

Fire Apparatus Driver/Operator

Certification Training Standards Guide (2017)

Publication Date: August 2021

This CTS guide utilizes the following NFPA standards to provide the qualifications for State Fire Training's Standard for Fire Apparatus Driver/Operator (2017) certification:

- *NFPA 1002: Standard for Fire Apparatus Driver/Operator Professional Qualifications (2017)*

State Fire Training coordinated the development of this CTS guide. Before its publication, the Statewide Training and Education Advisory Committee (STEAC) and the State Board of Fire Services (SBFS) recommended this CTS guide for adoption by the Office of the State Fire Marshal (OSFM).

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Cadre – 2021 Update

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How to Read a CTS Guide

Overview

A certification training standard (CTS) guide lists the requisite knowledge, skills, and job performance requirements an individual must complete in order to become certified in a specific job function.

It also documents and justifies the OSFM-approved revisions to the certification's NFPA standard, and identifies where each certification training standard is taught (course plan), tested (skill sheets), and validated (task book).

Individuals aspiring to meet State Fire Training's certification training standards must do so in accordance with the codes, standards, regulations, policies, and standard operating procedures applicable within their own agency or jurisdiction.

Format

Each certification training standard is comprised of eight sections.

Section Heading

Training standards are grouped by section headings that describe a general category. For example, the Fire Fighter 1 CTS guide includes the following section headings: NFPA Requirements, Fire Department Communications, Fireground Operations, and Preparedness and Maintenance.

Training Standard Title

The training standard title provides a general description of the performance requirement contained within the individual standard.

Authority

The CTS guide references each individual standard with one or more paragraphs of the corresponding National Fire Protection Association (NFPA) Professional Qualifications. This ensures that each fire service function within California's certification system meets or exceeds NFPA standards.

When California requirements exceed the NFPA standard, the CTS guide cites the Office of the State Fire Marshal as the authority and prints the corresponding information in *italics*.

Job Performance Requirements

This segment includes a written statement that describes a specific job-related task, the items an individual needs to complete the task, and measurable or observable outcomes.

Requisite Knowledge

This segment lists the knowledge that an individual must acquire in order to accomplish the job performance requirement.

Requisite Skills

This segment lists the skills that an individual must acquire in order to accomplish the job performance requirement.

Content Modification

This table documents and justifies any revisions to the NFPA standard that the development or validation cadres make during the development of a CTS guide.

Cross Reference

This table documents where each training standard is taught (course plan), tested (skill sheets), and validated (task book).

Fire Apparatus

Section 1: Preventative Maintenance

1-1: Perform Visual and Operational Checks

Authority

1. *NFPA 1002: Standard for Fire Apparatus Driver/Operator Professional Qualifications (2017)*
 - *Paragraph 4.2.1*

Job Performance Requirement

Perform visual and operational checks on the systems and components specified in the following list (battery(ies), braking system, coolant system, electrical system, fuel, hydraulic fluids, oil, tires, steering system, belts, tools, appliances, equipment, built-in safety features), given a fire *apparatus*, its manufacturer's specifications, *tools and equipment*, and policies and procedures of the jurisdiction, so that the operational status of the vehicle is verified.

Requisite Knowledge

1. *Identify manufacturer specifications and requirements*
2. *Identify policies and procedures of the jurisdiction*

Requisite Skills

1. *Use tools and equipment*
2. *Recognize system problems and out-of-service criteria*
3. *Correct any deficiency noted according to policies and procedures and/or manufacturer specifications and requirements*

Content Modification

Block	Modification	Justification
JPR	Changes "fire department vehicle" to "fire apparatus".	None given. (2014)
JPR	Added "tools and equipment".	Required to perform operational checks. (2014)
RS1	Added "and equipment".	Required to perform operational checks. (2014)
RS2	Added "and out-of-service criteria".	None given. (2014)
RS3	Added "and/or manufacturer specifications and requirements".	None given. (2014)

Cross Reference

Course Plan	Skill Sheets	Task Book
Fire Apparatus Driver/Operator 1A: Fire Apparatus Driver/Operator <ul style="list-style-type: none">• Topic 2-1	N/A	Pumping Apparatus Driver/Operator <ul style="list-style-type: none">• JPR 1 Aerial Apparatus Driver/Operator <ul style="list-style-type: none">• JPR 1 Tillered Apparatus Driver/Operator <ul style="list-style-type: none">• JPR1 Wildland Fire Apparatus Driver/Operator <ul style="list-style-type: none">• JPR1 Water Tender Driver/Operator <ul style="list-style-type: none">• JPR 1

1-2: Document Visual and Operational Checks

Authority

1. *NFPA 1002: Standard for Fire Apparatus Driver/Operator Professional Qualifications (2017)*
 - *Paragraph 4.2.2*

Job Performance Requirement

Document visual and operational checks, given maintenance and inspection forms, so that all items are checked for operation and deficiencies are reported.

Requisite Knowledge

1. *Identify AHJ requirements for documenting maintenance performed*
2. *Describe the importance of keeping accurate records*

Requisite Skills

1. *Use tools and equipment*
2. *Complete all related AHJ forms*

Content Modification

Block	Modification	Justification
RK1	Changed “departmental” to “AHJ”.	None given. (2014)
RS2	Changed “departmental” to “AHJ”.	None given. (2014)

Cross Reference

Course Plan	Skill Sheets	Task Book
Fire Apparatus Driver/Operator 1A: Fire Apparatus Driver/Operator <ul style="list-style-type: none"> • <i>Topic 2-2</i> 	N/A	Pumping Apparatus Driver/Operator <ul style="list-style-type: none"> • <i>JPR 2</i> Aerial Apparatus Driver/Operator <ul style="list-style-type: none"> • <i>JPR 2</i> Tillered Apparatus Driver/Operator <ul style="list-style-type: none"> • <i>JPR 2</i> Wildland Fire Apparatus Driver/Operator <ul style="list-style-type: none"> • <i>JPR 2</i> Water Tender Driver/Operator <ul style="list-style-type: none"> • <i>JPR 2</i>

Section 2: Operations

2-1: Operate a Fire Apparatus

Authority

1. *NFPA 1002: Standard for Fire Apparatus Driver/Operator Professional Qualifications (2017)*
 - *Paragraph 4.3.1*
 - *Paragraph 4.3.6*

Job Performance Requirement

Operate a fire apparatus *during emergency and non-emergency responses* using defensive driving techniques, given *an apparatus, an assignment, a predetermined route on a public way that incorporates the maneuvers and features that the driver/operator is expected to encounter during normal operations, and AHJ policies and procedures*, so that control of the apparatus is maintained and the *apparatus* is operated in compliance with all applicable state and local laws and *AHJ* rules and regulations.

Requisite Knowledge

1. *Describe the importance of donning passenger restraint devices and ensuring crew safety*
2. *Identify common causes of fire apparatus accidents*
3. *Recognize that fire apparatus driver/operators are responsible for the safe and prudent operation of the apparatus under all conditions*
4. *Describe the effects of liquid surge, braking reaction time, and load factors on apparatus control*
5. *Describe the effects of high center of gravity on rollover potential, general steering reactions, speed, and centrifugal force*
6. *Identify applicable laws and regulations*
7. *Describe principles of skid avoidance, night driving, shifting, and gear patterns*
8. *Describe how to apply automatic braking systems in wet and dry conditions*
9. *Describe how to negotiate intersections, railroad crossings, and bridges*
10. *Identify weight and height limitations for both roads and bridges*
11. *Describe how to identify and operate automotive gauges*
12. *Identify operational limits of different types of fire apparatus*

Requisite Skills

1. *Operate passenger restraint devices*
2. *Maintain safe following distances*
3. *Maintain control of the apparatus while accelerating, decelerating, and turning, given road, weather, and traffic conditions*
4. *Operate under adverse environmental or driving surface conditions*
5. *Use automotive gauges and controls*

Content Modification

Block	Modification	Justification
JPR	Changed “vehicle” to “apparatus”.	Changed for consistency. (2014)
JPR	Changed “departmental” to “AHJ”.	Changed for consistency. (2014)
JPR	Added “during emergency and non-emergency responses.”	None given. (2014)
JPR	Added “and AHJ policies and procedures”.	None given. (2014)
RK3	Changed word order.	Word order changed for grammar consistency. (2014)
RK3	Added “/operators”.	Added to match certification role. (2014)
RK3	Changed “vehicle” to “apparatus”.	Changed for consistency. (2014)
RK4	Changed “vehicle” to “apparatus”.	Changed for consistency. (2014)
RK12	Added “of different types of fire apparatus”.	Added to narrow scope of learning objective. (2014)
RS3	Changed “vehicle” to “apparatus”.	Changed for consistency. (2014)

Cross Reference

Course Plan	Skill Sheets	Task Book
Fire Apparatus Driver/Operator 1A: Fire Apparatus Driver/Operator <ul style="list-style-type: none"> • <i>Topic 3-1</i> • <i>Topic 3-2</i> 	N/A	Pumping Apparatus Driver/Operator <ul style="list-style-type: none"> • <i>JPR 3</i> Aerial Apparatus Driver/Operator <ul style="list-style-type: none"> • <i>JPR 3</i> Tillered Apparatus Driver/Operator <ul style="list-style-type: none"> • <i>JPR 3</i> Wildland Fire Apparatus Driver/Operator <ul style="list-style-type: none"> • <i>JPR 3</i> Water Tender Driver/Operator <ul style="list-style-type: none"> • <i>JPR 3</i>

2-2: Back a Fire Apparatus from a Roadway into a Restricted Space

Authority

1. *NFPA 1002: Standard for Fire Apparatus Driver/Operator Professional Qualifications (2017)*
 - *Paragraph 4.3.2*

Job Performance Requirement

Back a *fire apparatus* from a roadway into restricted spaces on both the right and left sides of the *apparatus*, given a fire apparatus, a spotter where the spotter assists the driver in performing the maneuver, and restricted spaces 12 ft (3.7 m) in width, requiring 90-degree right-hand and left-hand turns from the roadway, so that the vehicle is parked within the restricted areas without have to stop and pull forward and without striking obstructions.

Requisite Knowledge

1. *Identify fire apparatus dimensions*
2. *Describe turning characteristics*
3. *Describe spotter signaling*
4. *Describe principles of safe fire apparatus operation*

Requisite Skills

1. *Use mirrors*
2. *Judge fire apparatus clearance*

Content Modification

Block	Modification	Justification
JPR	Changed "vehicle" to "fire apparatus" and "apparatus".	Changed for consistency. (2014)
RK1	Changed "vehicle" to "fire apparatus".	Changed for consistency. (2014)
RK4	Changed "vehicle" to "fire apparatus".	Changed for consistency. (2014)
RS2	Changed "vehicle" to "fire apparatus".	Changed for consistency. (2014)

Cross Reference

Course Plan	Skill Sheets	Task Book
Fire Apparatus Driver/Operator 1A: Fire Apparatus Driver/Operator <ul style="list-style-type: none"> • <i>Topic 3-3</i> 	N/A	Pumping Apparatus Driver/Operator <ul style="list-style-type: none"> • <i>JPR 4</i> Aerial Apparatus Driver/Operator <ul style="list-style-type: none"> • <i>JPR 4</i> Tillered Apparatus Driver/Operator <ul style="list-style-type: none"> • <i>JPR 4</i> Wildland Fire Apparatus Driver/Operator <ul style="list-style-type: none"> • <i>JPR 4</i> Water Tender Driver/Operator

Fire Apparatus
Section 2: Operations

		<ul style="list-style-type: none">• <i>JPR 4</i>
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2-3: Maneuver a Fire Apparatus around Obstructions

Authority

1. *NFPA 1002: Standard for Fire Apparatus Driver/Operator Professional Qualifications (2017)*
 - *Paragraph 4.3.3*

Job Performance Requirement

Maneuver a *fire apparatus* around obstructions on a roadway while moving forward and in reverse, given a fire apparatus, a spotter where the spotter assists the driver in performing the maneuver, and a roadway with obstructions, so that the vehicle is maneuvered through the obstructions without stopping to change the direction of travel and without striking any obstructions.

Requisite Knowledge

1. *Identify fire apparatus dimensions*
2. *Describe turning characteristics*
3. *Describe the effects of liquid surge*
4. *Describe spotter signaling*
5. *Describe principles of safe fire apparatus operation*

Requisite Skills

1. *Use mirrors*
2. *Judge fire apparatus clearance*

Content Modification

Block	Modification	Justification
JPR	Changed "vehicle" to "fire apparatus".	Changed for consistency. (2014)
RK1	Changed "vehicle" to "fire apparatus".	Changed for consistency. (2014)
RK5	Changed "vehicle" to "fire apparatus".	Changed for consistency. (2014)
RS2	Changed "vehicle" to "fire apparatus".	Changed for consistency. (2014)

Cross Reference

Course Plan	Skill Sheets	Task Book
Fire Apparatus Driver/Operator 1A: Fire Apparatus Driver/Operator <ul style="list-style-type: none"> • <i>Topic 3-4</i> 	N/A	Pumping Apparatus Driver/Operator <ul style="list-style-type: none"> • <i>JPR 5</i> Aerial Apparatus Driver/Operator <ul style="list-style-type: none"> • <i>JPR 5</i> Tillered Apparatus Driver/Operator <ul style="list-style-type: none"> • <i>JPR 5</i> Wildland Fire Apparatus Driver/Operator <ul style="list-style-type: none"> • <i>JPR 5</i> Water Tender Driver/Operator

Fire Apparatus
Section 2: Operations

		<ul style="list-style-type: none">• <i>JPR 5</i>
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2-4: Turn a Fire Apparatus 180 Degrees within a Confined Space

Authority

1. *NFPA 1002: Standard for Fire Apparatus Driver/Operator Professional Qualifications (2017)*
 - *Paragraph 4.3.4*

Job Performance Requirement

Turn a fire apparatus 180 degrees within a confined space, given a fire apparatus, a spotter for backing up, and an area in which the *apparatus* cannot perform a U-turn without stopping and backing up, so that the *apparatus* is turned 180 degrees without striking obstructions within the given space.

Requisite Knowledge

1. *Identify fire apparatus dimensions*
2. *Describe turning characteristics*
3. *Describe the effects of liquid surge*
4. *Describe spotter signaling*
5. *Describe principles of safe fire apparatus operation*

Requisite Skills

1. *Use mirrors*
2. *Judge fire apparatus clearance*

Content Modification

Block	Modification	Justification
JPR	Changed "vehicle" to "apparatus".	Changed for consistency. (2014)
RK1	Changed "vehicle" to "apparatus".	Changed for consistency. (2014)
RK5	Changed "vehicle" to "apparatus".	Changed for consistency. (2014)
RS2	Changed "vehicle" to "apparatus".	Changed for consistency. (2014)

Cross Reference

Course Plan	Skill Sheets	Task Book
Fire Apparatus Driver/Operation 1A: Fire Apparatus Driver/Operator <ul style="list-style-type: none"> • <i>Topic 3-1 (RK3)</i> • <i>Topic 3-5 (RK1, RK2, RK4, RK5, RS1, RS2)</i> 	N/A	Pumping Apparatus Driver/Operator <ul style="list-style-type: none"> • <i>JPR 6</i> Aerial Apparatus Driver/Operator <ul style="list-style-type: none"> • <i>JPR 6</i> Tillered Apparatus Driver/Operator <ul style="list-style-type: none"> • <i>JPR 6</i> Wildland Fire Apparatus Driver/Operator <ul style="list-style-type: none"> • <i>JPR 6</i> Water Tender Driver/Operator <ul style="list-style-type: none"> • <i>JPR 6</i>

2-5: Maneuver a Fire Apparatus in Areas with Restricted Clearances

Authority

1. *NFPA 1002: Standard for Fire Apparatus Driver/Operator Professional Qualifications (2017)*
 - Paragraph 4.3.5

Job Performance Requirement

Maneuver a fire apparatus in areas with restricted horizontal and vertical clearances, given a fire apparatus and a course that requires the operator to move through areas of restricted horizontal and vertical clearances, so that the operator judges the ability of the *apparatus* to pass through the openings, *using continual motion*, and so that no obstructions are struck.

Requisite Knowledge

1. *Identify fire apparatus dimensions*
2. *Describe turning characteristics*
3. *Describe the effects of liquid surge*
4. *Describe spotter signaling*
5. *Describe principles of safe fire apparatus operation*

Requisite Skills

1. *Use mirrors*
2. *Judge fire apparatus clearance*

Content Modification

Block	Modification	Justification
JPR	Changed “vehicle” to “apparatus”.	Changed for consistency. (2014)
JPR	Added “using continual motion”.	Cadre asserts that this is the original intent of the skill. This needs to be accomplished without starting and stopping. Addition makes it consistent with all other JPRs in this chapter. (2021)
RK1	Changed “vehicle” to “apparatus.”	Changed for consistency. (2014)
RK5	Changed “vehicle” to “apparatus.”	Changed for consistency. (2014)
RS2	Changed “vehicle” to “apparatus.”	Changed for consistency. (2014)

Cross Reference

Course Plan	Skill Sheets	Task Book
Fire Apparatus Driver/Operation 1A: Fire Apparatus Driver/Operator <ul style="list-style-type: none"> • <i>Topic 3-1 (RK3)</i> • <i>Topic 3-6 (RK1, RK2, RK4, RK5, RS1, RS2)</i> 	N/A	Pumping Apparatus Driver/Operator <ul style="list-style-type: none"> • <i>JPR 7</i> Aerial Apparatus Driver/Operator <ul style="list-style-type: none"> • <i>JPR 7</i> Tillered Apparatus Driver/Operator <ul style="list-style-type: none"> • <i>JPR 7</i> Wildland Fire Apparatus Driver/Operator <ul style="list-style-type: none"> • <i>JPR 7</i> Water Tender Driver/Operator <ul style="list-style-type: none"> • <i>JPR 7</i>

2-6: Operate All Fixed Systems and Equipment on a Fire Apparatus

Authority

1. *NFPA 1002: Standard for Fire Apparatus Driver/Operator Professional Qualifications (2017)*
 - *Paragraph 4.3.7*

Job Performance Requirement

Operate all fixed systems and equipment on a *fire apparatus* not addressed elsewhere in this standard, given *fixed* systems and equipment, manufacturer’s specifications *and requirements*, *and AHJ* policies and procedures for the systems and equipment, so that each system or piece of equipment is operated in accordance with the applicable instructions and policies.

Requisite Knowledge

1. *Describe manufacturer’s specifications and operating procedures*
2. *Identify policies and procedures of the jurisdiction*

Requisite Skills

1. *Deploy, energize, and monitor the system or equipment*
2. *Recognize and correct system problems*

Content Modification

Block	Modification	Justification
JPR	Replaced “vehicle” with “fire apparatus”.	Replaced for consistency. (2014)
JPR	Added “fixed”.	None given. (2014)
JPR	Replaced “and instructions” with “and requirements”.	None given. (2014)
JPR	Replaced “departmental” with “AHJ”.	Replaced for consistency. (2014)

Cross Reference

Course Plan	Skill Sheets	Task Book
Fire Apparatus Driver/Operation 1A: Fire Apparatus Driver/Operator <ul style="list-style-type: none"> • <i>Topic 3-7</i> 	N/A	Pumping Apparatus Driver/Operator <ul style="list-style-type: none"> • <i>JPR 8</i> Aerial Apparatus Driver/Operator <ul style="list-style-type: none"> • <i>JPR 8</i> Tillered Apparatus Driver/Operator <ul style="list-style-type: none"> • <i>JPR 8</i> Wildland Fire Apparatus Driver/Operator <ul style="list-style-type: none"> • <i>JPR 8</i> Water Tender Driver/Operator <ul style="list-style-type: none"> • <i>JPR 8</i>

Section 3: Fire Department Communications

3-1: Initiate the Response to a Reported Emergency

Authority

1. *NFPA 1002: Standard for Fire Apparatus Driver/Operator Professional Qualifications (2017)*
 - *Paragraph 4.4.1*

Job Performance Requirement

Initiate the response to a reported emergency, given the report of an emergency, fire department SOPs, and communications equipment, so that all necessary information is obtained, communication equipment is operated correctly, and the information is relayed promptly and accurately to the dispatch center. [1001:5.2.1]

Requisite Knowledge

1. *Describe procedures for reporting an emergency*
2. *Identify departmental SOPs for taking and receiving alarms, radio codes, or procedures*
3. *Identify information needs of dispatch center*

Requisite Skills

1. *Operate fire department communications equipment*
2. *Relay information*
3. *Record information*

Content Modification

Block	Modification	Justification

Cross Reference

Course Plan	Skill Sheets	Task Book
Testing and validation for this standard is fulfilled through OSFM Fire Fighter 1 certification.	N/A	N/A

3-2: Receive a Telephone Call

Authority

1. *NFPA 1002: Standard for Fire Apparatus Driver/Operator Professional Qualifications (2017)*
 - Paragraph 4.4.2

Job Performance Requirement

Receive a telephone call, given a fire department phone, so that procedures for answering the phone are used and the caller's information is relayed. [1001:5.2.2]

Requisite Knowledge

1. *Describe fire department procedures for answering nonemergency telephone calls.*

Requisite Skills

1. *Operate fire station telephone and intercom equipment*

Content Modification

Block	Modification	Justification

Cross Reference

Course Plan	Skill Sheets	Task Book
Testing and validation for this standard is fulfilled through OSFM Fire Fighter 1 certification.	N/A	N/A

3-3: Transmit and Receive Radio Messages

Authority

1. *NFPA 1002: Standard for Fire Apparatus Driver/Operator Professional Qualifications (2017)*
 - *Paragraph 4.4.3*

Job Performance Requirement

Transmit and receive messages via the fire department radio, given a fire department radio and operating procedures, so that the information is accurate, complete, clear, and relayed within the time established by the AHJ. [1001:5.2.3]

Requisite Knowledge

1. *Describe departmental radio procedures and etiquette for routine traffic, emergency traffic, and emergency evaluation signals*

Requisite Skills

1. *Operate radio equipment*
2. *Discriminate between routine and emergency traffic*

Content Modification

Block	Modification	Justification

Cross Reference

Course Plan	Skill Sheets	Task Book
Testing and validation for this standard is fulfilled through OSFM Fire Fighter 1 certification.	N/A	N/A

3-4: Activate Emergency Procedures

Authority

1. *NFPA 1002: Standard for Fire Apparatus Driver/Operator Professional Qualifications (2017)*
 - Paragraph 4.4.4

Job Performance Requirement

Activate emergency procedures, given an emergency situation and department SOPs, so that emergency actions can be initiated.

Requisite Knowledge

1. *Describe department SOPs and emergency communication procedures*

Requisite Skills

1. *Activate emergency procedures in accordance with the department's SOPs*

Content Modification

Block	Modification	Justification

Cross Reference

Course Plan	Skill Sheets	Task Book
Testing and validation for this standard is fulfilled through OSFM Fire Fighter 1 certification.	N/A	N/A

Pumping Apparatus

Section 4: Preventative Maintenance

4-1: Fire Pump Driver/Operator Roles and Responsibilities

Authority

1. *NFPA 1002: Standard for Fire Apparatus Driver/Operators Professional Qualifications (2017)*
 - *Paragraph 5.1.1*

Job Performance Requirement

There is no job performance requirement for this standard. [1001:5.1.1]

Requisite Knowledge

1. *Describe the organization of the fire department*
2. *Describe the role of the driver/operator in the organization*
3. *Describe the mission of the fire service*
4. *Describe the fire department's standard operating procedures (SOPs) and rules and regulations as they apply to the driver/operator*
5. *Describe the value of fire and life safety initiatives in support of the fire department mission and to reduce fire fighter line-of-duty injuries and fatalities*
6. *Describe the role of other agencies as they relate to the fire department*
7. *Describe aspects of the fire department's member assistance program*
8. *Describe the importance of physical fitness and a healthy lifestyle to the performance of the duties of a fire fighter*
9. *Identify the critical aspects of NFPA 1500*

Requisite Skills

1. *None*

Content Modification

Block	Modification	Justification

Cross Reference

Course Plan	Skill Sheets	Task Book
Fire Apparatus Driver/Operator 1B: Pumping Apparatus Operations <ul style="list-style-type: none">• Topic 2-1	N/A	N/A

Section 11: Operations

11-1: Operate a Wildland Fire Apparatus

Authority

1. *NFPA 1002: Standard for Fire Apparatus Driver/Operator Professional Qualifications (2017)*
 - *Paragraph 8.1.2*
2. *Office of the State Fire Marshal*

Job Performance Requirement

Operate a wildland fire apparatus, given *a wildland fire apparatus*, a predetermined route off of a public way that incorporates the maneuvers and features that the driver/operator is expected to encounter during normal operations, *applicable laws and regulations, and AHJ policies and procedures*, so that the vehicle is operated in compliance with all applicable *jurisdictional* rules and regulations and *operational* limitations of the apparatus.

Requisite Knowledge

1. *Explain* the effects on vehicle control of braking reaction time and load factors
2. *Explain the* effects of high center of gravity on roll-over potential, general steering reactions, speed, and centrifugal force
3. *Identify* applicable laws and regulations
4. *Describe the* principles of skid avoidance, night driving, shifting, and gear patterns
5. *Describe how to* negotiate intersections, railroad crossings, and bridges
6. *Identify* weight and height limitations for both roads and bridges
7. *Describe how to* identify and operate automotive gauges
8. *Explain* operational limits

Requisite Skills

1. Operate passenger restraint devices
2. Maintain safe following distances
3. Maintain control of the *wildland fire apparatus* while accelerating, decelerating, and turning, given road, weather, and traffic conditions
4. Operate during nonemergency conditions
5. Operate under adverse environmental or driving surface conditions
6. Use automotive gauges and controls

Content Modification

Block	Modification	Justification
JPR	Added "a wildland fire apparatus".	Required to complete JPR. (2014)
JPR	Added "applicable laws and regulations".	None given. (2014)
JPR	Added "and AHJ policies and procedures".	None given. (2014)
JPR	Replaced "departmental" with "jurisdictional".	None given. (2014)

Wildland Fire Apparatus
Section 11: Operations

JPR	Replaced “design” with “operational”.	None given. (2014)
RS3	Replaced “vehicle” with “wildland fire apparatus”.	Replaced for consistency. (2014)

Cross Reference

Course Plan	Skill Sheets	Task Book
Fire Apparatus Driver/Operator 1E: Wildland Fire Apparatus Operations <ul style="list-style-type: none"> • <i>Topic 3-1</i> 	N/A	Wildland Fire Apparatus Driver/Operator <ul style="list-style-type: none"> • <i>JPR 10</i>

11-2: Produce Effective Fire Streams

Authority

1. *NFPA 1002: Standard for Fire Apparatus Driver/Operator Professional Qualifications (2017)*
 - Paragraph 8.2.1
2. *Office of the State Fire Marshal*

Job Performance Requirement

Produce effective fire streams, given a *wildland fire apparatus* and the sources specified in the following list (water tank, pressurized *water* source, static *water* source) so that the pump is engaged, all pressure control and vehicle safety devices are set, the rated flow of the nozzle is achieved, and the apparatus is monitored for potential problems.

Requisite Knowledge

1. *Describe* hydraulic calculations for friction loss and flow using both written formulas and estimation methods
2. *Describe* safe operation of the pump
3. *Describe* correct apparatus placement
4. *Describe* personal safety considerations
5. *Identify* problems related to small diameter or dead-end mains and low-pressure and private water supply systems
6. *Identify* the reliability of static sources

Requisite Skills

1. *Position* a *wildland fire apparatus* to operate at a fire hydrant and at a static water source
2. *Position* apparatus for fire attack
3. *Transfer* power from vehicle engine to pump
4. *Draft*
5. *Operate* apparatus pressure control systems
6. *Operate* the volume/pressure transfer valve (*multistage pumps only*)
7. *Operate* auxiliary cooling systems
8. *Make the transition* between internal and external water sources
9. *Assemble* hose lines, nozzles, valves, and appliances

Content Modification

Block	Modification	Justification
JPR	Added "a wildland fire apparatus".	Required to complete JPR. (2014)
JPR	Added "water" in two places.	Added for clarification. (2014)
RK	Removed RK item "Describe hydrant coding systems".	Too specific to be applicable in this course. This would be taught at the Firefighter level within the candidate's agency.
RS2	Replaced "place" with "position".	None given. (2014)

Wildland Fire Apparatus
Section 11: Operations

RS5	Replaced “pumper” with “apparatus”.	Changed for consistency. (2017)
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Cross Reference

Course Plan	Skill Sheets	Task Book
Fire Apparatus Driver/Operator 1E: Wildland Fire Apparatus Operations <ul style="list-style-type: none">• <i>Topic 3-2</i>	N/A	Wildland Fire Apparatus Driver/Operator <ul style="list-style-type: none">• <i>JPR 11 (tank)</i>• <i>JPR 12 (pressurized source)</i>• <i>JPR 13 (static source)</i>

11-3: Pump a Supply Line

Authority

1. *NFPA 1002: Standard for Fire Apparatus Driver/Operator Professional Qualifications (2017)*
 - Paragraph 8.2.2
2. *Office of the State Fire Marshal*

Job Performance Requirement

Pump a supply line, given a *wildland fire apparatus* and a relay pumping evolution the length and size of the line and pumping flow and desired intake pressure, so that correct intake pressures and flow are provided to the next *pumping apparatus* in the relay.

Requisite Knowledge

1. *Describe* hydraulic calculations for friction loss and flow using both written formulas and estimate methods
2. *Describe* safe operation of the pump
3. *Identify* problems related to small diameter or dead-end mains and low-pressure and private water supply systems
4. *Describe* hydrant coding systems
5. *Identify* the reliability of static sources

Requisite Skills

1. *Position a wildland fire apparatus to operate at a fire hydrant and at a static water source*
2. *Transfer power from vehicle engine to pump*
3. *Draft*
4. *Operate apparatus pressure control systems*
5. *Operate volume/pressure transfer valve (multistage pumps only)*
6. *Operate auxiliary cooling systems*
7. *Make the transition between internal and external water sources*
8. *Assemble hose lines, nozzles, valves, and appliance*

Content Modification

Block	Modification	Justification
JPR	Added "a wildland fire apparatus".	Required to complete JPR. (2014)
JPR	Changed "pumper" to "pumping apparatus".	Changed for consistency. (2017)
RS1	Added "fire".	Added for consistency. (2014)
RS4	Changed "pumper" to "apparatus".	Changed for consistency. (2017)

Cross Reference

Course Plan	Skill Sheets	Task Book
Fire Apparatus Driver/Operator 1B: Pumping Apparatus Operations <ul style="list-style-type: none">• <i>Topic 4-5</i>	N/A	Wildland Fire Apparatus Driver/Operator <ul style="list-style-type: none">• JPR 14

13-4: Establish a Water Shuttle Dumpsite

Authority

1. *NFPA 1002: Standard for Fire Apparatus Driver/Operator Professional Qualifications (2017)*
 - *Paragraph 10.2.3*

Job Performance Requirement

Establish a water shuttle dumpsite, given *one or more water tenders*, two or more portable water tanks, low-level strainers, *hard suction hose*, fire hose, and a fire apparatus equipped with a fire pump, so that the tank being drafted from is kept full at all times, the tank being dumped into is emptied first, and the water is transferred from one tank to the next.

Requisite Knowledge

1. *Describe* local procedures for establishing a water shuttle dumpsite
2. *Describe* principles of water transfer between multiple portable water tanks

Requisite Skills

1. *Deploy portable water tanks*
2. *Connect and operate water transfer equipment*
3. *Connect a strainer and suction hose to the fire pump*

Content Modification

Block	Modification	Justification
JPR	Added "one or more water tenders".	Required to complete JPR. (2014)
JPR	Replaced "water transfer equipment" with "hard suction hose".	None given. (2014)

Cross Reference

Course Plan	Skill Sheets	Task Book
Fire Apparatus Driver/Operator 1F: Water Tender Operations <ul style="list-style-type: none">• <i>Topic 3-3</i>	N/A	Water Tender Driver/Operator <ul style="list-style-type: none">• <i>JPR 13</i>