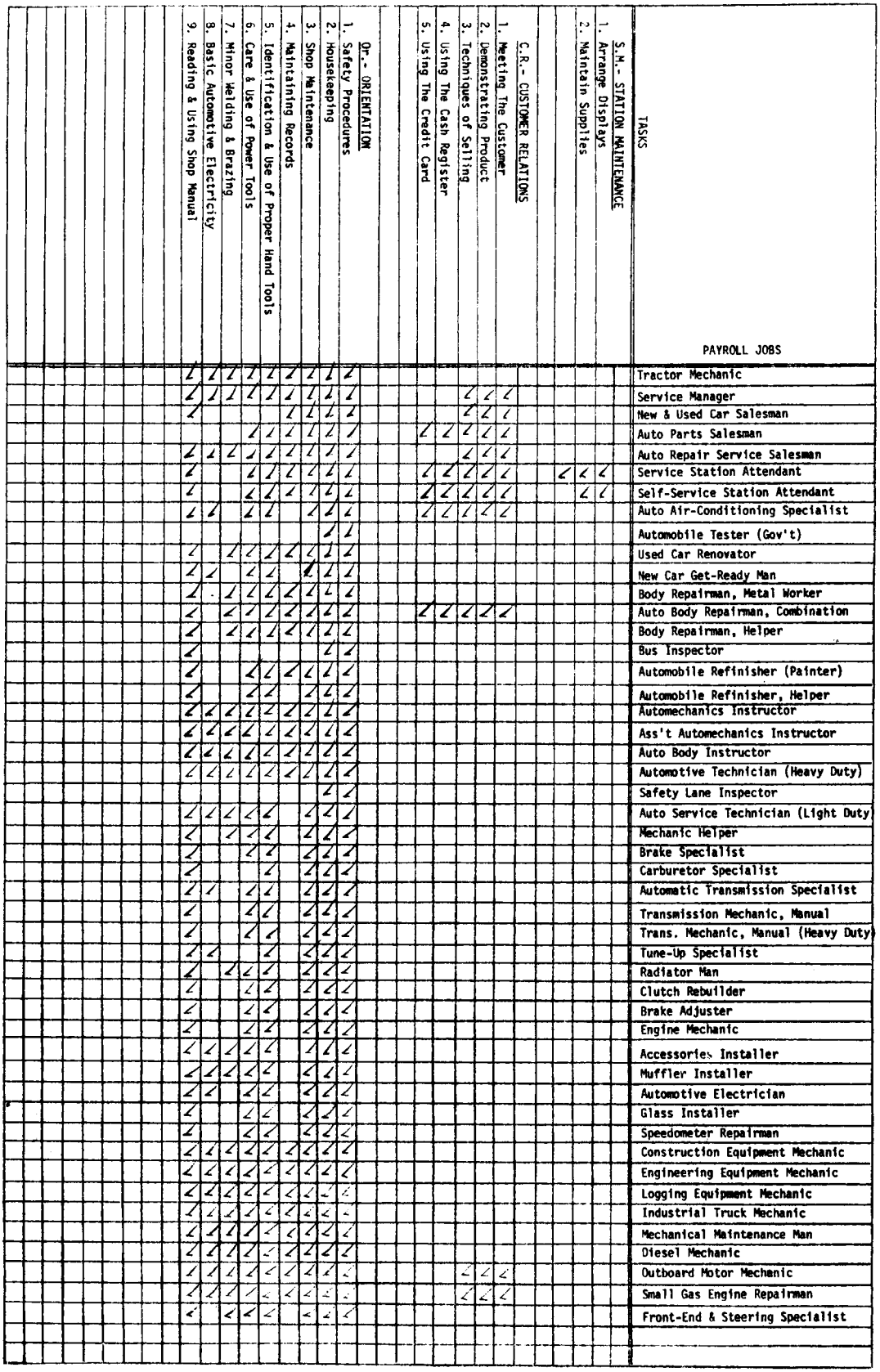

TASKS
A.-C.- AIR-CONDITIONING
1. Performance Test Air-Cond. System
2. R & R Air-Cond. Belts
3. Charge Air-Cond. System
4. R & R Thermostat and/or Rheostat Switches
5. R & R Compressor and/or Clutch
6. Test For and Repair Air-Cond. Leaks
7. R & R Expansion and/or POA Valves
8. R & R Vacuum or Manual Water Control Valves
9. Install Air-Conditioner
10. Overhaul GM Compressor
B.S.- BRAKE SYSTEM
1. Check Fluid Level
2. Troubleshoot Brake System
3. Reline Brakes (Drum Type)
4. Reline Brakes (Disc Type)
5. Turn Brake Drums
6. Cam Grind Brake Shoes
7. Overhaul Wheel Cylinders
8. Overhaul Master Cylinder (Single Drum)
9. Overhaul Master Cylinder (Tandem Drum)
10. Overhaul Master Cylinder (Tandem Disc)
11. Reface Rotors
12. Bleed Hydraulic System
13. Adjust Brakes (Minor)
14. Adjust Parking Brake
15. R & R Brake Lines & Hose
16. Rivit Linings to Shoes
17. Overhaul Brake Booster
18. Test For Overall Brake Performance
19. Diag.,Replace and/or Repair Proportioning Valve
PAYROLL JOBS
Tractor Mechanic
Service Manager
New & Used Car Salesman
Auto Parts Salesman
Auto Repair Service Salesman
Service Station Attendant
Self-Service Station Attendant
Auto Air-Conditioning Specialist
Automobile Tester (Gov't)
Bus Inspector
Used Car Renovator
New Car Get-Ready Man
Body Repairman, Metal Worker
Auto Body Repairman, Combination
Body Repairman, Helper
Automobile Refinisher (Painter)
Automobile Refinisher, Helper
Automechanics Instructor
Ass't Automechanics Instructor
Auto Body Instructor
Automotive Technician (Heavy Duty)
Safety Lane Inspector
Auto Service Technician (Light Duty)
Mechanic Helper
Brake Specialist
Carburetor Specialist
Automatic Transmission Specialist
Transmission Mechanic, Manual
Trans. Mechanic, Manual (Heavy Duty)
Tune-Up Specialist
Radiator Man
Clutch Rebuilder
Brake Adjuster
Engine Mechanic
Accessories Installer
Muffler Installer
Automotive Electrician
Glass Installer
Speedometer Repairman
Construction Equipment Mechanic
Engineering Equipment Mechanic
Logging Equipment Mechanic
Industrial Truck Mechanic
Mechanical Maintenance Man
Diesel Mechanic
Outboard Motor Mechanic
Small Gas Engine Repairman
Front-End & Steering Specialist

TASKS	Tractor Mechanic	Service Manager	New & Used Car Salesman	Auto Parts Salesman	Auto Repair Service Salesman	Service Station Attendant	Self-Service Station Attendant	Auto Air-Conditioning Specialist	Automobile Tester (Gov't)	Bus Inspector	Used Car Renovator	New Car Get-Ready Man	Body Repairman, Metal Worker	Auto Body Repairman, Combination	Body Repairman, Helper	Automobile Refinisher (Painter)	Automobile Refinisher, Helper	Automechanics Instructor	Ass't Automechanics Instructor	Auto Body Instructor	Automotive Technician (Heavy Duty)	Safety Lane Inspector	Auto Service Technician (Light Duty	Mechanic Helper	Brake Specialist	Carburetor Specialist	Automatic Transmission Specialist	Transmission Mechanic, Manual	Trans. Mechanic, Manual (Heavy Duty	Tune-Up Specialist	Radiator Man	Clutch Rebuilder	Brake Adjuster	Engine Machinic	Accessories Installer	Muffler Installer	Automotive Electrician	Glass Installer	Speedometer Repairman	Construction Equipment Mechanic	Engineering Equipment Mechanic	Logging Equipment Mechanic	Industrial Truck Mechanic	Mechanical Maintenance Man	Diesel Mechanic	Outboard Motor Mechanic	Small Gas Engine Repairman	Front-End & Steering Specialist
PAYROLL JOBS																																																
F.-R.S.- FRONT & REAR SUSPENSION																																																
1. Troubleshoot Front Suspension									✓	✓		✓									✓	✓	✓																										
2. R & R Coil Springs																																																
3. R & R Leaf Springs																																																
4. R & R Torsion Bars																																																
5. R & R King Pins																																																
6. R & R Ball Joints																																																
7. R & R Upper Control Arm																																																
8. R & R Lower Control Arm																																																
9. R & R Stabilizers																																																
10. R & R Sway Bar																																																
11. R & R Strut Bar																																																
12. R & R Spring Shackles																																																
13. Clean,Repack and Adjust Front Wheel Bearings									✓	✓		✓									✓	✓	✓																										
14. R & R Tie Rod Ends																																																
15. R & R Drag Link																																																
16. R & R Shocks									✓	✓		✓									✓	✓	✓																										
17. R & R Idler Arm									✓	✓		✓									✓	✓	✓																										
M.A.-B.- WHEEL ALIGNMENT & BALANCING																																																
1. Check Tire Pressure					✓		✓			✓		✓									✓	✓	✓																										
2. Rotate Tires																																																
3. Remove and Install Tires					✓		✓			✓		✓									✓	✓	✓																										
4. Balance Wheels					✓		✓			✓		✓									✓	✓	✓																										
5. True Tires																																																
6. Troubleshoot Alignment					✓		✓		✓	✓		✓									✓	✓	✓																										
7. Adjust Trim Height					✓		✓		✓	✓		✓									✓	✓	✓																										
8. Align Front End					✓		✓		✓	✓		✓									✓	✓	✓																										

TASKS	Tractor Mechanic	Service Manager	New & Used Car Salesman	Auto Parts Salesman	Auto Repair Service Salesman	Service Station Attendant	Self-Service Station Attendant	Auto Air-Conditioning Specialist	Automobile Tester (Gov't)	Bus Inspector	Used Car Renovator	New Car Get-Ready Man	Body Repairman, Metal Worker	Auto Body Repairman, Combination	Body Repairman, Helper	Automobile Refinisher (Painter)	Automobile Refinisher, Helper	Automechanics Instructor	Ass't Automechanics Instructor	Auto Body Instructor	Automotive Technician (Heavy Duty)	Safety Lane Inspector	Auto Service Technician (Light Duty)	Mechanic Helper	Brake Specialist	Carburetor Specialist	Automatic Transmission Specialist	Transmission Mechanic, Manual	Trans. Mechanic, Manual (Heavy Duty)	Tune-Up Specialist	Radiator Man	Clutch Rebuilder	Brake Adjuster	Engine Mechanic	Accessories Installer	Muffler Installer	Automotive Electrician	Glass Installer	Speedometer Repairman	Construction Equipment Mechanic	Engineering Equipment Mechanic	Logging Equipment Mechanic	Industrial Truck Mechanic	Mechanical Maintenance Man	Diesel Mechanic	Outboard Motor Mechanic	Small Gas Engine Repairman	Front-End & Steering Specialist
PAYROLL JOBS																																																
S.G.- STEERING GEARS																																																
1. Troubleshoot Manual Steering	✓																				✓		✓																										
2. Troubleshoot Power Steering	✓								✓	✓											✓		✓																										
3. R & R Manual Steering	✓								✓	✓											✓		✓																										
4. R & R Power Steering	✓																				✓		✓																										
5. R & R Steering Shaft U-Joint	✓																				✓		✓																										
6. Repair Manual Steering Gear	✓																				✓		✓																										
7. Repair Power Steering Gear	✓																				✓		✓																										
8. Adjust Manual Steering Gear	✓																				✓		✓																										
9. Adjust Power Steering Gear	✓																				✓		✓																										
10. R & R Power Steering Pump	✓																				✓		✓																										
11. Repair Power Steering Pump	✓																				✓		✓																										
12. R & R Power Steering Cylinder	✓																				✓		✓																										
13. Repair Power Steering Cylinder	✓																				✓		✓																										
14. R & R Steering Wheel	✓																				✓		✓																										
15. R & R Power Steering Belt	✓										✓										✓		✓																										
16. R & R Power Steering Hose	✓										✓										✓		✓																										
17. R & R and Replace Control Valve	✓																				✓		✓																										
18. Check Power Steering Fluid	✓										✓										✓		✓																										
M.M.- METAL WORK (BODY & FENDER)																																																	
1. Diagnosis of Metal Problems													✓	✓	✓																																
2. Roughing Out & Shaping Repairs													✓	✓	✓																																
3. Dumping & Dinging Surface Repairs													✓	✓	✓																																
4. Shrinking To Reduce Metal To Size													✓	✓	✓																																
5. Grinding Finished Repairs													✓	✓	✓																																
6. Filing Finished Repairs													✓	✓	✓																																
7. Diagnose and Align Body or Frame													✓	✓	✓																																

TASKS	PAYROLL JOBS	Tractor Mechanic	Service Manager	New & Used Car Salesman	Auto Parts Salesman	Auto Repair Service Salesman	Service Station Attendant	Self-Service Station Attendant	Auto Air-Conditioning Specialist	Automobile Tester (Gov't)	Bus Inspector	Used Car Renovator	New Car Get-Ready Man	Body Repairman, Metal Worker	Auto Body Repairman, Combination	Body Repairman, Helper	Automobile Refinisher (Painter)	Automobile Refinisher, Helper	Automechanics Instructor	Ass't Automechanics Instructor	Auto Body Instructor	Automotive Technician (Heavy Duty)	Safety Lane Inspector	Auto Service Technician (Light Duty)	Mechanic Helper	Brake Specialist	Carburetor Specialist	Automatic Transmission Specialist	Transmission Mechanic, Manual	Trans. Mechanic, Manual(Heavy Duty)	Tune-Up Specialist	Radiator Man	Clutch Rebuilder	Brake Adjuster	Engine Mechanic	Accessories Installer	Muffler Installer	Automotive Electrician	Glass Installer	Speedometer Repairman	Construction Equipment Mechanic	Engineering Equipment Mechanic	Logging Equipment Mechanic	Industrial Truck Mechanic	Mechanical Maintenance Man	Diesel Mechanic	Outboard Motor Mechanic	Small Gas Engine Repairman	Front-End & Steering Specialist
P.M.- PANEL WORK (BODY & FENDER)																																																
1. R & R Quarter Panel														✓	✓																																		
2. Repair Damaged Quarter Panel														✓	✓																																		
3. R & R Rocker Panel														✓	✓																																		
4. Repair Damaged Rocker Panel														✓	✓																																		
5. R & R Top														✓	✓																																		
6. Repair Damaged Top														✓	✓																																		
7. Replace Outside Door Panel														✓	✓																																		
8. R & R Door														✓	✓																																		
9. Repair Damaged Door														✓	✓																																		
10. R & R Hood														✓	✓																																		
11. Repair Damaged Hood														✓	✓																																		
12. R & R Rear Deck														✓	✓																																		
13. Repair Damaged Rear Deck														✓	✓																																		
14. R & R Fender														✓	✓																																		
15. Repair Damaged Fender														✓	✓																																		
Pa.- PAINTING																																															
1. Clean Surface For Painting												✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2. Prepare Surface For Painting												✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3. Apply Tape and Paper												✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
4. Use & Care of Spray Gun												✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
5. Apply Primer To Surface												✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6. Apply Enamel To Surface												✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
7. Apply Lacquer To Surface												✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
8. Apply Acrylic Paint To Surface												✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
9. Apply Vinyl Top To Surface												✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓


TASKS
PAYROLL JOBS
G.R.- GLASS REPLACEMENT
1. R & R Door Glass
2. R & R Windshield
3. R & R Deck Glass
M.B.W.- MISCELLANEOUS BODY WORK
1. R & R Parts & Fasteners
2. R & R Trim
3. Make Cost Estimate of Repairs
4. Troubleshoot Power Tops & Seats
V.S.- VEHICLE SERVICE
1. Lubricate Vehicle
2. Pump Gas
3. Clean Lights & Windows
4. Interior Servicing
5. Wash Vehicle
6. Wax & Buff Vehicle
7. Check & Maintain Windshield Washer
8. Clean Upholstery
9. R & R Windshield Wiper Blades
E.R.- ENVIRONMENTAL RELATIONSHIPS
1. Job Application
2. Job Responsibility
Tractor Mechanic
Service Manager
New & Used Car Salesman
Auto Parts Salesman
Auto Repair Service Salesman
Service Station Attendant
Self-Service Station Attendant
Auto Air-Conditioning Specialist
Automobile Tester (Gov't)
Bus Inspector
Used Car Renovator
New Car Get-Ready Man
Body Repairman, Metal Worker
Auto Body Repairman, Combination
Body Repairman, Helper
Automobile Refinisher (Painter)
Automobile Refinisher, Helper
Automechanics Instructor
Ass't Automechanics Instructor
Auto Body Instructor
Automotive Technician (Heavy Duty)
Safety Lane Inspector
Auto Service Technician (Light Duty)
Mechanic Helper
Brake Specialist
Carburetor Specialist
Automatic Transmission Specialist
Transmission Mechanic, Manual
Trans. Mechanic, Manual (Heavy Duty)
Tune-Up Specialist
Radiator Man
Clutch Rebuilder
Brake Adjuster
Engine Mechanic
Accessories Installer
Muffler Installer
Automotive Electrician
Glass Installer
Speedometer Repairman
Construction Equipment Mechanic
Engineering Equipment Mechanic
Logging Equipment Mechanic
Industrial Truck Mechanic
Mechanical Maintenance Man
Diesel Mechanic
Outboard Motor Mechanic
Small Gas Engine Repairman
Front-End & Steering Specialist


TASKS
S.M.- STATION MAINTENANCE
1. Arrange Displays
2. Maintain Supplies
C.R.- CUSTOMER RELATIONS
1. Meeting The Customer
2. Demonstrating Product
3. Techniques of Selling
4. Using The Cash Register
5. Using The Credit Card
Or.- ORIENTATION
1. Safety Procedures
2. Housekeeping
3. Shop Maintenance
4. Maintaining Records
5. Identification & Use of Proper Hand Tools
6. Care & Use of Power Tools
7. Minor Welding & Brazing
8. Basic Automotive Electricity
9. Reading & Using Shop Manual
PAYROLL JOBS
Tractor Mechanic
Service Manager
New & Used Car Salesman
Auto Parts Salesman
Auto Repair Service Salesman
Service Station Attendant
Self-Service Station Attendant
Auto Air-Conditioning Specialist
Automobile Tester (Gov't)
Used Car Renovator
New Car Get-Ready Man
Body Repairman, Metal Worker
Auto Body Repairman, Combination
Body Repairman, Helper
Bus Inspector
Automobile Refinisher (Painter)
Automobile Refinisher, Helper
Automechanics Instructor
Ass't Automechanics Instructor
Auto Body Instructor
Automotive Technician (Heavy Duty)
Safety Lane Inspector
Auto Service Technician (Light Duty
Mechanic Helper
Brake Specialist
Carburetor Specialist
Automatic Transmission Specialist
Transmission Mechanic, Manual
Trans. Mechanic, Manual (Heavy Duty)
Tune-Up Specialist
Radiator Man
Clutch Rebuilder
Brake Adjuster
Engine Mechanic
Accessories Installer
Muffler Installer
Automotive Electrician
Glass Installer
Speedometer Repairman
Construction Equipment Mechanic
Engineering Equipment Mechanic
Logging Equipment Mechanic
Industrial Truck Mechanic
Mechanical Maintenance Man
Diesel Mechanic
Outboard Motor Mechanic
Small Gas Engine Repairman
Front-End & Steering Specialist

1. Not Needed
2. Little Need
3. Average Need
4. High Need

Traits and Abilities	Payroll Jobs	SERVICE STATION ATTENDANT				FRONT-END & STEERING SPECIALIST				BRAKE TECHNICIAN				MECHANIC HELPER				DRIVE-DELIVERY TECHNICIAN				AUTOMOBILE SERVICE MECHANIC				AUTOMOBILE MECHANIC (Heavy Duty)				TUNE-UP SPECIALIST				TRANSMISSION SPECIALIST				AUTO AIR-CONDITIONING SPECIALIST				AUTOMOTIVE ELECTRICIAN				SMALL GAS ENGINE REPAIRMAN				[illegible]			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1.	Ability to read and understand written instructions.			✓					✓				✓		✓	✓					✓				✓				✓				✓																
2.	Can communicate well with fellow employees.			✓				✓					✓		✓					✓				✓							✓																		
3.	Can communicate well with his employer.			✓				✓																✓							✓																	
4.	Can communicate well with the customer.				✓			✓					✓		✓									✓							✓																		
5.	Must have mechanical insight and manipulative dexterity.			✓				✓					✓		✓					✓				✓							✓																		
6.	Neat, clean, attractive appearance.			✓				✓							✓																✓																		
7.	Expected to arrive for work and meetings on time.			✓					✓				✓			✓					✓				✓				✓				✓																
8.	Expected to refer to people by their proper name.				✓			✓				✓												✓				✓				✓				✓												
9.	Expected to know and use correct name for all tools.			✓				✓	✓				✓											✓	✓			✓	✓			✓																
10.	Must have good math background.			✓					✓			✓												✓				✓					✓															
11.	Able to handle personal problems without interference with his job.				✓				✓				✓																✓				✓															
12.	Must be honest and have a positive attitude toward work.				✓				✓																				✓				✓															
13.	Must be safety conscious and follow safety procedures.				✓				✓				✓				✓												✓				✓															

APPENDIX E

A list of members of the Validating Occupational Advisory Committee

OCCUPATIONAL ADVISORY COMMITTEE MEMBERS

State Area Vocational-Technical School - Athens

Richard Brakebill, Instructor

Gene Bradney, Service Manager
Hall Chev. Inc.
Cleveland, TN

Al Fain, Service Manager
McMinn County Motors
Athens, TN

Tommy Scruggs, Owner-Manager
Madisonville Motors
Madisonville, TN

Robert Woods, Service Manager
Woods - Henshaw Motors
Sweetwater, TN

Wayne Shell, Owner-Manager
S & K Auto Parts
Athens, TN

Bernard Burns, Mechanic
McMinn County Maintenance Dept.
Athens, TN

Dwight Hixon, Manager
Woods - Hixon Motors
Athens, TN

State Area Vocational-Technical School - Hartsville

Bobby Lundquist, Instructor

Chuck Waggner, Shop Forman
Smith County Motor Co.
Carthage, TN

Leon Cathrun, Owner
Cathrun Chevrolet Inc.
Lafayette, TN

Bill Rickman, Owner
Rickman Ford Sales
Hartsville, TN

Paul Porter, Manager
Porter Motors
Hartsville, TN

James Mundy
Cumberland Chevrolet
Carthage, TN

Bill Linville, Manager
Cunningham - Kelley Chev.
Hartsville, TN

State Area Vocational-Technical School - McKenzie

George Barksdale, Instructor

Willard Barksdale, Service Manager
Dillahunty Ford Co.
Huntingdon, TN

John Cobb, Service Manager
Vickers Motor Co.
Huntingdon, TN

Jimmy L. Copous, Service Manager
Russell Chev - Olds
McKenzie, TN

Justion B. Hammett, Service Manager
Wilders Chevrolet Co.
Huntingdon, TN

Cordon McFadden, Master Mechanic
McFadden Garage
Henry, TN

Robert Simmons, Service Manager
Tri-County Motors
McKenzie, TN

Grundy County High School

Paul Street, Instructor

Bruce Creeghton, President
Creeghton Chevrolet Co.
Tracy City, TN

Jimmy Campbell, Manager
Western Auto Supply
Tracy City, TN

Billy Griffin, Cons. Equipment Mechanic
Grundy Co. Highway Department
Tracy City, TN

James Street, Owner
Street Auto Parts
Tracy City, TN

McMinn County High School

James Anderson, Instructor

Al Fain, Service Manager
McMinn County Motors
Athens, TN

Wayne Shell, Owner-Manager
S & K Auto Parts
Athens, TN

Dwight Hixon, Manager
Woods-Hixon Motors
Athens, TN

James Thomas, Service Manager
Elder Chevrolet Company
Athens, TN

VITA

John H. Smith was born and reared in Newport, Tennessee. He attended Cocke County public schools and was graduated from Cocke County High School at Newport. After serving in the armed forces he enrolled at the University of Tennessee in the College of Engineering. On leaving the University in 1954, he was employed as an engineer at the Athens Plow Company in Athens, Tennessee where he worked until 1966 acquiring the position of Plant Engineer.

John returned to the University of Tennessee in 1966 after accepting a position as Assistant Superintendent with the State Area Vocational-Technical School at Athens, Tennessee.

He received his Bachelor of Science degree in Industrial Education in August 1970 and entered the Graduate School in June 1971 and received his Masters degree in August 1974.

He is married to the former Martha Jean Turner of Newport, Tennessee, and he has two daughters, Carolyn and Hershella.