

PACIFIC GAS AND ELECTRIC COMPANY

PGE + 245 MARKET STREET • SAN FRANCISCO, CALIFORNIA 94106 • (415) 781-4211 • TWX 910-372-6587

March 8, 1977

Local Union No. 1245
International Brotherhood of
Electrical Workers, AFL-CIO
P. O. Box 4790
Walnut Creek, California 94596

Attention: Mr. L. L. Mitchell, Business Manager

Gentlemen:

The Automotive and Equipment Department has completed the revision of the Apprentice Equipment Mechanic training program involving major changes in procedures, content, and text materials.

The Joint Apprenticeship Committee has met to review and discuss the new program and recommends its adoption.

Apprentices in the current program will complete their six-month assignment in the old program and be tested on that material. Upon meeting the Standards of Achievement for that step, they will begin the new training program at the appropriate step and continue the new program through to completion.

Company will study the feasibility of conducting centralized academic training in automotive electricity and hydraulics. Should this prove feasible, Company will include this in the new program.

The recommended changes to the program are attached and supersedes that material now in your possession.

If you are in accord with the foregoing and its attachment and agree thereto, please so indicate in the space provided below and return one executed copy of this letter to Company.

Yours very truly,

PACIFIC GAS AND ELECTRIC COMPANY

By *J. W. Roubright*
Manager of Industrial Relations

The Union is in accord with the foregoing and its attachment and it agrees thereto as of the date hereof.

LOCAL UNION NO. 1245, INTERNATIONAL
BROTHERHOOD OF ELECTRICAL WORKERS, AFL-CIO

By *L. L. Mitchell*
Business Manager

April 11, _____, 1977

(3/8/77)

REVISED PAGES - INSTRUCTORS MANUAL

SECTION 5

FORMS, RECORDS AND MATERIALS

The following list gives a description of the items you will need and where they may be obtained.

<u>DESCRIPTION</u>	<u>SOURCE</u>
1. One 3-1/2" letter size pocket file for each apprentice.	M&S CODE 62-1055
2. One Instructor's Manual (This manual)	M&S CODE 62-0330
3. One Apprentice Manual	M&S CODE 62-0329
4. One set, Supplementary Material	M&S CODE 62-0331
5. One cassette tape recorder	OBTAIN LOCALLY
6. One set, cassette tapes, Caterpillar challenge learning system. Order one of each of the following tapes:	
Power Train Principles Cassette Tapes - (TEG60C01-01)	M&S CODE 62-0326
Fundamentals of Hydraulics Cassette Tapes - (TEG60C60-00)	M&S CODE 62-0327
Diesel Engine Fundamentals Cassette Tapes - (TEG60C61-01)	M&S CODE 62-0328
7. One set, text books. Order one of each of the following books, manuals and workbooks:	
Allison Automatic Transmission Service Manual AT Series, SA 1241A	M&S CODE 62-0317
Allison Transmissions, MT-600 Series Service Manual, SA 1317A	M&S CODE 62-0318
MT Series Service Manual, SA 1126E	M&S CODE 62-0319
Vickers Mobile Hydraulics Manual, First Edition, M-2990 (or more current edition if available)	M&S CODE 62-0320

SECTION 5

FORMS, RECORDS AND MATERIALS (Continued)

DESCRIPTION

SOURCE

Automotive Electrical Equipment, Eighth Edition, William H. Crouse	M&S CODE 62-0321
Automotive Mechanics, Seventh Edition, William H. Crouse	M&S CODE 62-0322
Power Train Principles Workbook (TEG60B01-01)	M&S CODE 62-0323
Fundamentals of Hydraulics Workbook (TEG60B60-00)	M&S CODE 62-0324
Diesel Engine Fundamentals Workbook (TEG60B61-01)	M&S CODE 62-0325
8. A sufficient supply of the Academic Progress Chart form, and Task Performance Test forms.	General Office Automotive and Equipment Dept. Training Coordinator

In addition to the above listed items you must obtain the following items for each apprentice:

DESCRIPTION:

1. One Apprentice Manual	M&S CODE 62-0329
2. One set, Supplementary Material	M&S CODE 62-0331
3. One set, test books. Order one of each of the following books, manuals and workbooks:	
Allison Automatic Transmission Service Manual AT Series, SA 1241A	M&S CODE 62-0317
Allison Transmissions, MT-600 Series Service Manual, SA 1317A	M&S CODE 62-0318
MT Series Service Manual, SA 1126E	M&S CODE 62-0319
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SECTION 5

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Automotive Electric Equipment, Eighth Edition, William H. Crouse	M&S CODE 62-0321
Automotive Mechanics, Seventh Edition, William H. Crouse	M&S CODE 62-0322
Power Train Principles Workbook (TEG60B01-01)	M&S CODE 62-0323
Fundamentals of Hydraulics Workbook (TEG60B60-00)	M&S CODE 62-0324
Diesel Engine Fundamentals Workbook (TEG60B61-01)	M&S CODE 62-0325
4. A sufficient supply of 8-1/2 x 11 inch rules writing tablets	M&S CODE 62-1613

When a new apprentice starts the training program it will be your responsibility to contact the General Office Automotive and Equipment Department Training Coordinator and give him the following information:

Apprentice's full name

Apprentice's Social Security Number

Effective date of promotion to the Apprentice Classification

It will be necessary for you to maintain one file for each apprentice. A duplicate file will be maintained by the Division Transportation Superintendent or General Foreman if his office is not in the garage where the training is held. You will be responsible for providing him with the information on a monthly basis so that he may keep his file current. The file shall contain the Academic Progress Chart, and Task Performance Test Forms. In addition, the copy of the Primary Welding

SECTION 5

FORMS, RECORDS AND MATERIALS (Continued)

Performance Test must be kept in the file. Entries on the forms are not to be made by the apprentice. The file must be kept in a location accessible to the apprentice for his inspection. These records shall not be available to others, except Officials of the union.

REVISED PAGES - APPRENTICE MANUAL

PROGRAM ORGANIZATION

The Apprentice Equipment Mechanic Training Program is organized under the Master Apprenticeship Agreement. You should become familiar with the agreement and how it relates to your training activities. A copy is included at the back of this section.

The training program consists of 36 months of training divided into 6 time periods which coincide with the wage steps in the apprentice classification.

Academic Training Phase - There are approximately 21 academic training lessons in each six-month period. Each lesson will take approximately 4 hours to complete. It is intended that the first 2 hours be utilized to read and study the assignment. The remainder of the time is to be used for testing, grading and discussion.

Academic lessons are to be conducted weekly. Your instructor will designate a definite location, time and day of the week for your academic training. Deviations will be kept to a minimum. Any missed training must be made up as soon as possible. You will not be allowed to take the final exam for each six-month period until all of the required weekly lessons have been completed.

There are a total of 103 numbered lessons. They are to be completed according to the following sequence charts:

Note: To use the charts start at the bottom of each chart and work toward the top. All lessons in the bottom level must be completed before you can go on to the next higher level, and so on. You have the option of completing the lessons in each level in any order you choose unless they are enclosed in a box. The lessons in the boxes must be completed in the order indicated by the arrows.

MASTER APPRENTICESHIP AGREEMENT

This Master Apprenticeship Agreement shall be effective on March 1, 1969, the date of this Agreement, for the classifications shown below, and the provisions of this Agreement are applicable to any employee who enters or re-enters such apprentice classification on or after July 1, 1966:

Electric - Divisions Only

Apprentice Cable Splicer
 Apprentice Communication Technician
 Apprentice Control Technician
 Apprentice Electrical Machinist (Hydro)
 Apprentice Electrical Technician
 Apprentice Electrician
 Apprentice Instrument Repairman
 Apprentice Lineman
 Apprentice Machinist (Steam)
 Apprentice Meterman
 Apprentice Rigger (Steam)
 Apprentice Welder

Gas - Divisions Only

Apprentice Fitter
 Apprentice Measurement & Control
 Mechanic

Pipe Line Operations Department

Apprentice Gas Control Mechanic
 Apprentice Transmission Mechanic

General Services (Including General
 Construction Service Center - Davis
 and Pipe Line Operations)

Apprentice Equipment Mechanic

Material Control

Apprentice Electrician
 Apprentice Machinist

The training and progression of an employee who was regularly assigned to any of the above apprentice classifications on June 30, 1966, shall be governed by previous Agreements between Company and Union with respect to the classification to which he was assigned on that date.

Company and Union recognize that employees who entered or re-entered any of the above apprentice classifications between July 1, 1966, and the effective date of this Agreement received training and progression in classification without reference to the Standards of Achievement and other provisions of this Agreement. Such employees shall continue to be trained in the same manner, and Company shall strive to provide the full training contemplated by the agreed upon Standards of Achievement. If such training is timely in relation to the Standards of Achievement, the apprentice's progression within the classification or to journeyman shall be subject to the provisions of this Agreement. If such training is not given or is not timely in relation to the Standards of Achievement, his progression within the apprentice classification shall not be delayed. However, the progression of such apprentice to journeyman as provided in this Agreement may be delayed under the provisions of Section 205.11 of the Agreement based on standards which relate to the training that he has received and the job definition.

It is the policy of Company and Union not to discriminate against any employee because of race, creed, sex, age, color or national origin.

A - QUALIFICATION TESTS FOR APPRENTICE CLASSIFICATIONS

1. An employee entering an apprentice classification will receive comprehensive formalized training in conjunction with his work as an apprentice. To insure that a candidate for an apprentice classification possesses the necessary capabilities to progress through the program, an employee shall not be entitled to consideration for appointment to fill a job vacancy in an apprentice classification unless he has first received passing score of 75 percent on the mutually agreed upon Arithmetic Computation Test (ACT). No credit will be given for any problem that is not completely correct.
2. An employee who desires to qualify for an apprenticeship, or who, after prebidding to an apprentice classification, receives notification regarding testing programs which must be completed, shall apply in writing to his Personnel Department that he desires to be tested. Notation in the applicable section of the prebid shall also serve this purpose.
3. The Arithmetic Computation Test has been prepared in four forms for test purposes and one additional form for refresher purposes. When a prospective apprentice notifies his Personnel Department that he desires to be tested, he will be furnished a copy of the refresher test and a copy of the same test with the correct procedures and answers indicated. This will enable him to determine what review will be necessary to attain a passing score on the formal test.
4. He shall be allowed a reasonable length of time for such review, and the examination date shall be established by his Personnel Department.
5. An employee who has failed, on his first attempt, to receive at least the minimum passing score on the ACT will be eligible to be retested on such test in the following manner:
 - 2nd Testing - Three (3) months, or thereafter, following the date of the first testing.
 - 3rd Testing - Six (6) months, or thereafter, following the date of the second testing.
 - 4th Testing - Six (6) months, or thereafter, following the date of the third testing provided that he is able to show satisfactory evidence that he has prepared himself to pass the test.
6. An employee who fails will be advised when he will be eligible for retest. When again eligible, such employee shall request his Personnel Department to be retested, and his retest shall be scheduled within 14 days of his request.
7. Company will not be required to give further consideration to the appointment of an employee to fill a job vacancy in an apprentice classification when he has failed for the fourth time to meet the ACT requirement.
8. The above qualification tests may be revised or additional requirements may be established by written agreement between Company and Union. Additional requirements previously established under the provisions of Section 205.11 of the Agreement shall continue to be applicable.

B - TESTING AND QUALIFYING PROCEDURE

1. In Prebidding:

- a. An employee who submits a prebid to fill a job vacancy in an apprentice classification under the provisions of Section 205.4 may indicate on such prebid form that he is then prepared and desires to take the required test or retest to qualify for the apprentice classification. His Personnel Department will arrange such test or retest based on the schedule outlined in Section A of this Agreement.
- b. If such employee who prebids is not eligible to be tested on or before the date of a job award, even though his prebid is timely, he shall be deemed not qualified for consideration under the provisions of Section 205.11 of the Agreement.
- c. If such employee who prebids is eligible to be tested on or before the date of a job award, his prebid is timely and he is the otherwise successful bidder, he shall be offered an opportunity to pass such test prior to the job award. If he passes the test, he shall have his prebid considered in filling the job vacancy. If he declines the test or fails to pass the test, he shall be deemed not qualified for consideration under the provisions of Section 205.11 of the Agreement.
- d. He shall be deemed not qualified under the provisions of Section 205.11 with respect to other job vacancies where the test is a requirement until he requests and is eligible for a retest.

2. In Postbidding:

- a. In order that an employee's postbid to fill a job vacancy in an apprentice classification be considered under the provisions of Title 205, he must have made a written request by U.S. mail to his Personnel Department to be tested. Such request must be postmarked not less than 8 calendar days before the posting of the job vacancy under the provisions of Subsection 205.6(a) of the Agreement.
- b. If such written request was postmarked not less than 8 calendar days before the posting of a job vacancy and the employee is eligible for test or retest on or prior to the 10th of the month following posting of the job vacancy, he shall be offered an opportunity to pass the test on or prior to the 10th of such month. If he passes the test, his postbid shall be considered in filling the posted job vacancy. If he declines the test or fails to pass the test, he shall be deemed not qualified for such job under the provisions of Section 205.11 of the Agreement.

3. Other:

An employee who has previously attempted but failed to meet the testing requirement and who again desires to meet the testing requirement must make written request by U.S. mail to his Personnel Department. If such request was

timely with respect to the procedures outlined in Paragraphs 1 and 2 above, it shall cause his previous rebids or subsequent postbids to be considered as active and valid. In such instances, the procedures outlined in Paragraphs 1 and 2 above shall be followed. If such request is not timely, the same testing procedure will be followed, except his previous rebids or subsequent postbids will not be considered as active.

4. Tests will be administered during regular work hours and corrected under the direction of the Division Personnel Departments.

5. An employee who is tested will be notified in writing within 7 calendar days of the results by his Personnel Department. Within 7 calendar days of such notice, an employee may request an interview with a representative of the Division Personnel Department for the purpose of discussing the areas of weakness indicated by his failure.

C - AGE

(Deleted by signed letter agreement
dated February 25, 1977.)

D - JOURNEYMAN BIDS

A bid made by a journeyman to fill a job vacancy in an apprentice classification of his own normal Line of Progression shall neither receive preferential consideration under the provisions of Subsections 205.7 (b), (c) or (d) nor 205.8 (b), (c) or (d) of the Agreement.

E - EXEMPTIONS FROM QUALIFICATION TESTS

1. An employee who was formerly classified as an apprentice or was in a classification higher thereto in the Line of Progression, and who was demoted therefrom under the provisions of Title 206 to a classification below the apprentice classification for a reason or reasons which can be corrected in an apprenticeship training program, will be required to satisfy the Qualification Tests for Apprentice Classifications if he had not previously done so in order to be reappointed to his former classification or to any intermediate classification in the Line of Progression. However, such reappointment shall continue to be subject to the provisions of Title 205 of the Agreement.

2. An employee who was formerly classified as an apprentice or was in a classification higher thereto in the Line of Progression, and who was demoted therefrom under the provisions of Title 206 to a classification below the apprentice classification for a reason or reasons which cannot be corrected in an apprenticeship training program, will not be required to satisfy the Qualification Tests for Apprentice Classifications in order to be reappointed to his former classification or to any intermediate classification in the Line of Progression. However, such reappointment shall continue to be subject to the provisions of Title 205 of the Agreement.

3. An employee who was formerly classified as an apprentice or was in a classification higher hereto in the Line of Progression and who voluntarily removed himself from such classification and was placed in a classification below the apprentice classification will not be required to satisfy the Qualification Tests for Apprentice Classifications in order to be reappointed to his former classification or to any intermediate classification in the Line of Progression.

F - APPOINTMENTS TO FILL TEMPORARY VACANCIES

Temporary appointments to an apprentice classification will not be made.

G - TRAINING OF APPRENTICES

1. The Apprenticeship Committee shall recommend guidelines for each of the apprentice training programs which shall outline the schedule and manner of training and shall serve as the Standards of Achievement for the various levels of the wage rate progression. Such Standards of Achievement, upon written agreement between Company and Union, shall be made part of this Agreement to be effective on the same date as this Agreement. The Apprenticeship Committee may also recommend revisions to the Standards of Achievement as necessary, and such revisions shall be effective as agreed by Company and Union.

2. An employee in an apprentice classification may be assigned to work alone as part of his training and experience. Such assignments shall be limited to work processes on which he has received prior instruction and training, and such assignments shall be for the purpose of developing and demonstrating proficiency. It is not intended such assignments be made merely to avoid use of a journeyman.

3. An apprentice who has spent six months at his current wage step and who meets or exceeds the established Standards of Achievement for such wage step shall be advanced to the next higher wage step of the progression rate.

4. An apprentice who is due to progress to his next higher wage step in the wage progression, and who does not meet the established Standards of Achievement shall:

- a. be notified of his inadequate performance in writing prior to the date he is scheduled to receive the next higher wage step,
- b. be held in his present wage step, and
- c. be allowed a maximum of three months to meet the established Standards of Achievement for the wage step at which he is being held.
- d. A copy of the written notification shall be furnished to the Union Business Representative.

5. If, during such three-month period, the employee meets the established Standards of Achievement, he shall receive the next higher step wage rate effective the date such Standards are met. He will not be eligible for further progression in the wage rate until six months have elapsed since the date he received such wage increase and until Standards of Achievement for such wage step have been met.

6. a. If an employee who is attempting to meet the Standards of Achievement established to progress from the first to the second step of the wage progression fails to meet the established Standards as provided above, he shall, after such three months' additional period of time, be removed from the classification and demoted in accordance with Title 206 of the Agreement.

b. If an employee who is attempting to meet the Standards of Achievement established to progress from other than the first step of the wage progression fails to meet the established Standards within the allotted time (including the three months' extension), his progression shall be reviewed by a subcommittee consisting of one Company and one Union member of the Apprenticeship Committee. Action of this subcommittee shall be limited to the determination of the further extension of time which is believed to be required to meet the Standards of Achievement. If an additional extension is granted and he still fails to meet the prescribed Standards of Achievement to receive his next wage step in the wage progression in the period of time determined by the above subcommittee, he shall be removed from the classification and demoted in accordance with Title 206 of the Agreement.

7. An employee within one year of demotion from an apprentice classification under the provisions of Paragraph 6 above, upon presentation of acceptable evidence that he has remedied the deficiencies which caused his demotion or, if demotion was due to academic failure, that he has pursued an outside study program and by completing the required tests meets the established Standards of Achievement for the wage step in the apprenticeship that he left, shall be permitted to bid again to fill a job vacancy in such apprentice classification under the provisions of Subsection 205.7(a). If he is the successful bidder, he shall be restored to the training program at the wage step he left and he will progress to the next higher wage step six months after he re-entered the apprentice classification.

8. An employee beyond one year of such demotion from an apprentice classification shall not be entitled to receive consideration in bidding to re-enter the apprentice classification. However, upon acceptance by Company that he is qualified and desires to progress, Company may grant him consideration under the provisions of Subsection 205.7(b) to re-enter the apprentice classification. If he is the successful bidder, he shall be placed at a wage step not higher than the wage step he left. He will be progressed from such wage step not sooner than six months after he re-entered the apprentice classification and after he meets the established Standards of Achievement for such wage step.

9. An employee who has voluntarily removed himself from an apprentice classification or a classification higher thereto in the Line of Progression, or an employee who was demoted for reasons other than failure to meet the Standards of Achievement and who is the successful bidder to return to a vacancy in the same apprentice classification shall be placed by Company in the wage step of the apprentice classification or as an unassigned journeyman commensurate with his current knowledge, skill, efficiency, adaptability and physical ability. Company shall notify Union's Business Representative of any such placement.

10. An employee who is the successful bidder to fill a vacancy in an apprentice classification, except an employee who is re-entering an apprentice classification as covered in Paragraphs 7, 8 and 9 above, will be placed in the wage rates of the apprentice classification as follows:

- a. If, on December 10, 1966, he had attained regular status and was regularly assigned to a classification at a wage rate equal to or greater than the beginning wage rate of the apprentice classification which he is entering, he shall continue to receive his current wage rate (plus any general wage increase thereafter applicable) although such wage rate does not match a wage rate in the steps of such apprentice classification to which he is appointed. If, however, his current wage rate is higher than the top wage rate of such apprentice classification, he shall be placed at the top wage rate thereof. Following such placement, he shall be enrolled in the apprentice training program and shall be paid at such wage rate until successful completion of Standards of Achievement qualify him for consideration for the next higher wage step, if any, in such apprentice classification wage progression. The successful completion of the Standards of Achievement for his next wage step must occur during the period of time normally allowed an employee who entered such apprentice classification at the beginning wage rate to achieve the same wage step.
- b. If, after December 10, 1966, he is regularly assigned to a classification from which he is subsequently appointed to an apprentice classification, he shall be placed at the beginning wage rate in such apprentice classification. Based on his current knowledge, skill, efficiency, adaptability and physical ability which relate directly to prior performance of journeyman duties and which supplant need for training in the apprenticeship, he may be placed in a wage step above the beginning rate. Since such a placement will alter the negotiated length of the apprenticeship training period, Company and Union agreement is required.

11. An employee is entitled to two opportunities to participate in (an) apprenticeship training program(s). His or her subsequent bid to fill a job vacancy in an apprentice classification will not receive consideration under the provisions of Title 205. However, an apprentice who suffers a disability which precludes his or her return to that same apprenticeship shall be given one additional opportunity to participate in an apprenticeship provided his or her previous disability would not prohibit such participation.

All cases shall be referred to the Apprenticeship Committee for review before placement is made.

H - STATUS OF APPRENTICES

An employee in an apprentice classification shall have his bid to fill job vacancies in his own classification considered in the normal application of Subsection 205.7(b) or (c). However, if as a result of such bid, an apprentice changes headquarters, his subsequent bids to fill job vacancies in his own classification shall be rejected.

I - PROMOTION OF APPRENTICES

1. An apprentice who successfully meets all specified Standards of Achievement for the classification will be promoted to the journeyman classification effective on the day he meets such Standards or on the day he completes six months at the top wage rate of the classification, whichever occurs later. He shall then be considered as an unassigned journeyman at his regular headquarters until such time that he is assigned to fill a regular job vacancy as a result of his bid under Section 205.7 or as a result of the application of Paragraph J below.

2. An apprentice who has received promotion to unassigned journeyman status shall be considered as a full journeyman in the assignment of duties and work schedules. He shall remain at his training headquarters until he is assigned to fill a regular journeyman job vacancy as a result of his bid under Section 205.7 or as a result of the application of Paragraph J below. Such regular job vacancy to which he may be assigned without bidding shall be at his training headquarters or at a headquarters which is within a reasonable commute distance of his training headquarters. Prior to application of this Master Apprenticeship Agreement to an apprentice classification, Company and Union shall reach written agreement which shall designate locations that are considered as being within reasonable commute distance of the various training headquarters. Upon written agreement, Company and Union may revise such designations as necessary.

J - FILLING JOURNEYMAN VACANCIES

1. It is Company's intent to continue to fill vacancies which occur in regularly established journeyman positions in accordance with Company needs. If such a journeyman position is abolished or downgraded, Company will continue to review the reasons with Union upon its request. Company's decisions with respect to manning and classification requirements shall be final.

2. A regular job vacancy which is to be filled in a journeyman classification shall be filled in the normal application of Subsection 205.7(a) or (b).

3. If the job vacancy is not filled under Paragraph J2 above, Company shall, in the order of their employment dates, fill the job vacancy from among those unassigned journeymen located at the headquarters where the job vacancy exists.

4. If the job vacancy is not filled under Paragraph J2 or J3 above, Company shall post the job vacancy and fill it in accordance with Section 205.7.

5. If the job vacancy is not filled under Paragraphs J2, J3 or J4 above, Company shall, in the reverse order of their employment dates, fill the job vacancy from unassigned journeymen at the training headquarters designated to supply journeymen to the location where the job vacancy occurs.

6. No reimbursement shall be made by Company for expenses incurred by an employee in connection with a transfer which is made as a result of the application of the provisions of this Paragraph J.

K - GENERAL

1. Should a grievance arise concerning the administration of any portion of this agreement, it shall be determined by the procedure established under the provisions of Section 102.8 of the Agreement; however,

2. If the grievance pertains to:

- a. the fairness of administration or correction of a test required in the Qualification Tests for Apprentice Classifications or as a Standard of Achievement in an apprenticeship training program, or
- b. the attainment of a Standard of Achievement in an apprenticeship training program which does not involve a test as such,

the Local Investigating Committee, prior to its decision, and as part of its deliberations, may refer such grievance to the Apprenticeship Committee for its recommendation.

3. This Master Apprenticeship Agreement shall be in effect for the current term of the Agreement and may be amended during such term by written agreement between Company and Union.

17. Troubleshoot front-end alignment problems by observing tire wear patterns.
18. Explain the tire rating system.
19. Repair tires.
20. Perform those portions of an A-2 inspection related to suspension, steering, hydraulic brakes, wheels and tires.
21. List the steps in performing a complete engine tuneup.
22. Name, identify, and give the purpose of each of the major component parts of the heating and air conditioning systems.
23. Explain how the heating and air conditioning systems operate.
24. Troubleshoot and repair the heating and air conditioning systems.
- 25. Name, identify, and give the purpose of each of the emission control and safety devices (example: seat belt warning systems, air bags, etc.).
26. Explain how each of the emission control and safety devices operates.
27. Troubleshoot and repair the emission control and safety devices.
28. Perform those portions of an A-2 inspection related to the heating and air conditioning systems and emission control and safety devices.
29. Define grounded circuit, short circuit, Ohm's law, amperes, ohms, volts, magnetism, permeability and other prescribed terms related to the principles of electricity.
30. Name, identify and give the purpose of each of the component parts of the battery and starting motor.
31. Explain how the starter motor operates and how the battery stores electricity.
32. Troubleshoot and repair the battery and starting system.
33. Perform those portions of an A-2 inspection related to the battery and charging system.

13-18 Months - You must be able to:

1. Name, identify, and give the purpose of each component part of the charging and ignition systems.
2. Explain how the charging and ignition systems operate.
3. Troubleshoot and repair the ignition, charging and lighting systems.
4. Perform those portions of an A-2 inspection related to the ignition, charging and lighting systems including aiming headlights.
- 5. Perform an engine tuneup.
6. Name, identify, and give the purpose of each of the major component parts of the Allison Model AT 540, MT 640, 650, 30, 40 and 42 transmissions.
7. Explain the basic differences between each model of Allison transmission.
8. Explain in general terms how each of the Allison models operates.
9. Troubleshoot and make minor repairs to the Allison transmissions.
10. Perform those portions of an A-2 inspection related to Allison transmissions.

Tenth Day

I. Welding Practice

- A. On daily assignments that trainee has not successfully completed.

II. Welding Qualification Test

Trainees will be required to pass the following qualification test. This test will be given at the conclusion of the primary shop training. The test will consist of the following:

A. Position butt weld on 3/4" pipe

Maximum time allowance - 8 minutes. Test: Bend the 3/4" pipe on weld. To be acceptable the weld must show no breaks or cracks after bending to 90° angle.

B. Position butt weld on 1-1/4" pipe

Maximum time allowance - 10 minutes. Test: Four coupons shall be cut from the weld, one from the top, one from the bottom, and one from each side. Each should be 1-1/4" in width. All four coupons shall be subjected to the root bend test. If, as a result of this test, a crack develops in the weld or between the weld and the base metal more than 1/8" long in any direction, this shall be cause for rejection. Cracks occurring on the corner of the specimen during testing shall not be considered. If no more than one coupon is rejected, the weld is to be considered acceptable.

C. Position butt weld on 2" pipe

Maximum time allowance - 15 minutes. Test: Same as specified under "B".

D. Vertical position fillet weld on 10-gauge plate.

Maximum time allowance - 12 minutes. Test: bend upright plate against the joint approximately 90°. Weld must show good root penetration and uniform fusion.

APPRENTICE EQUIPMENT MECHANIC TRAINING PROGRAM

Welding Qualification Test

Division _____ Date _____

A. Position Butt Weld—3/4" Pipe Passed/Failed _____
 Time Started _____ Time Finished _____ Time _____
 Remarks: _____

B. Position Butt Weld—1-1/4" Pipe Passed/Failed _____
 Time Started _____ Time Finished _____ Time _____

TYPE TEST ROOT BEND	PENETRATION	FUSION	POROSITY	SLAG INCLUSION	REMARKS	TEST RESULTS PASSED/FAILED
Top						
Side						
Side						
Bottom						

C. Position Butt Weld—2" Pipe Passed/Failed _____
 Time Started _____ Time Finished _____ Time _____

TYPE TEST ROOT BEND	PENETRATION	FUSION	POROSITY	SLAG INCLUSION	REMARKS	TEST RESULTS PASSED/FAILED
Top						
Side						
Side						
Bottom						

D. Vertical Position Filet Weld—10 gauge Plate Passed/Failed _____
 Time started _____ Time Finished _____ Time _____
 Remarks: _____

KEY: Use following in Penetration, Fusion, Porosity and Slag Inclusion columns, if bend test is failed.

E=Excellent G=Good B=Barely Satisfactory U=Unsatisfactory

Use following in Remarks column, as applicable.

- | | |
|--------------------------------|-----------------------------------|
| 1=Undercutting | 4=Insufficient Weld Reinforcement |
| 2=Overlapping | 5=Excessively Deep Wash Lines |
| 3=Excessive Weld Reinforcement | 6=Burn Through |

Maximum Time Allowance For Test Welds At Conclusion of Primary Shop Training
 3/4"—8 Min. 1-1/4"—10 Min. 2"—15 Min. Vertical Filet Weld—12 Min.

TEST INSPECTOR