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APPRENTICESHIP AND TRAINING STANDARDS FOR TRUCK MECHANICS, A GUIDE FOR THE AMERICAN TRUCKING INDUSTRY.

MANPOWER ADMINISTRATION (DOL), WASHINGTON, D.C.

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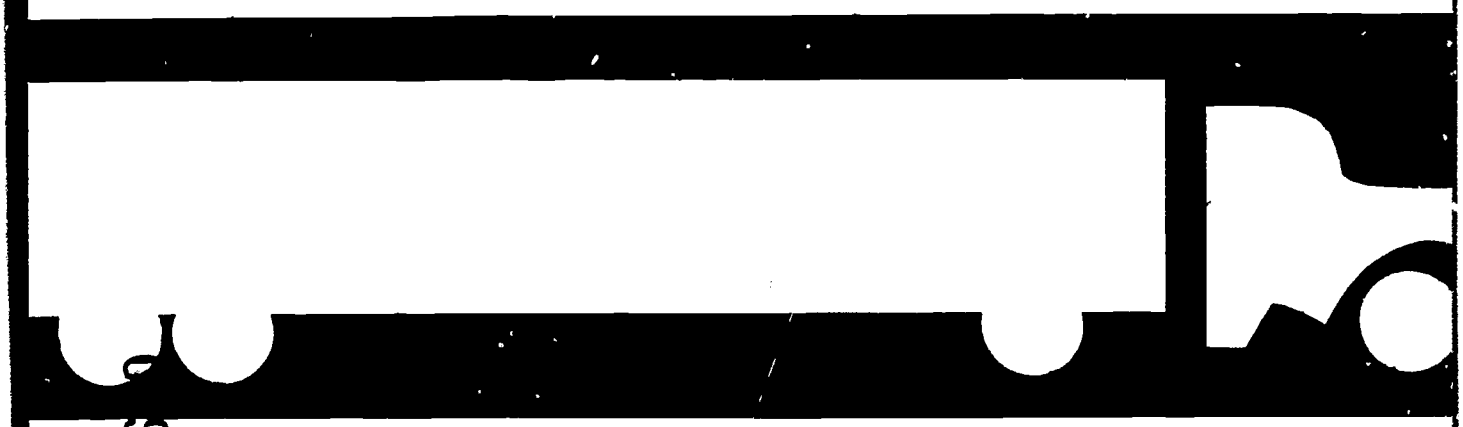
DESCRIPTORS- *APPRENTICESHIPS, *STANDARDS, *AUTO MECHANICS (OCCUPATION), *PROGRAM GUIDES, TRADE AND INDUSTRIAL EDUCATION, NATIONAL PROGRAMS,

TECHNOLOGICAL CHANGES, THE CONTINUED GROWTH OF THE TRUCKING INDUSTRY, AND A PERSISTENT SHORTAGE OF SKILLED MECHANICS HAS MADE IT NECESSARY FOR THE INDUSTRY TO HAVE A MORE DETAILED AND PLANNED TRAINING PROGRAM TO MAINTAIN EFFICIENCY AND QUALITY. THESE STANDARDS ARE INTENDED TO GOVERN THE EMPLOYMENT AND TRAINING OF APPRENTICES IN THE RESPECTIVE BRANCHES OF THE TRUCKING INDUSTRY. LOCAL APPLICATION IN STATES HAVING STATE APPRENTICESHIP AGENCIES MAY REQUIRE ADAPTATION TO MEET THE STANDARDS OF APPRENTICESHIP IN SUCH STATES. THE STANDARDS PROVIDE SAMPLE WORK PROCESSES FOR 8,000-HOUR ON-THE-JOB TRAINING PROGRAMS FOR TRUCK MECHANICS, TRUCK MECHANICS (HEAVY-DUTY-EQUIPMENT MECHANIC), TRUCK AND TRAILER BODY MECHANICS, AND TRUCK MECHANICS-DIESEL, AND A 6,000-HOUR PROGRAM FOR TRUCK MECHANICS-PAINTER. EACH PROGRAM REQUIRES A MINIMUM OF 144 HOURS OF RELATED INSTRUCTION FOR EACH YEAR OF TRAINING. ALL APPRENTICES EMPLOYED IN ACCORDANCE WITH THESE STANDARDS ARE SUBJECT TO A PROBATIONARY PERIOD FOR THE FIRST 500 HOURS OF EMPLOYMENT. THE RATIO OF NO MORE THAN ONE APPRENTICE TO THREE JOURNEYMEN IS RECOMMENDED TO ASSURE PROPER SUPERVISION AND TRAINING. SOME OF THE OTHER STANDARDS COVER QUALIFICATIONS AND SELECTION FOR APPRENTICESHIP, CREDIT FOR PREVIOUS EXPERIENCE, HOURS OF WORK, APPRENTICESHIP AGREEMENT, SUPERVISION, CERTIFICATE OF COMPLETION, AND OFFICIAL PROGRAM APPROVAL. SAMPLE FORMS ARE PROVIDED FOR USE IN ESTABLISHING AN APPRENTICESHIP RECORDKEEPING SYSTEM. (HC)

1965 Edition

APPRENTICESHIP AND TRAINING STANDARDS

FOR TRUCK MECHANICS



A GUIDE for the American Trucking Industry

U.S. DEPARTMENT OF LABOR
W. Willard Wirtz, Secretary
MANPOWER ADMINISTRATION
Bureau of Apprenticeship and Training

Certificate of Registration

THE AMERICAN TRUCKING ASSOCIATIONS, INCORPORATED
APPRENTICESHIP AND TRAINING POLICY

Washington, D. C.

for the trade classifications of TRUCK MECHANIC and TRUCK-and-TRAILER BODY MECHANIC

Issued in recognition of the above apprenticeship system, registered as part of the National Apprenticeship Program, in accordance with the fundamentals recommended by the

FEDERAL COMMITTEE ON APPRENTICESHIP

Date July 22, 1964

Registry No. 83695

W. Willard Wirtz
Secretary of Labor

Edw. E. Goshew
Administrator, Bureau of Apprenticeship and Training

U.S. DEPARTMENT OF LABOR
BUREAU OF APPRENTICESHIP AND TRAINING
WASHINGTON, D.C. 20210

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

July 22, 1964

The American Trucking Associations, Inc.

Gentlemen:

It gives me great pleasure to inform you of the Registration of the National Apprenticeship and Training Standards for the American trucking industry with the Bureau of Apprenticeship and Training, U.S. Department of Labor.

You are to be commended for providing a uniform pattern of apprenticeship standards as a guide for local employers in the industry.

The active interest and cooperative efforts of your local groups will undoubtedly reflect the extent to which success is achieved in producing the high calibre craftsmen so essential to your industry.

The assistance of the staff of the Bureau of Apprenticeship and Training and its cooperating State apprenticeship agencies are available to help in attaining the goals established in your National Standards.

Sincerely yours,

Edw. E. Goshen

Edw. E. Goshen *
Administrator

* Mr. Goshen retired from Government service August 3, 1964.

JOHN M. AKERS
President

AMERICAN TRUCKING

ASSOCIATIONS, INC.

1616 P STREET, N.W. WASHINGTON, D. C. 20036

DUPONT 7-3200

September 1964

To: Trucking Industry Executives

The past few decades have witnessed a vast expansion in the use of the motor truck to transport the nation's goods. If this growth is to continue, a concomitant increase of trained personnel is required. Accordingly, the American Trucking Asscciations has embarked on a program for the training of skilled truck mechanics.

That program is embodied in this national guide containing recommended standards for the apprentice training of truck mechanics. We of ATA believe this program will assure that our valuable motor truck equipment will continue to be maintained at a high peak of safety and efficiency.

I would urge all truck operators to use this program as a constructive opportunity for the development of their fleet maintenance personnel.

Jno. M. Akers

John M. Akers, President

A NATIONAL FEDERATION HAVING AN AFFILIATED ASSOCIATION IN EACH STATE

TABLE OF CONTENTS

ADDENDA

INTRODUCTION

Due to technological changes and the continued growth of the trucking industry, a persistent shortage of skilled mechanics has made it necessary for the industry to have a more detailed and planned training program to maintain efficiency and quality.

Set forth is a plan of training, based on the knowledge and experience of the industry, whereby all who participate will be taught, with the best resources available, the skills necessary to become skilled mechanics.

POLICY

It shall be the policy under these apprenticeship standards that all apprentices shall be employed and trained in accordance with the terms and conditions as set forth in these standards.

Local application of these standards in States having apprenticeship councils may require adaptations to meet the standards of apprenticeship in such States. The staff of the Bureau of Apprenticeship and Training or State apprenticeship agency is available to advise on such State requirements.

PROVISIONS OF STANDARDS GOVERNING THE EMPLOYMENT AND TRAINING OF APPRENTICES IN THE RESPECTIVE BRANCHES OF THE TRUCKING INDUSTRY [1]

1. Definitions

"Employer" shall mean the company by whom the apprentice is employed.

"Agreement" means the written apprenticeship agreement between the apprentice and the employer, in which the conditions of the apprenticeship shall be set forth. (See Addendum No. 5 for sample Agreement.)

"Apprentice" means a person at least 18 years of age who is engaged in learning one of the trades as outlined in these standards and who is covered by a written apprenticeship agreement with the employer.

"Standards" means this entire document.

"Registration Agency" means the Bureau of Apprenticeship and Training, U.S. Department of Labor, or if applicable, a State apprenticeship agency recognized by the Bureau of Apprenticeship and Training, U.S. Department of Labor.

2. Qualifications and Selection for Apprenticeship

It is recommended that the employer establish proper standards and procedures under which the selection of apprentices shall be made from qualified applicants on the basis of qualifications alone, without regard to race, creed, color, sex, national origin, or occupationally physical handicaps, under objective standards which permit review after full and fair opportunity for application.

It is also recommended to the employer that the program be operated on a completely nondiscriminatory basis.

Applicants for apprenticeship must be at least 18 years of age and not over 30 years of age. Exceptions may be made for those who are or have been engaged in the trade, because of unusual circumstances, or unusual conditions as determined by the employer, and for veterans.

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[1] Local application of this national guide in States having State apprenticeship agencies may require adaptation to meet the standards of apprenticeship in such States. The staffs of the Bureau of Apprenticeship and Training and State apprenticeship agencies are available to advise on such standards.

It is recommended to the employer that proper standards and procedures for selecting qualified applicants for apprenticeship be developed.

It is recommended to the employers that they use application forms, aptitude tests, oral interviews, school grades, and previous work records as essential tools in the selection process. When properly used they provide some degree of assurance that the apprentices possess the qualities necessary to succeed in the trade. (See Addendum No. 3 for sample Rating Form.)

3. Term of Apprenticeship

The term of apprenticeship shall be not less than the time defined in the schedule of work processes for the trade listed.

"Overtime" shall be credited on the term of apprenticeship on the basis of actual hours worked.

When the apprentice has had previous experience in the trade, the employer may evaluate such experience and recommend credit toward the completion of apprenticeship.

4. Probationary Period

All apprentices employed in accordance with these standards shall be subject to a probationary period for the first 500 hours of employment. The employer may extend this period for good and sufficient cause.

During the probationary period, the agreement may be cancelled at the request of either party by notifying the other. After completion of the probationary period, the agreement may be cancelled by either party for adequate cause. The registration agency shall be notified of all cancellations.

During the probationary period, the employer shall determine the necessary hand tools that the apprentice needs and shall make appropriate arrangements on the manner in which these tools shall be purchased.

5. Work Processes

During his apprenticeship, the apprentice shall receive such instruction and experience in all branches of the trade as is necessary to develop a practical and skilled mechanic versed in the theory and practice of the chosen branch of the trade. He shall also perform such other duties in the shop and on the job as are commonly related to such an apprenticeship. (See Addendum No. 1 for sample work processes.)

6. Wages

During his term of apprenticeship, the apprentice shall receive a progressively increasing schedule of wages.

Recommended pattern increase:

Hours	*Percent of mechanic rate*
1st 500	45
2d 500	50
2d 1,000	55
3d 1,000	60
4th 1,000	65
5th 1,000	70
6th 1,000	75
7th 1,000	80
8th 1,000	90
After completion of apprenticeship—Mechanic rate	

7. Credit

Apprentices who have been awarded credit for previous experience shall be paid, upon entrance, the wage rate for the period to which such credit advances them.

8. Hours of Work for Apprentices

The work day and work week for apprentices and conditions associated therewith shall be the same as that of the mechanic in the trade.

9. Related Instruction

A. In compliance with these standards of apprenticeship, each apprentice indentured under these standards shall enroll in and regularly attend approved classes of related instruction for at least 144 hours per year, each year of the apprenticeship. The time spent in such classes (not to exceed 600 hours) shall be credited to the apprenticeship, but such time shall not be considered as hours of work unless the apprentice is required to attend classes during his regular working hours, except as otherwise provided by State law.

B. In case of failure, without good cause, on the part of the apprentice to fulfill his obligations as to class attendance, the employer may suspend or revoke the agreement. The employer shall notify the registration agency of such suspension or revocation.

C. During the term of apprenticeship, the apprentice will receive instruction on the practices of safety.

D. In the event there are no class facilities available, the apprentices shall be required to enroll in a recognized correspondence course approved by the employer. In that event, appropriate credit toward completion of apprenticeship for courses completed through correspondence shall be given by the employer.

761-425 O—65——2

10. Examination

The employer shall examine the work and class records of apprentices before each period of advancement, or at such other times as may be determined, giving consideration to class attendance, progress in class and on the job, and such other items as are indicative of the apprentices' development.

11. Ratio

No more apprentices will be trained than can be absorbed upon successful completion of apprenticeship.

In order to assure proper supervision and training, it is recommended that a ratio of no more than one (1) apprentice to three (3) journeymen be used as a basis for the establishment of a ratio.

12. Apprenticeship Agreement

The apprentice and his parent or guardian (when he is a minor) shall sign an agreement which shall also be signed by the employer. Each agreement entered into under these standards shall contain a provision making the terms and conditions of the standards a part thereof. For this reason, the apprentice, his parent or guardian, and the employer shall be given an opportunity to read the standards.

The following shall receive copies of the apprenticeship agreement:

a. The apprentice.
b. The employer.
c. The registration agency.

Blank agreements will be furnished to the employer by the Bureau of Apprenticeship and Training, U.S. Department of Labor or by the appropriate State registration agency. Some State apprenticeship agencies require the use of their own apprenticeship agreement forms. In such instances, the agreement forms may be obtained from the staff of the State apprenticeship agency or the Bureau of Apprenticeship and Training.

13. Supervision

The employer shall designate a particular person in the shop as the "supervisor of apprentices." He shall be responsible for carrying out the training program as set up by these standards in his shop. Adequate records pertaining to the work experience and related instruction of the apprentice shall be kept by the supervisor of apprentices, and at regular intervals he shall submit reports to the employer. (See Addendum No. 2 for sample records.)

14. Certificate of Completion of Apprenticeship

Upon successful completion of the apprenticeship under these standards, the employer shall recommend to the registration agency that the apprentice be issued a Certificate of Completion of Apprentice-

ship and shall attach its signature thereon. (See Addendum No. 4 for sample Certificate of Completion of Apprenticeship.)

15. Official Approval

Before becoming operative, these standards must have the official approval of the employer and be registered with the registration agency.

16. Amendment to Standards

These standards may be amended at any time by action of the employer. Such amendment(s) shall not alter apprenticeship agreements in effect at the time of the change without the express consent of both parties to such agreement. The registration agency shall be notified of all amendments to these standards.

OFFICIAL APPROVAL

THE AMERICAN TRUCKING ASSOCIATIONS, INC.
Name of Company

1616 P Street, N. W., Washington, D. C.

By: Jno. M. Akers

Title: President

Date: July 22, 1964

REGISTERED AS INCORPORATING THE BASIC STANDARDS OF APPRENTICESHIP:

By: Edw. E. Goshen

Title: Administrator

Date: July 22, 1964

Registration Number: 83695

TRUCK MECHANIC

(Sample 1)

Work Processes	*Approximate Hours*
I. *Cleaning and Inspecting the Parts of all Types of Equipment*	500
II. *Cylinder Heads*	750
a. Checking and inspecting heads.	
b. Replacing valve guides.	
c. Removing and replacing valve seats.	
d. Reaming valve guides.	
e. Grinding valve seats with hand seat grinder.	
f. Lapping valves.	
g. Checking valves with dial indicator.	
h. Installing injector tubes or brass.	
i. Replacing welch plugs and water test head.	
j. Rebushing rocker arms and reaming bushings.	
k. Checking and replacing rocker arm rollers.	
l. Torquing cylinder head bolts.	
m. Use of compounds on head gaskets.	
n. Torquing injectors and adjustment.	
III. *Cylinder Blocks and Liners*	1,200
a. Removing and installing cylinder sleeves.	
b. Cleaning and checking water passages.	
c. Checking counter bores for sleeves.	
d. Recutting and straightening counter bores.	
e. Removing and cutting cylinder studs.	
f. Cleaning ring grooves, fitting piston and ring for clearances.	
g. Installing piston pin bushing and fitting piston pins.	
h. Checking rod alignment and rod bores.	
i. Honing and boring cylinders.	
j. Cleaning oil passages.	
k. Inspecting oil and oil lines.	
l. Checking, removing and installing timing gears.	
m. Checking main bearing saddles, crank shaft wear and cracks, and radius area.	
n. Reasons for magnafluxing.	

Addendum No. 1

761-425 O—65——3

		Approximate Hours
	o. Installing main and rod bearings.	
	p. Checking oil clearances.	
	q. Torquing main and rod bearings.	
	r. Installing cam shaft bushings and line reaming and bearings.	
	s. Pressure test oil systems.	
	t. Dial indicating run out on flywheel and housings.	
IV.	*Fuel and Electrical Systems*	1,050
	a. Adjusting valve clearances.	
	b. Installing and adjusting injectors.	
	c. Checking compression.	
	d. Checking and adjusting injection and carburetion systems.	
	e. Care and cleaning of air filters.	
	f. Timing injection and electrical systems.	
	g. Use of proper equipment to check electrical systems.	
	h. Repairing fuel pumps, carburetors, generators and starters.	
	i. Adjusting voltage regulators.	
	j. Checking and servicing fuel filtering systems.	
	k. Making up and installing wiring circuits.	
V.	*Water Cooling System*	500
	a. Checking thermostats.	
	b. Cleaning water passages.	
	c. Installing new gaskets on radiator tanks.	
	d. Checking pressures on cooling systems.	
	e. Adjusting fan belts and friction-driven fan drivers.	
VI.	*Clutch*	600
	a. Checking and adjusting clutches.	
	b. Rebuilding pressure plates.	
	c. Relining clutch discs.	
	d. Removing and repairing clutches.	
VII.	*Transmission*	1,000
	a. Removing and installing transmissions.	
	b. Testing converters.	
	c. Rebuilding transmissions and torque converters.	
	d. Adjusting steering clutches.	
	e. Rebuilding steering clutches.	
	f. Relining steering clutch bands.	
	g. Adjusting and installing ball bearings, Timken bearings, and oil seals.	

	Approximate Hours
VIII. *Differentials*	500
a. Adjusting, inspecting and replacing differential gears, bearings, and oil seals.	
IX. *Final Drive*	300
a. Removing, replacing and adjusting final drives, axles, gears, bearings, and oil seals.	
b. Adjusting tracks, wheel bearings, track rollers, and brake lining.	
c. Repairing, servicing and adjusting air compressors, brake applicators, boosters, valves, and regulators.	
X. *Hydraulic Pumps*	300
a. Repairing and servicing of cylinders, valves, and power control units.	
XI. *Welding*	800
a. Acetylene—cutting, brazing, and welding.	
b. Electric—cutting and welding.	
XII. *Repair and Maintenance of Self-Propelled and Stationary Equipment Exclusive of Engines*	500
a. Use of proper oils, greases, tools and shop equipment.	
b. Maintenance and repair of the various types of equipment used by the industry.	
Total	8,000

TRUCK MECHANIC

(Sample 2)

Work Processes	*Approximate hours*
A. Spring, Frames and Front Axles	500
B. Wheels, Tires and Steering Gears	500
C. Brakes, Rear Axles and U-Joints	1,000
D. Clutches, Transmissions and Power Takeoffs	1,000
E. Cooling, Lubrication and Fuel Systems	750
F. Engines, Including Gas, Diesel and L.P.G	1,750
G. Electrical Systems	1,000
H. Tune-up and Testing Equipment	500
I. Machine Shop and Welding	500
J. Miscellaneous	500
Total	8,000

TRUCK MECHANIC

(Sample 3)

Work Processes	*Approximate Hours*
A. *Lubrication*	200
Transmission and drive axle.	
Replacement and cleaning of all filters and elements.	
Final checking—battery and tires.	
Steering assembly and connections.	
Universal joints.	
Clutch bearings.	
Water pump and distributor.	
Use of various oils and greases.	
B. *Front End or Steering*	850
Turning radius and adjustment.	
Set toe-in.	
Replace wheel oil seals.	
Rebuild steer axle.	
Check and repair shock absorbers when used.	
Replace springs when used.	
Replace or repair tie rod ends.	
Rebuild or replace spider assemblies.	
Rebuild or repair and adjust steering gear.	
C. *Drive Axle*	700
Rebuild complete.	
Adjust differential bearings.	
Rebuild or replace universal joints.	
Rebuild or replace axle adaptors.	
Rebuild or repair planetaries.	
D. *Brakes*	700
Minor adjustments.	
Major adjustments.	
Bleeding.	
Relining brakes or replacing lining.	
Replace or turn drums.	
Rework or replace backing plate.	
Check and repair all connections.	
Heel and toe adjustment brake shoes.	
Replace or rebuild wheel cylinders.	
Replace or rebuild master cylinders.	
Check and rebuild or repair power brake system.	
Repair or reset or check automatic adjusters.	
Repair or replace parking brake mechanism.	
E. *Motor Repairs, Overhaul or Install*	1,650
Rebore and hone cylinders.	
Repair timing gears and accessory drive gears.	

		Approximate Hours
	Repair or rebuild hydraulic oil pump.	
	Grind valves.	
	Reseat head.	
	Replace piston rings and pins.	
	Adjust or replace bearings.	
	Set timing.	
	Repair or replace oil pump.	
	Align rods.	
	Fit new pistons.	
	Inspect crankshaft.	
	Adjust valve.	
	Engine tune-up.	
	Repair or replace oil lines.	
F.	*Cooling System*	450
	Knowledge of thorough external cleaning of radiator.	
	Check and clean transmission oil cooling section of radiator.	
	Repair water pumps.	
	Replace hose connections.	
	Install water pump.	
	Replace fan.	
	Minor repair to radiator.	
	Use of various antifreeze.	
	Reverse flush block.	
G.	*Carburetion*	600
	Values of dry type air cleaner and oil bath air cleaner.	
	Correct cleaning methods of both.	
	Governor repair or rebuild and correct governor functions.	
	Overhaul.	
	Adjustment.	
	Cleaning.	
	Intake manifold.	
	Heat riser valve.	
H.	*Electrical Systems*	950
	Test and adjust micro switches.	
	Correct spring tension in air gap on contactors.	
	Clean commutator and replace brush springs and brushes on all motors.	
	Check brush spring tension.	
	Primary and secondary circuit testing.	
	Use of instruments—ohmmeter, ammeter, and voltmeter.	
	Battery—test, charge, replace.	
	Generator—test, repair, replace.	
	Turn armature.	
	Regulators—test, adjust, replace.	

		Approximate Hours
	Cutouts—test, adjust, replace.	
	Distributor—overhaul, replace, synchronize.	
	Starters—overhaul, test, replace.	
	Lights—switches.	
	Wiring tests.	
	Coils, condensers—test and replace.	
I.	*Engine Tune-Up and Trouble Shooting*	400
	Set LPG with combustion efficiency analyzer.	
	Set LPG with vacuum gage and tachometer.	
	With analyzers—without.	
	Distributor adjustment.	
	Set timing.	
	Adjust valves.	
	Test compression.	
	Test plugs, wires.	
J.	*Clutch and Transmission*	550
	Adjust.	
	Repair.	
	Replace.	
	Inspection of gears, bearings.	
	Overhaul.	
	New case installation.	
K.	*Bench Work*	500
	Hydraulic test equipment.	
	Rebuilding hydraulic cylinders, valves, and power steering accessories.	
	Operation of various machines.	
	Valve refacer.	
	Armature lathe.	
	Brake drum lathe.	
	Portable drills.	
	Boring bars.	
	Arbor press.	
	Break testers.	
	Grinders.	
L.	*Automatic Transmission*	450
	Repair, rework or replace all types of automatic transmissions.	
	Analyze and test procedures for trouble shooting automatic transmissions.	
	Function and knowledge of torque converters.	
	Repair or rebuild industrial type torque converters.	
	Test and evaluate torque converter functions.	
	Total	8,000

TRUCK MECHANIC

(Sample 4)

Work Processes	Approximate Hours
1. *Electrical* Battery, generator, regulator, series-parallel switch, starter, wiring, headlights, body lights, cab and inside lights, turn signals, trailer connections, horn, and engine ignition (coil, condenser, harness, distributor, etc.).	1,000
2. *Fuel* Tanks, lines, fuel pumps, strainers, injector pumps, injectors, and air intake system.	750
3. *Cooling* Radiators, hoses, thermostat, radiator shutters, fan, and pulleys.	750
4. *Lubrication* Oil pump, lines, filters, and pressure fittings.	500
5. *Engine* Block, heads, crankshaft, rods, pistons, rings, sleeves, bearings, camshaft, valves, valve train, manifolds, pan, blower, turbocharger, exhaust system and muffler, tailpipe, mounts, and gaskets and seals.	1,500
6. *Clutch* Housing, plates, facing, bearings, and linkage.	400
7. *Transmission* Housing, gears, shafts, mounts, synchronizers, and control.	500
8. *Drive Shaft and Universals* Drive shafts, universal joints, and bearings and hangers.	250
9. *Differential* Ring and pinion gears, bearings, reduction gears, and shaft mechanism.	250
10. *Rear Axle* Housing, shafts, bearings, and seals.	250
11. *Steering* Axle, linkage, steering gear box, shaft and wheel, and power assist mechanism.	250
12. *Brakes* Shoes, linings, cylinders, diaphragms, lines, compressor, drums, parking brake shoes, linkage, reservoir, filter, bleeds, drains, controls, pressure switch, and breakaway valve.	400
13. *Wheels and Rims* Wheels, lugs, bearings, seals, and rims.	400
14. *Accessories* Mirrors, cab cooling and ventilating equipment, windshield wipers, recorder, radios, and heaters.	500

	Approximate Hours
15. *Miscellaneous* Service calls, towing, miscellaneous small parts.	300
Total	8,000

TRUCK MECHANIC

(Sample 5)

Work Processes	Approximate Hours
1. *Lubrication*	200
a. Chassis lubrication.	
b. Motor oil change, pack transmission and differential.	
c. Pack and adjust wheels and bearings.	
2. *Front End Work*	600
a. Repair and install steering parts.	
b. Replace springs (coil or leaf).	
c. Re place front axles, king pins and bushings.	
3. *Motor Tuneup*	1,500
a. Install wiring in electrical systems; trouble-shooting.	
b. Repair lights, horns, windshield wipers, and other electrically operated accessories.	
c. Replace generators, starters, voltage regulators, and water pumps.	
d. Replace fuel pumps, gas and oil gauges, heater gauges, air cleaners, and speedometers.	
e. Test, adjust and replace spark plugs.	
f. Clean, adjust, set and replace distributor parts.	
4. *Wheel and Brake Work*	1,000
a. Test brakes.	
b. Adjust brakes and fill the lines.	
c. Reline brakes.	
d. Repair brake (fluid and mechanical) lines and emergency brakes.	
5. *Engine Overhaul*	2,500
a. Grind and reface valves.	
b. Install piston rings.	
c. Replace main and connecting-rod bearings.	
d. Replace crankshafts and camshafts.	
e. Replace worn gaskets.	
f. Replace cylinder block and completely rebuild new engines.	
6. *Transmission*	1,000
a. Tear down broken transmission and install ne gears, bearings, gaskets, etc.	
b. Build up new transmissions from parts.	

	Approximate Hours
7. *Clutch*	600
a. Install new pressure plate.	
b. Install new drive member.	
c. Install new pilot and throw out bearings.	
8. *Rear End Work*	600
a. Repair and replace universal joints.	
b. Repair and replace differential.	
c. Repair and replace propeller shafts.	
d. Install new axle shafts.	
e. Install new axle housings.	
Total	8,000

TRUCK MECHANIC (HEAVY-DUTY-EQUIPMENT MECHANIC)

(Sample 1)

Work Processes

I. Engines	Approximate Hours
A. *Gasoline Engine Repair*	1,500
1. Pistons, rings, valves and bearings.	
2. Fuel systems—carburetion and fuel pumps.	
3. Ignition and starter systems.	
4. Lubrication system and oil pumps.	
5. Cooling system.	
B. *Diesel Engine Repair*	2,500
1. Two-cycle engines.	
2. Four-cycle engines.	
3. Pistons, rings, valves, and bearings.	
4. Injection systems.	
5. Scavenging systems.	
6. Starting systems—electric and compressed air.	
7. Cooling systems.	
8. Lubricating systems.	
C. *Drive Systems*	1,000
1. Clutches.	
2. Transmissions and transfer cases, and power takeoff.	
3. Final drives.	
4. Rear wheels.	
5. Tracks and track suspension systems.	
D. *Steering Systems.*	
E. *Brake Systems.*	
F. *Chassis and Springs*	500

	Approximate Hours
G. *Equipment Repair and Maintenance*	2,000
1. Winches and hoisting gear.	
2. Hydraulic and pneumatic systems.	
3. Air compressors.	
4. Bulldozers, graders, and motor road patrols.	
5. Cranes, clamshells and drag-lines.	
6. Ditchers and back-hoes.	
II. Lubrication and Lubrication Systems of All Equipment	500
Total	8,000

TRUCK MECHANIC (HEAVY-DUTY-EQUIPMENT MECHANIC)

(Sample 2)

Work Processes	*Approximate Hours*
1. Cleaning and Inspecting the Parts of All Types of Equipment	400
2. Basic Care and Lubrication	250
3. Brakes (all types)	200
4. Clutches	250
5. Transmissions	400
6. Final Drives	350
7. Steering Mechanisms	300
8. Power Control Units	250
9. Winches	100
10. Hydraulic Pumps	250
11. Track Assemblies	150
12. Electrical Systems	300
13. Gasoline Fuel Intake	100
14. Diesel Fuel Injection	250
15. Cooling System	100
16. Engine Maintenance	1,000
17. Engine Reconditioning	1,800
18. Welding	750
19. Field Maintenance, General	800
Total	8,000

TRUCK AND TRAILER BODY MECHANIC

(Sample 1)

Work Processes	*Approximate Hours*
I. *Sectional Repairs*	500
a. Replacing square tubing.	
b. Reinforcement of sides.	

		Approximate Hours
	c. Replacement of rear corner posts and covers.	
	d. Replacement and repair of panels.	
	e. Replacement of moulding retainer and moulding.	
II.	*Insulation*	500
	a. Knowledge of proper procedure for installing different types of thicknesses.	
	b. Adapting doors for insulation and weatherstripping.	
	c. Knowledge of different methods of insulating floors, floor pans, drains, and duck boards.	
	d. Installation of refrigerator units.	
III.	*Painting*	1,200
	a. Prepare body and fenders for painting.	
	b. Sanding and rubdown preparation.	
	c. Use of spray gun.	
	d. Mix paints.	
	e. Touch up with brush.	
	f. Color matching.	
	g. Air sanding.	
	h. Masking and taping.	
IV.	*Sheetmetal Work*	750
	a. Bending, forming and applying of body metals.	
V.	*Woodwork*	1,200
	a. General millwork.	
	b. Planing, joining, ripping.	
	c. Shiplapping.	
	d. Carpentry work in connection with body building.	
VI.	*Blacksmithing*	650
	a. Forging.	
	b. Bending and forming iron.	
VII.	*Gas and Electric Welding*	700
	a. Working with steel, cast iron, sheetmetal and brass.	
VIII.	*Truck-Body Assembly*	2,500
	a. Layout and assembly of all types of truck bodies, as van, semi-van, rack, produce, express, etc., and all special type bodies.	
	b. Wiring.	
	c. Mounting bodies.	
	d. Reading of blueprints.	
	e. Windshield and glass replacement.	
	f. Door and door-lock replacement.	
	g. Canvas work.	
	Total	8,000

TRUCK AND TRAILER BODY MECHANIC

(Sample 2)

Work Processes	*Approximate hours*
I. *Body Reconstruction and Assembly*	3,000
a. Stripping wrecked trucks.	
b. Straightening miscellaneous parts.	
c. Rebuild tailgates, doors, cabs, etc.	
d. Layout and fabrication.	
e. Riveting.	
f. Installation gas tanks, lines, etc.	
g. Welding—brazing.	
II. *Frame Work*	2,500
Conversion work	
a. Lengthening or shortening frames and drive shafts.	
b. Change axle assembly.	
c. Install overload springs.	
d. Install fifth wheel.	
e. Chassis assembly.	
f. Repair and straighten frames.	
III. *Fabrication of Bodies*	
a. Cabs, partitions, bodies	2,000
IV. *Layout Table and Miscellaneous*	500
Total	8,000

TRUCK AND TRAILER BODY MECHANIC

(Sample 3)

Work Processes	*Approximate hours*
I. *Machine Work*	1,500
a. Planing—rip saw, band saw, jointer, shaper.	
b. Drill press, grinder, nippler, punch press, shear.	
II. *Metal Work*	1,500
a. Pitting, bending, lapping.	
b. Layout.	
c. Welding—electric and acetylene.	
d. Soldering.	
e. Forge work.	
III. *Body Construction*	1,500
a. Layout and fitting.	
b. Squaring off, setting and mitering.	
c. Build tailgate.	
d. Build and hang doors.	
e. Glass installation.	
f. Hardware and fittings.	

	Approximate Hours
IV. *Chassis*	1,000
a. Layout and fabrication.	
b. Riveting, hand and power.	
c. Frame alignment.	
d. Spring work, coil and elliptic.	
V. *Painting*	1,000
a. Priming, filing and sanding.	
b. Finishing, exterior and interior.	
VI. *Lighting System*	1,000
a. Wiring installation.	
b. Head lights, tail lights, parking lights.	
c. Spot light, interior lights.	
VII. *Insulation*	500
Total	8,000

TRUCK MECHANIC—DIESEL

(Sample 1)

Work Processes	*Approximate hours*
Orientation	500
1. Learning all parts and accessories of diesel engines.	
2. Assembling orders for parts.	
3. Parts requisitioning and acquiring all knowledge about diesel parts to work hand in hand with diesel mechanic training.	
Motor Overhaul	2,500
1. Reboring and honing cylinders.	
2. Install crankshaft, pin bearing, camshaft and bushings.	
3. Repair oil pump.	
4. Adjust fuel racks.	
5. Changing and adjusting main and connecting-rod bearings.	
Fuel System	2,500
1. Unit injector repair.	
2. American Bosch nozzle.	
3. Part identification.	
4. Calibration and testing.	
5. Repairing and lapping pump injector parts.	
6. Cleaning and installing fuel line.	
7. Assembling and disassembling large fuel pump (A.P.E. Series).	
8. Cleaning and repairing all types of fuel injectors (AKB AKC AKE AKF AKK AKL AKN).	

	Approximate Hours
9. Ordering pump and injector parts.	
10. Maintain and operate shop.	
Repair to Electrical System	1,250
1. Battery repair and service.	
2. Testing, adjusting and installing voltage regulator.	
3. Inspect and install wiring.	
4. Install and adjust lights.	
5. Install electrical accessories.	
Repair to Power Transmission	500
1. Clutch-repair and adjustment.	
2. Transmission repair.	
3. Drive shaft and universal joint.	
Repairs to the Cooling System	750
1. Overhaul and install water pump.	
2. Install hose, thermostat and fan belt.	
3. Repair radiator.	
Total	8,000

TRUCK MECHANIC PAINTER

(Sample 1)

Work Processes	*Approximate hours*
A. Preparing surfaces for painting, sanding, cleaning, papering windows, masking chrome	800
B. Knowledge of paints and thinners, paint and thinner ingredients, handling of paint and thinner inventories, knowledge of paint numbers and charts	600
C. Maintenance and use of painting equipment, brushes, spray guns, spray booths, etc. (including complete assembly and disassembly of spray guns and regulators)	600
D. Matching and mixing of colors for proper tone and quality	600
E. Development technique of painting under varying climatic conditions; surfacing of prime coat, various color coats; operation of spray gun for even distribution	1,200
F. Sanding and rubbing of various coats for completion; stripping of wheels and any other necessary stripping operations	800
G. Detailing of finished product; cleaning up process	800
H. Knowledge of estimating	600
Total	6,000

RELATED INSTRUCTION

Wiring and ignition diagrams with emphasis on schematics.
Fundamental hydraulics and Ohm's law.
Elementary blueprint reading.
Fundamentals of mathematics.
Precision measurements.
Power transmission.
Theory and science related to:
  Carburetion.
  Frame and steering.
  Rear axle and drive shaft.
  Transmission and clutch.
Business management.
Industrial history and labor problems.
Courses in safety.

144 hours of related instruction are required for each apprentice for each year.

APPRENTICE RECORDKEEPING

To maintain a current record of the progress and ability of apprentices, an accurate recordkeeping system, covering the pertinent points, is essential. A number of different types of recordkeeping systems are in use in the different areas. Some systems include a variety of recordkeeping forms—daily, weekly, monthly, as well as a final master chart summarizing the pertinent data recorded during the entire term of apprenticeship.

Reproduced on the following page is a simply designed apprentice recordkeeping report or form. It is presented as an example in establishing your own recordkeeping system. This form covers a 1-month period and is accumulative.

It will be noted that the data recorded during each 1-month period is carried forward to the next period. In this way, a current and complete record of the progress of each apprentice may be kept on this single form.

Also included is a sample master control report which the local program sponsor may use in conjunction with the individual apprentice recordkeeping report.

Samples of other recordkeeping systems may be obtained, upon request, through the field representatives of the Bureau of Apprenticeship and Training or State apprenticeship agencies.

APPRENTICE MECHANIC MONTHLY WORK REPORT

APPRENTICE MECH. _____ MONTH _____ 19____

	Fuel Pump Room	Engine Dynomometer	Engine Rebuild	Engine Teardown	Rear End Assy.	Front Ends Steering Assy.	Transmission & Diff.	Drive Lines	Machine Shop	Cylinder Heads	Oil Pumps & Rockers	Pistons & Sleeves	Magnaflux Mach.	Rewiring Tractors	Rebuild Elec. Assy.	Tractor Service Elec.	Tractor Overhaul	Paint Shop	Carpenter Shop	Brake Relining	Trailer Overhaul	Trailer Service	Stores Department	Tractor Service	Special		Total
HOURS Carried Forward																										
Date 1																										
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3																										
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TOTAL																										

Addendum No. 2

APPRENTICE MECHANIC CONTROL REPORT

MONTH _____ 19____

	Dept. I 520 Hrs.			Dept. II 520 Hrs. 3 Months									Dept. III			Dept. IV 520 Hrs.					Dept. V	VI						
	Fuel Pump Room	Engine Bynomometer	Engine Rebuild	Engine Teardown	Rear End Assy.	Steering Assy.	Front Ends	Transmission & Diff.	Drive Lines	Machine Shop	Cylinder Heads	Oil Pumps & Rockers	Pistons & Sleeves	Magnaflux Mach.	Rewiring Tractors	Rebuild Elec. Assy.	Tractor Service Elec.	Tractor Overhaul	Paint Shop	Carpenter Shop	Brake Relining	Trailer Overhaul	Trailer Service	Stores Department	Tractor Service	Special		TOTAL
NAME																												

SAMPLE

APPLICANT RATING FORM

Name_____ Social Security No._____
City_____ Street_____ Phone_____

Instructions:

Evaluate qualified applicants on each of the characteristics listed, using the following point system:

	Points
Excellent	3
Above average	2
Average	1
Below average	0

A score of less than 12 points will disqualify the applicant:

	Points
A. *Education*:	
(1) High school shows interest and achievement pertinent to the trade	_____
(2) Successfully completed courses or instructions (other than high school) which will be helpful in the trade	_____
B. *Experience:*	
(1) Misc. part or full time jobs *not related* to the trade	_____
(2) Misc. part or full time jobs *related* to the trade	_____
C. Interview—Impressions of the following qualities:	
(1) Sincere *interest* in learning the trade	_____
(2) Attitude toward hard work and desire to learn	_____
(3) Attitude toward attending classes	_____
(4) Personal characteristics	_____

Certificates of Completion of Apprenticeship, awarded apprentices when they have completed their training, are issued by the State apprenticeship agency or the Bureau of Apprenticeship and Training in States in which no such agency is established.

Addendum No. 4

APPRENTICESHIP AGREEMENT

Between Apprentice and Employer

The employer and apprentice whose signatures appear below agree to these terms of apprenticeship:

The employer agrees to employ and train the apprentice in accordance with the terms and conditions of the .....

....., which are made a part
(Name of Apprenticeship Standards)

of this agreement; or, in accordance with the terms and conditions stated on the reverse side of this agreement.

The apprentice agrees to apply himself diligently and faithfully to learning the trade in accordance with this agreement.

Trade.....Term of apprenticeship.....
(Hours or Years)

Credit for previous experience.....Term remaining.....

Date the apprenticeship begins .....

This agreement may be terminated by either party notifying the other or in accordance with the named apprenticeship standards.

.....	.....
(Signature of Apprentice)	(Name of Employer-Company)
.....	.....
(Address)	(Address)
.....	
(Apprentice's Birth Date)	(Signature of Authorized Official)

Approved by ....., Joint Apprenticeship Committee

Date..... by .....
(Signature of Chairman or Secretary)

Registered by .....
(Name of Registration Agency)

Date..... by .....
(Signature of Authorized Official)

REGIONAL OFFICES

BUREAU OF APPRENTICESHIP AND TRAINING

REGION I

(Maine, N.H., Vt., Mass., R.I., Conn.)
Room 501, 18 Oliver St.,
Boston, Mass. 02110

REGION II

(N.Y., N.J.)
Room 906, 341 Ninth Ave.,
New York, N.Y. 10001

REGION III–IV

(Pa., Del., Va., Md., W. Va., N.C.)
Room 321,
Professional Arts Bldg.,
Chambersburg, Pa. 17201

REGION V

(S.C., Tenn., Ga., Miss., Fla., Ala.)
Room 525, 1371 Peachtree Bldg.,
17th and Peachtree St., N.E.,
Atlanta, Ga. 30309

REGION VI

(Ohio, Mich., Ky.)
Room 948, Engineers' Bldg.,
1365 Ontario St.,
Cleveland, Ohio 44114

REGION VII

(Ill., Ind., Wis.)
Room 858, U.S. Court House and Federal Office Bldg.,
219 South Dearborn St.,
Chicago, Ill. 60604

REGION VIII

(N. Dak., S. Dak., Minn., Mont.)
Room 106, Federal Bldg.,
110 S. 4th St.,
Minneapolis, Minn. 55401

REGION IX

(Mo., Kans., Nebr., Iowa)
Room 2811, Federal Office Bldg.,
911 Walnut St.,
Kansas City, Mo. 64106

REGION X

(La., Tex., Okla., Ark.)
Room 212, 1114 Commerce St.,
Dallas, Tex. 75202

REGION XI

(Utah, Wyo., Colo., N. Mex.)
Room 832, Equitable Bldg.,
730 17th St.,
Denver, Colo. 80202

REGION XII

(Ariz., Nev., Hawaii, Calif.)
450 Golden Gate Ave.,
Room 10451,
P.O. Box 36017,
San Francisco, Calif. 94102

REGION XIII

(Alaska, Idaho, Wash., Oreg.)
Room 1809, Smith Tower,
506 Second Ave.,
Seattle, Wash. 98104

STATE AND TERRITORIAL APPRENTICESHIP AGENCIES

Arizona Apprenticeship Council,
1623–B West Adams,
Phoenix, Ariz.*

Division of Apprenticeship Standards,
Department of Industrial Relations,
San Francisco, Calif.*

Colorado Apprenticeship Council
%Industrial Commission
748 State Capital Annex
Denver, Colo.*

Apprentice Training Division,
Department of Labor,
Wethersfield, Conn.*

Delaware State Apprenticeship and Training Council,
Department of Labor and Industry,
Wilmington, Del.*

District of Columbia Apprenticeship Council,
1145 19th St. N.W.
Washington, D.C.*

Department of Apprenticeship,
Florida Industrial Commission,
Tallahassee, Fla.*

Apprenticeship Division,
Department of Labor and Industrial Relations,
Honolulu, Hawaii*

Iowa Apprenticeship Council,
Bureau of Labor,
State House
Des Moines, Iowa

Kansas Apprenticeship Council,
Department of Labor,
Topeka, Kans.

Kentucky State Apprenticeship Council,
Department of Industrial Relations,
Frankfort, Ky.*

Apprenticeship Division,
Department of Labor,
Baton Rouge, La.*

Maine Apprenticeship Council,
Department of Labor and Industry,
State Office Bldg.,
Augusta, Maine*

Division of Apprenticeship Training,
Department of Labor and Industries,
Boston, Mass.*

Division of Voluntary Apprenticeship,
Department of Labor and Industry,
St. Paul, Minn.*

Montana State Apprentice Council,
Department of Labor and Industry,
Helena, Mont.*

Nevada Apprenticeship Council,
Department of Labor,
Carson City, Nev.*

New Hampshire Apprenticeship Council,
Department of Labor,
Concord, N.H.*

New Mexico Apprenticeship Council,
Labor and Industrial Commission,
Santa Fe, N. Mex.*

New York State Apprenticeship Council
Department of Labor,
Albany, N.Y.*

Division of Apprenticeship Training,
Department of Labor,
Raleigh, N.C.*

Ohio State Apprenticeship Council,
Department of Industrial Relations,
Columbus, Ohio*

Oregon Apprenticeship Council,
Bureau of Labor,
Portland, Oreg.*

*State apprenticeship law enacted.

Addendum No. 7

Pennsylvania Apprenticeship Council,
Department of Labor and Industry,
Harrisburg, Pa.

Apprenticeship Division,
Insular Department of Labor,
San Juan 8, P.R.*

Rhode Island Apprenticeship Council,
Providence Public Library,
Providence, R.I.

Utah Apprenticeship Council,
Industrial Commission,
Salt Lake City, Utah*

Vermont Apprenticeship Council,
Department of Industrial Relations,
Montpelier, Vt.*

Division of Apprenticeship Training,
Department of Labor and Industry,
Richmond, Va.*

Washington Apprenticeship Council,
Department of Labor and Industries,
Olympia, Wash.*

Apprenticeship Division,
Wisconsin Industrial Commission,
Madison, Wis.*

Virgin Islands Apprenticeship Council,
Department of Agriculture and Labor,
Christiansted, St. Croix, V.I.*

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