NFPA No.

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FIRE APPARATUS DRIVER/OPERATOR PROFESSIONAL QUALIFICATIONS 1976

NATIONAL FIRE PROTECTION ASSOCIATION

470 Atlantic Avenue, Boston, MA 02210

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See Inside Back Cover for Official NFPA Definitions

SC-AM-76

National Professional Qualifications System

established by the

Joint Council of National Fire Service Organizations

Constituent Members of the
Joint Council of National Fire Service Organizations

Fire Marshals Association of North America

International Association of Arson Investigators

International Association of Black Professional Fire Fighters

International Association of Fire Chiefs

International Association of Fire Fighters

International Fire Service Training Association

International Municipal Signal Association

International Society of Fire Service Instructors

Metropolitan Committee of International Association of Fire Chiefs

National Fire Protection Association

The Joint Council of National Fire Service Organizations consists of leaders of the principal national organizations representing the Fire Service of the United States. It meets periodically to review current developments and to establish areas of common interest where cooperative efforts of member organizations can be used for maximum results.

An important step in the establishment of national standards of professional competence for the fire service was taken by the Joint Council on October 25, 1972.

The Council decided that one area of common interest in which national collective action was desirable was in the establishment of standards upon which the levels of competency within the fire service could be determined.

A committee of the Council was delegated the responsibility of preparing an acceptable system for the development of the standards. Following several months of work, during which the suggestions of constituent organizations were incorporated, the Committee submitted the final proposal to the Joint Council and the following system was approved and established:

1. Committees to develop standards of professional competency, made up of peer group representation; and

2. An independent Board to oversee and validate standards developed and the implementation of such standards in a nationally coordinated continuing professional development program for the fire service.

The Secretariat for Committees and Board is to be provided by the staff of the National Fire Protection Association.

1. Fire Service Professional Standards Development Committees

There are four committees, each of which is made up of representatives of organizations which are constituent members of the Joint Council and certain other persons nominated by the Joint Council, collectively.

The four committees are respectively responsible for the development and preparation of recommended minimum standards of professional competence required of:

1. Fire Fighters
2. Fire Inspectors and Investigators
3. Fire Service Instructors
4. Fire Service Officers.

Each committee is established and operated under NFPA standards making procedures with one important variation, which is that no draft standard shall be submitted to NFPA for final adoption until it has been approved by the National Professional Qualifications Board for the Fire Service.

Standards are prepared for use after final adoption as a basis for nationally standardized examinations by authorized agencies and the standards are available for adoption by federal, state and local authorities.

Committees do not determine, or become involved in, actual certification procedures or the direct implementation of the standards; they do assist implementing agencies by a continuing review and revision of the standards.

The authorized representation on each committee is as follows:

1. Fire Fighter Qualifications Committee

International Association of Fire Chiefs	3 persons
International Association of Fire Fighters	3 persons
International Association of Black Professional Fire Fighters	3 persons
International Fire Service Training Association	3 persons
International Society of Fire Service Instructors	3 persons
National Fire Protection Association	3 persons
Joint Council of National Fire Service Organizations	3 persons

2. Fire Inspector and Investigator Qualifications Committee

Fire Marshals Association of North America	2 persons
International Association of Arson Investigators	2 persons
International Association of Fire Chiefs	2 persons
International Association of Fire Fighters	2 persons
National Fire Protection Association	2 persons
Joint Council of National Fire Service Organizations	3 persons

3. Fire Service Instructor Qualifications Committee

International Association of Fire Chiefs	2 persons
International Association of Fire Fighters	2 persons
International Fire Service Training Association	2 persons
International Society of Fire Service Instructors	2 persons
National Fire Protection Association	2 persons
Joint Council of National Fire Service Organizations	3 persons

4. Fire Service Officer Qualifications Committee

Fire Marshals Association of North America	3 persons
International Association of Fire Chiefs	3 persons
International Association of Fire Fighters	3 persons
International Association of Black Professional Fire Fighters	3 persons
International Society of Fire Service Instructors	3 persons
Metropolitan Committee of International Association of Fire Chiefs	3 persons
National Fire Protection Association	3 persons
Joint Council of National Fire Service Organizations	3 persons

2. National Professional Qualifications Board for The Fire Service

A nine-person Board appointed by the Joint Council to act on behalf of the Council in the following duties and responsibilities:

(i) The Board is constituted to supervise a nationally coordinated continuing professional development program for the Fire Service.

(ii) The Board shall be responsive to the needs and opinions of all groups involved with the Fire Service and of others, including individuals who have related interests.

(iii) It shall identify and define levels of professional progression.

(iv) It shall correlate, review and validate draft standards prepared by the Technical Committees established to produce professional standards for each level of fire service responsibility.

(v) It shall approve all draft standards before such are submitted for final adoption procedures.

(vi) It shall be responsible for the accreditation and supervision of any national programs of certification and shall coordinate with implementing agencies to ensure validity and reliability of the evaluation criteria used in connection with such programs.

CURRENT COMPOSITION OF THE BOARD

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(1976)

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STATEMENT BY THE BOARD AS TO THE APPLICABILITY OF STANDARDS DEVELOPED UNDER THE SYSTEM

Application to Existing Positions

It is not the intent of the Board that these standards shall have the effect of rendering invalid any rank, qualification and appointment acquired prior to the adoption of this standard.

Upon adoption of any standard, the authority having jurisdiction shall classify its existing ranks, qualifications, and appointments to determine equivalency with an appropriate level of the standard.

An incumbent of a position established prior to adoption of a standard shall be considered qualified and eligible for future progression in accordance with the standards.

Existing Systems

Those existing systems of qualifications which meet or exceed these minimum standards should continue in force.

It is the intent, however, that existing systems of qualifications which fail to meet these standards be discontinued after adoption of the standard, so that all persons acquiring qualification thereafter do so in accordance with this standard.

The Board recognizes that, at present, wide variations exist in the standards of competence required of members of the fire service; and that due to geographic considerations and the differing requirements of the many organizations providing fire protection, higher levels of competence than those provided in the standards produced under the National System may be desirable in certain areas.

The Board considers it essential that all members of the fire service eventually achieve the minimum standards.

Performance Objectives

The Board directed all committees to develop standards in terms of terminal performance objectives, which are considered the *minimum* necessary for a person to be considered competent to engage in providing fire service at the respective level and in the role specified by the standard, no matter where that person is serving.

In this connection, it is pointed out that the statement of performance objectives contained in the standards is not a training program outline. A number of instructional steps are required for mastery of an objective. Teaching outlines will be more detailed and extensive, as a single objective can require many

hours of instruction and may interrelate to instruction for other objectives.

The Standards

The standards are designed so that any member of the fire service can achieve the level required by various means; these include participation in state and local training programs, self-study, attendance at colleges offering suitable courses, and by combinations of these means.

The standards are the first step: there must also be a controlled testing procedure by which personnel can be officially certified when they have demonstrated their competency. The Board stresses that such testing procedures are essential to a meaningful program of professionalism and, accordingly, is prepared, in conformance with the directions of the Joint Council of National Fire Service Organizations, to review the validity and quality of testing procedures established by state and local authorities, and to accredit such procedures.

The Board strongly recommends that certification procedures be established on a statewide basis in every state where no such system exists at present, and that every fire department participate in the program.

The establishment of standards and testing procedures will not, in themselves, ensure that all personnel will achieve the required levels of competency. It follows that training programs should be developed to prepare members of the fire service to acquire the skills and knowledge necessary to achieve the terminal performance objectives of the standards.

Throughout the standards, levels of numerical ascending sequence have been used to denote increasing degrees of responsibility: e.g., Fire Fighter **I, II, III,** the lowest or basic level being **I.** A similar sequence will be used in each standard; the total number of levels varying in accordance with the number of steps involved in the individual standard.

Approval of Standard

The final draft of NFPA Standard No. 1002, *Fire Apparatus Driver/Operator Professional Qualifications,* was approved by the National Professional Qualifications Board for the Fire Service on the 2nd day of February, 1976, with the recommendation that it be submitted for adoption at the NFPA Annual Meeting to be held in Houston, Texas in May, 1976.

(The foregoing is not part of the Standard.)

Fire Apparatus Driver/Operator Professional Qualifications

NFPA No. 1002

Standard for
Fire Apparatus Driver/Operator Professional Qualifications

NFPA 1002–1976

1976 Edition of NFPA Standard 1002

This is the first edition of the Fire Apparatus Driver/Operator Professional Qualifications Standard. It was adopted by the National Fire Protection Association on May 19, 1976 at the Annual Meeting, on recommendation of the Professional Qualifications Standards for Fire Fighter Committee.

Origin and Development

This Standard is the second in a series of Fire Fighter Professional Qualifications Standards. The format and philosophy of this Standard are intended to be compatible to the Fire Fighter Professional Qualifications, NFPA Standard No. 1001, adopted November 20, 1974.

The intent of the Committee was to develop performance standards in such a clear and concise manner that they can be used to determine without doubt, that any person so measured does truly possess the skills to be a fire apparatus driver/operator. The Committee further contends that these performance objectives can be used in any fire department in any city, town, or private organization throughout the North American continent.

This Standard has been two years in development. It has gone through seven drafts, and a number of Subcommittee meetings. The full Committee approved the final Standard at Dallas, Texas, on January 6, 1976.

COMMITTEE ON

Fire Service Professional Standards Development for Fire Fighter Qualifications

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Harold G. Thompson, International Society for Fire Service Instructors
Jack A. Waller, International Association of Fire Fighters

This list represents the membership at the time the Committee was balloted on the text of this edition. Since that time, changes in the membership may have occurred.

Interpretation Procedure of the Committee on Fire Service Professional Standards Development for Fire Fighter Qualifications

Those desiring an interpretation shall supply the Chairman with five identical copies of a statement in which shall appear specific reference to a single problem, paragraph, or section. Such a statement shall be on the business stationery of the inquirer and shall be duly signed.

When applications involve actual situations they shall so state and all parties involved shall be named.

The Interpretations Committee will reserve the prerogative to refuse consideration of any application that refers specifically to proprietary items of equipment or devices. Generally inquiries should be confined to interpretation of the literal text or the intent thereof.

Requests for interpretations should be addressed to the National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

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Standard for
Fire Apparatus Driver/Operator Professional Qualifications

NFPA 1002 — 1976

Chapter 1 Administration

1-1 Scope. This Standard identifies the professional levels of competence required of the fire apparatus driver/operator.

It specifically covers the requirements for drivers and driver/operators of fire department pumpers, aerial ladder apparatus, and elevating platform apparatus.

1-2 Purpose. The purpose of this Standard is to specify, in terms of performance objectives, the minimum requirements of professional competence required for service as a fire apparatus driver/operator.

It is not the intent of this Standard to restrict any jurisdiction from exceeding these minimum requirements.

This Standard shall cover the requirements for drivers; driver/operators of fire department pumpers, aerial ladder apparatus, and elevating platform apparatus; and tiller operators.

1-3 General.

1-3.1 All fire fighters who drive fire department vehicles or apparatus shall meet the objectives specified in Sections 2-1 and 2-2, Chapter 2, of this Standard.

1-3.2 All fire fighters who drive fire department vehicles or apparatus under emergency response conditions shall meet the objectives specified in Chapter 2 of this Standard.

***1-3.3** The fire fighter shall meet all the requirements of Chapters 1, 2, and 3 of this Standard before being certified as a fire apparatus driver/operator.

***1-3.4** The fire fighter shall also meet the requirements of Fire Fighter II as specified in NFPA Standard 1001, *Fire Fighter Professional Qualifications,* 1974, before being certified as a Fire Apparatus Driver/Operator.

1-3.5 The Fire Apparatus Driver/Operator who is required to operate an apparatus equipped with an aerial ladder shall also meet the requirements of Chapter 4 of this Standard.

1-3.6 The Fire Apparatus Driver/Operator who is required to operate the tiller shall also meet the requirements of Chapter 5 of this Standard.

1-3.7 The Fire Apparatus Driver/Operator who is required to operate an apparatus equipped with an elevating platform shall also meet the requirements of Chapter 6 of this Standard.

1-3.8 Each of the performance objectives for the fire apparatus driver/operator shall meet the following criteria: it shall be performed swiftly, safely, and with competence. Each objective shall be met in its entirety.

1-3.9 It is not required for the objectives to be mastered in the order they appear. The local or state training program shall establish the instructional priority and the training program content to prepare individuals to meet the performance objectives of this Standard.

1-3.10 Performance of objectives for qualification covered by this Standard shall be evaluated by three approved individuals from the fire service, one of whom may be from the state or regional fire service training agency.

1-3.11 Performance of objectives for qualification, when the word "demonstrate" is used in this Standard, shall require that actual performance and operation be accomplished, unless otherwise indicated within the specific objective. Simulation, explanation, and illustration may be substituted when actual operation is not feasible.

1-4 Definitions.

1-4.1 Aerial ladder apparatus. A piece of fire apparatus with a permanently mounted, power operated aerial ladder.

1-4.2 Demonstrate. To show by actual use. This may be supplemented by, or when actual use is not feasible, replaced by simulation, explanation, illustration, or a combination of these.

1-4.3 Elevating platform apparatus. A piece of fire apparatus with permanently mounted, power operated booms of articulating construction; or telescoping construction; or a combination of articulating and telescoping construction; and with a passenger carrying platform attached to the uppermost boom.

1-4.4 Fire apparatus. The emergency vehicles of the fire department or fire brigade used for fire suppression which, in this Standard, includes fire department pumpers, aerial ladder apparatus, and elevating platform apparatus.

1-4.5 Fire Apparatus Driver/Operator. The Fire Fighter II who has demonstrated the knowledge of and the ability to per-

form the objectives specified in Chapters 1, 2, and 3 of this Standard.

1-4.6 Fire brigade. The organization that provides fire rescue, and fire suppression services, and may provide fire prevention services to nongovernmental agencies.

1-4.7 Fire department. The organization that provides fire rescue, fire suppression, and fire prevention services to governmental or nongovernmental agencies.

1-4.8 Fire department pumper. A piece of fire apparatus with a permanently mounted fire pump with a rated discharge capacity of 500 GPM or greater.

1-4.9 Fire department vehicle. Any motorized vehicle that is assigned to the fire department.

***1-4.10 Fire Fighter II.** The member of a fire department or a fire brigade who has fulfilled the requirements of Fire Fighter II, as specified in NFPA Standard 1001, *Fire Fighter Professional Qualifications,* 1974.

1-4.11 Fire pump. Any pump mounted permanently on a piece of fire apparatus, with a rated discharge capacity of 500 GPM or greater.

1-4.12 Identify. To physically select, indicate, or explain verbally or in writing, using standard terms recognized by the Fire Service.

1-4.13 Objective. A goal that is achieved through the attainment of a skill, knowledge, or both, which can be observed or measured.

1-4.14 Qualified. Having satisfactorily completed the requirements of the objectives.

1-4.15 Safely. To perform the objective without injury to self or to others, or damage to fire department vehicles and equipment.

1-4.16 Swiftly. The time, as determined by the authority having jurisdiction, that it takes a qualified fire apparatus driver/operator to perform the objective satisfactorily.

1-4.17 Tiller aerial ladder apparatus. A tractor-trailer aerial ladder apparatus with a steering wheel connected to the rear axle for maneuvering the rear portion of the apparatus.

1-4.18 With competence. Possessing knowledge, skills, and judgment needed to perform indicated objective satisfactorily.

Chapter 2 All Fire Department Vehicles

2-1 Preventive Maintenance.

2-1.1 The fire apparatus driver/operator shall demonstrate the performance of routine tests, inspections, and servicing functions required to assure the operational status of fire department vehicles, including:

(a) Battery check
(b) Braking system
(c) Coolant system
(d) Electrical system
(e) Fueling
(f) Lubrication
(g) Oil levels
(h) Tire care
(i) Tools, appliances, and equipment.

2-1.2 The fire apparatus driver/operator shall demonstrate the recording and reporting, as specified by the authority having jurisdiction, of all servicing functions.

2-2 Driving/Operating.

2-2.1 The fire apparatus driver/operator shall be legally licensed to drive fire department vehicles.

***2-2.2** The fire apparatus driver/operator shall be subject to periodic medical evaluation, as specified by the authority having jurisdiction, to determine physical ability adequate for performance of duties as an operator of fire department vehicles.

***2-2.3** The fire apparatus driver/operator shall demonstrate, in writing, the correct performance of addition, subtraction, multiplication, and division problems as specified by the authority having jurisdiction.

2-2.4 The fire apparatus driver/operator shall identify all state and local laws, including rules and regulations governing the safe driving and operation of all fire department vehicles of the authority having jurisdiction.

2-2.5 The fire apparatus driver/operator, given a fire department vehicle, shall identify all gages and demonstrate their usage.

*2-2.6 The fire apparatus driver/operator, given a fire department vehicle, shall demonstrate the following driving tests:

(a) Serpentine
(b) Alley dock
(c) Opposite alley pull in
(d) Diminishing clearance
(e) Straight line
(f) Turn around.

*2-2.7 The fire apparatus driver/operator shall identify and demonstrate the theory and principles of defensive driving techniques.

2-3 Driving/Operating, Emergency Vehicles.

2-3.1 The fire apparatus driver/operator who is assigned to drive/operate any fire department emergency vehicle shall also meet the requirements of Sections 2-1 and 2-2, Chapter 2, of this Standard.

2-3.2 The fire apparatus driver/operator shall identify all state and local laws, including rules and regulations governing the safe driving and operation of all fire department vehicles of the authority having jurisdiction, on emergency response.

2-3.3 The fire apparatus driver/operator shall identify and demonstrate the theory and principles of defensive driving techniques related to emergency response driving.

*2-3.4 The first apparatus driver/operator, under emergency response conditions, shall demonstrate the legal and safe driving, positioning, and operating of assigned fire department vehicles of the authority having jurisdiction.

Chapter 3 Apparatus Equipped with a Fire Pump

3-1 General.

3-1.1 The fire apparatus driver/operator shall demonstrate the performance of routine tests, inspections, and servicing functions required to assure the operational status of fire department pumpers, including:

(a) Battery check
(b) Booster tank level (if applicable)
(c) Braking system
(d) Coolant system
(e) Electrical system
(f) Fueling
(g) Lubrication
(h) Oil levels
(i) Pump
(j) Tire care
(k) Tools, appliances, and equipment.

3-1.2 The fire apparatus driver/operator shall identify the operating principles of single stage and multiple stage centrifugal fire pumps.

3-1.3 The fire apparatus driver/operator, given pump models or diagrams, shall identify the major components and trace the flow of water through single stage and multiple stage centrifugal pumps.

3-1.4 The fire apparatus driver/operator shall identify the percentages of rated capacity, rated pressures, and the capacity in gallons per minute at the rated pressures a fire department pumper is designed to deliver.

***3-1.5** The fire apparatus driver/operator, given a fire department pumper and the necessary equipment, shall demonstrate an annual pumper service test.

3-1.6 The fire apparatus driver/operator shall identify the following conditions that may result in pump damage or unsafe operation, and identify corrective measures:

(a) Cavitation
(b) Leaking fuel, oil, or water
(c) Over-heating
(d) Unusual noises
(e) Vibrations
(f) Water hammer.

*3-1.7 The fire apparatus driver/operator, given a fire department pumper, shall demonstrate the following driving tests:

(a) Serpentine
(b) Alley dock
(c) Opposite alley pull in
(d) Diminishing clearance
(e) Straight line
(f) Turn around.

3-2 Water Supply.

3-2.1 The fire apparatus driver/operator shall identify incrustation, tuberculation, and sedimentation, and the effects on the carrying capacities of water mains.

3-2.2 The fire apparatus driver/operator shall identify the types of hydrants used within the jurisdiction, including descriptions of:

(a) Connection size and type of thread of discharge openings
(b) Construction and operation of drain valve
(c) Direction of operation of the main valve
(d) Internal diameter of hydrant barrel
(e) Maximum friction loss in the hydrant
(f) Procedures and policies of hydrant locations.

3-2.3 The fire apparatus driver/operator shall identify the size of mains and the available fire flows in various areas specified by the authority having jurisdiction.

3-2.4 The fire apparatus driver/operator shall identify problems related to flows from dead end water mains.

3-2.5 The fire apparatus driver/operator, given reference material, shall identify and explain the approximate pressure-discharge relationship for various water pipe sizes.

3-2.6 The fire apparatus driver/operator shall identify the pipe sizes used in water distribution systems for residential, business, and industrial districts served by the authority having jurisdiction.

3-2.7 The fire apparatus driver/operator shall identify at least two causes of increased resistance or friction loss with water flowing in water mains.

3-3 Sprinklers and Standpipes.

3-3.1 The fire apparatus driver/operator, given a check valve on the fire department connection to an automatic sprinkler

system, shall demonstrate the direction of flow of water through the valve.

3-3.2 The fire apparatus driver/operator shall demonstrate the method specified by the authority having jurisdiction for augmenting water supplies to sprinkler systems.

3-3.3 The fire apparatus driver/operator, given specific information on a sprinkler system, shall identify the number of sprinkler heads that can be adequately supplied with water by various capacity rated fire department pumpers.

3-3.4 The fire apparatus driver/operator, given specific information on a sprinkler system, shall demonstrate the minimum hose layouts and pump discharge pressure required to adequately supply that sprinkler system.

3-3.5 The fire apparatus driver/operator shall demonstrate the method specified by the authority having jurisdiction for supplying water to a dry standpipe system.

3-3.6 The fire apparatus driver/operator shall demonstrate the method specified by the authority having jurisdiction for supplementing water supplies to a standpipe system.

3-4 Hydraulic Calculations.

3-4.1 The fire apparatus driver/operator shall demonstrate the principles of friction loss as they relate to:

(a) Internal diameter of hose
(b) Length of hose line
(c) Manner in which hose lines are laid
(d) Physical condition of hose
(e) Pressure
(f) Use of appliances
(g) Use of multiple hose lines
(h) Use of various nozzles
(i) Velocity of flow.

3-4.2 The fire apparatus driver/operator shall identify the following types of fluid pressure encountered in the fire service:

(a) Flow pressure
(b) Negative pressure
(c) Normal operating pressure
(d) Residual pressure
(e) Static pressure.

3-4.3 The fire apparatus driver/operator shall identify the

following terms that relate to the basic principles of fire service hydraulics:

(a) Atmospheric pressure
(b) Capacity
(c) Displacement
(d) Flow (GPM)
(e) Friction loss
(f) Head pressure (back pressure)
(g) Hydrant pressure
(h) Net engine pressure
(i) Nozzle reaction
(j) Pounds per square inch
(k) Pump discharge pressure
(l) Vacuum
(m) Velocity
(n) Water hammer.

*3-4.4 The fire apparatus driver/operator shall demonstrate the use of proportions in mathematical calculations as required to solve fire department pumper hydraulics problems.

*3-4.5 The fire apparatus driver/operator shall identify and demonstrate the determination and use of square roots as required to solve fire department pumper hydraulic problems.

*3-4.6 The fire apparatus driver/operator shall identify and demonstrate the use of fractions, percentages, and decimal fractions in mathematical calculations as required to solve fire department pumper hydraulic problems.

*3-4.7 The fire apparatus driver/operator shall demonstrate the use of simple algebraic formulas required to solve fire department pumper hydraulic problems.

*3-4.8 The fire apparatus driver/operator, given a series of fire ground situations and using the written formulas specified by the authority having jurisdiction, shall determine:

(a) Nozzle or pump discharge pressures when the length and size of hose, and size of nozzle are given.
(b) Water flow in gallons per minute when the diameter of the orifice and pressure at the orifice are given.
(c) The friction loss in the supply and attack lines, used by the authority having jurisdiction, when the GPM flow is given.
(d) Friction loss in siamesed lines when size of hose and GPM flow are given.
(e) Friction loss in wyed lines when size of hose and GPM flow are given.

(f) Friction loss in multiple lines when the size of hose and GPM flow are given.
(g) An estimated remaining available volume from a hydrant while pumping a given volume.

3-4.9 The fire apparatus driver/operator, given a series of fire ground situations, shall calculate correct pump discharge pressure, GPM, friction loss, and nozzle pressure, using mental formulas specified by the authority having jurisdiction.

3-4.10 The fire apparatus driver/operator, given a series of fire ground situations involving various operating pressures, shall demonstrate the formula for calculation of nozzle reaction of hand and master streams used by the authority having jurisdiction.

3-4.11 The fire apparatus driver/operator, given the necessary information, shall compute the maximum lift of a fire department pumper.

3-5 Apparatus Systems.

3-5.1 The fire apparatus driver/operator shall identify three methods of power transfer from the vehicle engine to the pump.

3-5.2 The fire apparatus driver/operator shall identify the theory and principles of pumper priming systems.

3-5.3 The fire apparatus driver/operator shall identify the theory and principles of pumper pressure relief systems and pressure control governors.

3-5.4 The fire apparatus driver/operator, given a fire department pumper, shall identify all gages and demonstrate their usage.

3-5.5 The fire apparatus driver/operator shall identify the auxiliary cooling systems, and show their function.

3-6 Operations.

3-6.1 The fire apparatus driver/operator, given a fire department pumper used by the authority having jurisdiction, shall demonstrate the method(s) of power transfer from vehicle engine to pump.

3-6.2 The fire apparatus driver/operator, given a fire department pumper and a series of fire ground situations, shall produce effective hand and master streams specified by the authority having jurisdiction.

3-6.3 The fire apparatus driver/operator, given a fire department pumper, shall identify the principle of drafting water, and demonstrate a systems check when the pumper will not draft.

3-6.4 The fire apparatus driver/operator shall demonstrate how to operate the different types of fire department pumpers used by the authority having jurisdiction.

3-6.5 The fire apparatus driver/operator, given a fire department pumper, shall demonstrate, by actual use, procedures for pumping:

(a) At maximum delivery rate from the apparatus water tank
(b) From a hydrant, at maximum rated capacity
(c) From draft, at maximum rated capacity
(d) In a relay operation
(e) In a tandem pumping operation
    1. Two pumpers in parallel
    2. Two pumpers in series.

3-6.6 The fire apparatus driver/operator, given a fire department pumper and a simulated fire scene, shall demonstrate proper maneuvering and positioning of the apparatus to function from the given source of water.

3-6.7 The fire apparatus driver/operator, given a fire department pumper with a multiple stage pump, shall demonstrate the use of the volume/pressure transfer valve under actual pumping conditions.

3-6.8 The fire apparatus driver/operator, given a fire department pumper, shall locate, identify, and demonstrate the operation of all equipment carried on or attached to that pumper.

3-6.9 The fire apparatus driver/operator shall identify the characteristics and limitations of hard suction and soft suction pumper supply hose.

3-6.10 The fire apparatus driver/operator, given a selection of nozzles and tips, shall identify the type, design, operation, nozzle pressure, and flow in GPM for proper operation of each.

3-6.11 The fire apparatus driver/operator, given a fire department pumper, shall demonstrate the operation of the pumper pressure relief system, or the pressure control governor, or both.

3-6.12 The fire apparatus driver/operator, given a fire department pumper, shall demonstrate the operation of the auxiliary cooling system.

Chapter 4 Apparatus Equipped with an Aerial Ladder

*4-1 General

4-1.1 The fire apparatus driver/operator shall demonstrate the performance of routine tests, inspections, and servicing functions required to assure the operational status of fire department aerial ladder apparatus, including:

(a) Battery check
(b) Booster tank level (if applicable)
(c) Braking system
(d) Coolant system
(e) Electrical system
(f) Fueling
(g) Hydraulic Systems
(h) Lubrication
(i) Oil levels (engine and hydraulic)
(j) Tire care
(k) Tools, appliances, and equipment.

4-1.2 The fire apparatus driver/operator shall identify the following conditions indicating possible aerial ladder apparatus malfunction(s) and identify corrective measures for overcoming the malfunction(s):

(a) Leaking fuel, motor oil, hydraulic fluid, or water
(b) Overheating
(c) Unusual noises
(d) Vibrations.

4-1.3 The fire apparatus driver/operator shall identify the factors affecting the effective range of ladder pipe master streams.

4-1.4 The fire apparatus driver/operator shall identify the causes and hazards of nozzle reaction of ladder pipe master streams.

***4-1.5** The fire apparatus driver/operator shall identify the ladder apparatus and the necessary equipment, shall demonstrate an aerial ladder test.

***4-1.6** The fire apparatus driver/operator, given an aerial ladder apparatus, shall demonstrate the following driving tests:

(a) Serpentine
(b) Alley dock
(c) Opposite alley pull in
(d) Diminishing clearance
(e) Straight line
(f) Turn around.

***4-2 Apparatus Systems.**

4-2.1 The fire apparatus driver/operator, given an aerial ladder apparatus, shall identify the principles of that aerial ladder apparatus hydraulic pressure relief system.

4-2.2 The fire apparatus driver/operator, given an aerial ladder apparatus, shall identify all gages and demonstrate their usage.

4-2.3 The fire apparatus driver/operator shall identify the theory and principles, and demonstrate the operating procedures of aerial ladder apparatus, in use by the authority having jurisdiction, in the following areas:

(a) Cable systems
(b) Communication systems
(c) Electrical systems
(d) Emergency operating systems
(e) Hydraulic systems
(f) Locking devices
(g) Manual systems
(h) Stabilizing systems.

4-2.4 The fire apparatus driver/operator, given an aerial ladder apparatus, shall identify the theory and principles of the safety systems for the aerial ladder as specified by the manufacturer.

***4-2.5** The fire apparatus driver/operator, given an aerial ladder apparatus, shall identify system overrides, and the hazards involved in overriding the systems.

***4-3 Operations.**

***4-3.1** The fire apparatus driver/operator shall demonstrate safe operational limitations of aerial ladder apparatus, in use by the authority having jurisdiction, in the following areas:

(a) Angle
(b) Ground conditions
(c) Height
(d) Master stream
(e) Topography
(f) Weather conditions
(g) Weight load
    1. Supported
    2. Unsupported.

4-3.2 The fire apparatus driver/operator shall demonstrate all safety procedures for any given operation involving an aerial ladder apparatus specified by the authority having jurisdiction.

4-3.3 The fire apparatus driver/operator, given an aerial ladder apparatus and a simulated fire scene with the apparatus properly positioned, shall demonstrate the applicable procedures for stabilizing the apparatus in the following areas:

(a) Axle locks (spring locks)
(b) Braking
(c) Outriggers or ground jacks
(d) Wheel chocks.

4-3.4 The fire apparatus driver/operator, given an aerial ladder apparatus in use by the authority having jurisdiction and a simulated fire scene, shall demonstrate proper maneuvering and positioning of the apparatus for rescue and fire fighting operations.

4-3.5 The fire apparatus driver/operator, given an aerial ladder apparatus and a simulated fire scene with the apparatus properly positioned, shall demonstrate operating the aerial ladder in:

(a) Raising
(b) Lowering
(c) Extending
(d) Retracting
(e) Locking
(f) Unlocking
(g) Rotating
(h) Placing to roof
(i) Positioning in window.

4-3.6 The fire apparatus driver/operator shall demonstrate the emergency operating procedures necessary to control aerial ladder apparatus following equipment or power failure.

4-3.7 The fire apparatus driver/operator, given an aerial ladder apparatus, shall demonstrate the method of power transfer from the vehicle or auxiliary engine to the hydraulic or power take-off system for operation of the equipment.

***4-3.8** The fire apparatus driver/operator, given an aerial ladder apparatus, shall demonstrate the proper application of lifting and positioning equipment using the aerial ladder.

4-3.9 The fire apparatus driver/operator, given an aerial ladder apparatus, shall locate, identify, and demonstrate the operation of all equipment carried on or attached to that aerial ladder apparatus.

Chapter 5 Apparatus Equipped with a Tiller

5-1 Operations.

5-1.1 The fire apparatus driver/operator, given a tiller aerial ladder apparatus, shall demonstrate the signaling system between the tiller operator's position and the driver's compartment.

5-1.2 The fire apparatus driver/operator, given a tiller aerial ladder apparatus, shall demonstrate how to operate the tiller as the apparatus is driven from quarters, and is backed into quarters.

5-1.3 The fire apparatus driver/operator, given a tiller aerial ladder apparatus, shall demonstrate how to operate the tiller as the apparatus is driven both forward and in reverse, including both right and left 90 degree turns in both forward and reverse.

5-1.4 The fire apparatus driver/operator, given a tiller aerial ladder apparatus and simulated or actual on-street and off-street conditions, shall demonstrate how to operate the tiller as the apparatus is driven both forward and in reverse in both on-street and off-street conditions.

5-1.5 The fire apparatus driver/operator, given a tiller aerial ladder apparatus and several different simulated fire ground situations, shall identify and demonstrate how to operate the tiller for positioning the apparatus for use of the aerial ladder.

5-1.6 The fire apparatus driver/operator, given a tiller aerial ladder apparatus with a removable tiller operator's position, if this type of tiller apparatus is used by the authority having jurisdiction, shall demonstrate how to clear the tiller assembly in preparation for raising the aerial ladder.

5-1.7 The fire apparatus driver/operator, given a tiller aerial ladder apparatus, shall identify and demonstrate the operations of the tiller operator when the aerial ladder is being lowered into its bed.

5-1.8 The fire apparatus driver/operator, given a tiller aerial ladder apparatus with a removable tiller operator's position, if this type of tiller apparatus is used by the authority having jurisdiction, shall demonstrate how to restore the tiller assembly for road operation after the aerial ladder has been bedded.

Chapter 6 Apparatus Equipped with an Elevating Platform

*6-1 General.

6-1.1 The fire apparatus driver/operator shall demonstrate the performance of routine tests, inspections, and servicing functions required to assure the operational status of fire department elevating platform apparatus, including:

(a) Battery check
(b) Booster tank level (if applicable)
(c) Braking system
(d) Coolant system
(e) Electrical system
(f) Fueling
(g) Hydraulics systems
(h) Lubrication
(i) Oil levels (engine and hydraulic)
(j) Tire care
(k) Tools, appliances, and equipment.

6-1.2 The fire apparatus driver/operator shall identify the following conditions indicating possible elevating platform apparatus malfunction(s) and identify corrective measures for overcoming the malfunction(s):

(a) Leaking fuel, motor oil, hydraulic fluid, or water
(b) Overheating
(c) Unusual noises
(d) Vibrations.

6-1.3 The fire apparatus driver/operator shall identify the factors affecting the effective range of elevating platform master streams.

6-1.4 The fire apparatus driver/operator shall identify the causes and hazards of nozzle reaction of elevating platform master streams.

***6-1.5** The fire apparatus driver/operator, given an elevating platform apparatus and the necessary equipment, shall demonstrate the testing of the elevating platform.

***6-1.6** The fire apparatus driver/operator, given an elevating platform apparatus, shall demonstrate the following driving tests:

(a) Serpentine
(b) Alley dock
(c) Opposite alley pull in
(d) Diminishing clearance
(e) Straight line
(f) Turn around.

***6-2 Apparatus Systems.**

6-2.1 The fire apparatus driver/operator, given an elevating platform apparatus, shall identify the principles of that elevating platform apparatus hydraulic pressure relief system.

6-2.2 The fire apparatus driver/operator, given an elevating platform apparatus, shall identify all gages and demonstrate their usage.

6-2.3 The fire apparatus driver/operator shall identify the theory and principles, and demonstrate the operating procedures of elevating platform apparatus, in use by the authority having jurisdiction, in the following areas:

(a) Cable systems
(b) Communications systems
(c) Electrical systems
(d) Emergency operating systems
(e) Hydraulic systems
(f) Manual systems
(g) Stabilizing systems.

6-2.4 The fire apparatus driver/operator, given an elevating platform apparatus, shall identify the theory and principles of the safety systems for the elevating platform and booms as specified by the manufacturer.

***6-2.5** The fire apparatus driver/operator, given an elevating platform apparatus, shall identify system overrides and the hazards involved in overriding the systems.

***6-3 Operations.**

***6-3.1** The fire apparatus driver/operator shall demonstrate safe operational limitations of elevating platform apparatus, in use by the authority having jurisdition in the following areas:

(a) Angle
(b) Ground conditions
(c) Height
(d) Master stream
(e) Topography
(f) Weather conditions
(g) Weight load.

6-3.2 The fire apparatus driver/operator shall demonstrate all safety procedures for any given operation involving an elevating platform apparatus specified by the authority having jurisdiction.

6-3.3 The fire apparatus driver/operator, given an elevating platform apparatus and a simulated fire scene with the apparatus properly positioned, shall demonstrate the applicable procedures for stabilizing the apparatus in the following areas:

(a) Braking
(b) Outriggers or ground jacks
(c) Wheel chocks.

6-3.4 The fire apparatus driver/operator, given an elevating platform apparatus in use by the authority having jurisdiction and a simulated fire scene, shall demonstrate proper maneuvering and positioning of the apparatus for rescue and fire fighting operations.

6-3.5 The fire apparatus driver/operator, given an elevating platform apparatus and a simulated fire scene with the apparatus properly positioned, shall demonstrate using the elevating platform in:

(a) Raising
(b) Lowering
(c) Extending (if applicable)
(d) Retracting (if applicable)
(e) Locking
(f) Unlocking
(g) Rotating
(h) Placing to roof
(i) Positioning at window.

6-3.6 The fire apparatus driver/operator shall demonstrate the emergency operating procedures necessary to control elevating platform apparatus following equipment or power failure.

6-3.7 The fire apparatus driver/operator, given an elevating platform apparatus, shall demonstrate the method of power transfer from the vehicle or auxiliary engine to the hydraulic or power take-off systems for operation of the equipment.

***6-3.8** The fire apparatus driver/operator, given an elevating platform apparatus, shall demonstrate the proper application of lifting and positioning equipment using the elevating platform.

6-3.9 The fire apparatus driver/operator shall demonstrate all safety procedures for any given operation involving an elevating platform apparatus, as specified by the authority having jurisdiction.

6-3.10 The fire apparatus driver/operator, given an elevating platform apparatus, shall locate, identify, and demonstrate the operation of all equipment carried on or attached to that elevating platform apparatus.

Appendix A

This Appendix is not a part of this NFPA Standard, Fire Apparatus Driver/Operator, but is included for information purposes only.

A-1-3.3 Part of the requirements of Chapter 1 of this Standard state that the fire fighter shall meet the requirements of Fire Fighter II as specified in NFPA Standard 1001, *Fire Fighter Professional Qualifications,* 1974, before being certified as a fire apparatus driver/operator. This means that the individual applying for certification as a fire apparatus driver/operator has met *all* of the objectives in Chapters 1, 2, 3, and 4 of Standard 1001. These objectives from Standard 1001 include further requirements in areas such as: fire hose, nozzles and appliances; fire streams; water supplies; and sprinklers, among others. These, of course, are in addition to the requirements of this Standard. Any fire fighter who has already been certified as a Fire Fighter II should review the requirements of the stated chapters in Standard 1001, as the person may be tested on the requirements included therein.

A-1-3.4 See **A-1-3.3.**

A-1.4.10 See **A-1-3.3.**

A-2-2.2 Although the frequency of the medical evaluation is not specified, it is recommended that the medical evaluation be given on at least an annual basis.

A-2-2.3 The fire fighter needs basic mathematical competence to complete the records and reports required by the authority having jurisdiction. Further mathematical knowledge is required and explained in Section 3-4 and A-3-4.4.

A-2-2.6 (a) **Serpentine.** The serpentine exercise measures a driver's ability to steer the apparatus in close limits without stopping. The exercise should be conducted with the apparatus moving first backward then forward. The course or path of travel for this exercise can be established by placing three barrels in a line and spaced 34 feet apart. Adequate space must be provided on each side of the barrels for the apparatus to move freely. A driver is required to drive the apparatus along the left side of the barrels in a straight line and stop just beyond the last barrel. The driver then must back the apparatus between the barrels by passing to the left of No. 1, to the right of No. 2, and to the left of No. 3. At this point, the driver must stop the vehicle and then drive it forward between the barrels by passing to the right of No. 3, to the left of No. 2, and to the right of No. 1.