

State of Oregon
Department of Public Safety Standards and Training

NFPA® 1033

Standard for Professional Qualifications for Fire Investigator
2022 Edition

Task Book Assigned To:

Name	DPSST Fire Service #
Agency Name	Date Initiated
Signature of Agency Head or Training Officer	Date Completed

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Additional copies of this document may be downloaded from the DPSST web site:
<https://www.oregon.gov/dpsst/FirePrograms/Pages/Cert%20Applications-TaskBooks-Guides.aspx>

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Task Book Specifications

Task Book Qualification Record Books (Task Books) have been developed for various certification levels within the Oregon Department of Public Safety Standards and Training (DPSST) system. Each Task Book lists the job performance requirements (JPRs) for the specific certification level in a format that allows a candidate to be trained and evaluated during three sessions.

To successfully complete a task book, only an evaluator certified as an NFPA Fire Investigator may observe and sign the JPR's. 'Requisite Knowledge' sections may be completed during class and signed by the instructor. 'Requisite Skills' sections must be conducted post course completion by evaluators certified as an NFPA Fire Investigator either at the candidate's fire agency or other Oregon fire agency. Before a job performance evaluation can be assessed, all requisite knowledge and skills must be satisfied. In addition, all relative Task Book evaluations must be checked off by the evaluator.

When all prescribed requirements have been met, an application for certification may be forwarded to DPSST.

The JPRs covered in this Task Book meet or exceed all NFPA published standards for this certification level at the time of this publication. Mention of NFPA and its standards do not, and are not intended as adoption of—or reference to—NFPA standards.

NOTE TO CANDIDATE: Please refer to the [NFPA Fire Investigator Guide to Certification](#) for information on requirements to be certified as an NFPA Fire Investigator.

How to Evaluate Performance

Each JPR has one to three corresponding boxes to the right in which to confirm a candidate's success. The evaluator shall indicate a candidate's successful completion of a JPR by initialing and dating.

Example:

4.2.1 Secure the fire ground, given marking devices, sufficient personnel, and special tools and equipment, so that unauthorized persons can recognize the perimeters of the investigative scene and are kept from restricted areas and all evidence or potential evidence is protected from damage or destruction.

JPRs 4.2.9, 4.4.2, 4.4.3, 4.4.4, 4.4.5, and 4.7.3, all indicated with a carrot (^) next to the JPR, within this Task Book may either be completed by successfully performing the task three times for a qualified evaluator OR through the successful completion of specified courses. For these specified JPRs, if the candidate is not performing the tasks, proof of course completion must be provided to their fire agency. Each of these aforementioned JPRs has three corresponding boxes to be completed for those performing tasks or one corresponding box for candidates with proof of appropriate course completions.

Example for completion of requirement through successful task performances:

4.2.9^ Discriminate the effects of explosions from other types of damage, given standard equipment and tools, so that an explosion is identified and its evidence is preserved.

OR

Completion of Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) Post Blast Investigative Techniques, New Mexico Tech Incident Response to Terrorist Bombings (IRTB), or equivalent course.

OR

Example for completion of requirement through successful course completion:

4.2.9^ Discriminate the effects of explosions from other types of damage, given standard equipment and tools, so that an explosion is identified and its evidence is preserved.

OR

Completion of Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) Post Blast Investigative Techniques, New Mexico Tech Incident Response to Terrorist Bombings (IRTB), or equivalent course.

OR

TASK BOOK QUALIFICATION RECORD

FOR THE CERTIFICATION LEVEL OF

NFPA Fire Investigator

Prior to becoming certified in this position, the candidate must successfully complete the following Job Performance Requirements (JPR). The evaluator shall initial and date the appropriate box to indicate successful completion. For each JPR there are requisite knowledge and skill requirements. The evaluator must initial and date in the box provided to indicate the meeting of those requirements before the candidate may proceed.

4.1 General.

4.1.1 * The fire investigator shall meet the job performance requirements (JPRs) defined in Sections 4.2 through 4.7.

4.1.2 * The fire investigator shall employ all elements of the scientific method as the operating analytical process throughout the investigation and for the drawing of conclusions.

4.1.3 * Because fire investigators are required to perform activities in adverse conditions, site safety assessments shall be completed on all scenes and regional and national safety standards shall be followed and included in organizational policies and procedures.

4.1.4 * The fire investigator shall maintain necessary liaison with other interested professionals and entities.

4.1.5 * The fire investigator shall adhere to all applicable legal and regulatory requirements.

4.1.6 The fire investigator shall understand the organization and operation of the investigative team within an incident management system.

4.1.7 * In order to successfully complete the tasks identified in the JPRs of Sections 4.2 through 4.7, the fire investigator shall remain current in the subjects listed as “requisite knowledge” as they relate to fire investigations, which include the following:

1. Fire science:

- (a) Fire chemistry**
- (b) Thermodynamics**
- (c) Fire dynamics**
- (d) Explosion dynamics**

2. Fire investigation:

- (a) Fire analysis**
- (b) Fire investigation methodology**
- (c) Fire investigation technology**
- (d) Evidence documentation, collection, and preservation**
- (e) Failure analysis and analytical tools**

Note to candidate: the requirements in 4.1.7, 4.1.7.1, 4.1.7.2, and 4.1.7.3 should be maintained and reflected in the Maintenance Re-Certification requirements for NFPA Fire Investigator certification. Once certified, you will be expected to remain current and keep documentation of your currency in relation to these requirements on file at your fire agency.

- 3. Fire scene safety:
 - (a) Hazard recognition, evaluation, and basic mitigation procedures
 - (b) Hazardous materials
 - (c) Safety regulations
- 4. Building systems:
 - (a) Types of construction
 - (b) Fire protection systems
 - (c) Electricity and electrical systems
 - (d) Fuel gas systems

4.1.7.1 The fire investigator shall remain current in the subjects listed as “requisite knowledge” for the JPRs and as summarized in 4.1.7.

4.1.7.2 The fire investigator shall remain current by attending formal education courses, workshops, in-person or online seminars, and/or through professional publications, journals, and treatises.

4.1.7.3 The fire investigator shall complete and document a minimum of 40 hours of continuing education training every five years by attending formal education courses, workshops, and seminars.

4.2 * Scene Examination. Duties shall include inspecting, evaluating, and analyzing the fire scene or evidence of the scene, and conducting a comprehensive review of documentation generated during the examination(s) of the scene if the scene is no longer available, so as to determine the area or point of origin, source of ignition, material(s) ignited, and action or activity that brought the ignition source and materials together and to assess the subsequent progression, extinguishment, and containment of the fire.

4.2.1 Secure the fire ground, given marking devices, sufficient personnel, and special tools and equipment, so that unauthorized persons can recognize the perimeters of the investigative scene and are kept from restricted areas and all evidence or potential evidence is protected from damage or destruction.

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(A) **Requisite Knowledge.** Fire ground hazards, types of evidence, and the importance of fire scene security, evidence preservation, and issues relating to spoliation.

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(B) **Requisite Skills.** Use of marking devices.

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4.2.2 * Conduct an exterior survey, given standard equipment and tools, so that evidence is identified and preserved, fire damage is interpreted and analyzed, hazards are identified to avoid injuries, accessibility to the property is determined, and all potential means of ingress and egress are discovered.

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(A) Requisite Knowledge. The types of building construction and the effects of fire on construction materials, types of evidence commonly found in the perimeter, evidence preservation methods, the effects of fire suppression, fire behavior and spread, fire patterns, and a basic awareness of the dangers of hazardous materials.

(B) Requisite Skills. Ability to assess fire ground and structural condition, observe the damage from and effects of the fire, and interpret and analyze fire patterns.

4.2.3 Conduct an interior survey, given standard equipment and tools, so that areas of potential evidentiary value requiring further examination are identified and preserved, the evidentiary value of contents is determined, and hazards are identified in order to avoid injuries.

(A) Requisite Knowledge. The types of building construction and interior finish and the effects of fire on those materials, the effects of fire suppression, fire behavior and spread, evidence preservation methods, fire patterns, effects of building contents on fire growth, the relationship of building contents to the overall investigation, weather conditions at the time of the fire, and fuel moisture.

(B) Requisite Skills. Ability to assess structural conditions, observe the damage and effects of the fire, discover the impact of fire suppression efforts on fire flow and heat propagation, and evaluate protected areas to determine the presence and/or absence of contents.

4.2.4 Interpret and analyze fire patterns, given standard equipment and tools and some structural or content remains, so that each pattern is identified and analyzed with respect to the burning characteristics of the material involved, the stage of fire development, the effects of ventilation within the context of the scene, the relationship with all patterns observed, and the understanding of the methods of heat transfer that led to the formation of the patterns identified and analyzed, and the sequence in which the patterns were produced is determined.

(A) Requisite Knowledge. Fire dynamics, including stages of fire development; methods of heat transfer; compartment fire development; the interrelationship of heat release rate (HRR), form, and ignitibility of materials; and the impact and effects of ventilation on the creation of the fire patterns.

(B) Requisite Skills. Ability to interpret and analyze the effects of burning characteristics of the fuel involved and the effects of ventilation on different types of materials.

4.2.5 Interpret and analyze fire patterns, given standard equipment and tools and some structural or content remains, so that fire development, fire spread, and the sequence in which fire patterns were developed (i.e., sequential pattern analysis) are determined; methods and effects of suppression are analyzed; fire patterns and effects indicating a hypothetical area or areas of origin are recognized and tested; false or refuted hypothetical areas of origin are eliminated; and all fire patterns are tested against the data, such that the area(s) of origin is correctly identified.

(A) Requisite Knowledge. Fire development and spread based on fire chemistry, fire dynamics including compartment fire development, fire spread, fire suppression effects, building construction, electricity and electrical systems, and fuel gas systems.

(B) Requisite Skills. Ability to analyze variations of fire patterns on different materials with consideration given to HRR, form, ignitability of the fuels involved, and the effects of ventilation; ability to understand the impact of different types of fuel packages on pattern creation; and ability to analyze and correlate information.

4.2.6 Examine and remove fire debris, given standard or, if necessary, special equipment and tools, so that fire patterns and fire effects concealed by debris are discovered and analyzed; all debris within the potential area(s) of origin is checked for fire cause evidence; potential ignition source(s) is identified; and evidence is preserved without investigator-inflicted damage or contamination.

(A) Requisite Knowledge. Basic understanding of ignition processes, characteristics of ignition sources, and ease of ignition of fuels; debris-layering techniques; use of tools, equipment, and special equipment during the debris search; types of fire cause evidence commonly found; understanding evidence spoliation and techniques to avoid it; and evidence collection and preservation methods and documentation.

(B) Requisite Skills. Ability to employ search techniques that further the discovery of fire cause evidence and ignition sources, use search techniques that incorporate documentation, and collect and preserve evidence.

4.2.7 Reconstruct potential area(s) of origin, given standard and, if needed, special equipment and tools as well as sufficient personnel, so that all protected areas and fire patterns are identified and correlated to contents or structural remains; and items potentially critical to cause determination are returned to their prefire location as a means of hypothesis testing, such that the area(s) or point(s) of origin is discovered.

(A) Requisite Knowledge. The effects of fire on different types of material and the importance and uses of reconstruction.

(B) Requisite Skills. Ability to examine all materials to determine the effects of fire, identify and distinguish among different types of fire-damaged contents, and return materials to their original position using protected areas and fire patterns.

4.2.8 * Inspect and analyze the performance of building systems, including fire protection, detection and suppression systems, HVAC, electricity and electrical systems, fuel gas systems, and building compartmentation, given standard and special equipment and tools, so that a determination can be made as to the need for expert resources; an operating system’s impact on fire growth and spread is considered in identifying origin areas; defeated and failed systems are identified; and the system’s potential as a fire cause is recognized.

(A) Requisite Knowledge. Different types of fire protection, detection, suppression, HVAC, electricity and electrical systems, fuel gas systems, and building compartmentation such as fire walls and fire doors; types of expert resources for building systems; the impact of fire on various systems; common methods used to defeat a system’s functional capability; and types of failures.

(B) Requisite Skills. Ability to determine the system's operation and its effect on the fire; identify alterations to, and failure indicators of, building systems; and evaluate the impact of suppression efforts on building systems.

4.2.9^ Discriminate the effects of explosions from other types of damage, given standard equipment and tools, so that an explosion is identified and its evidence is preserved.

OR

OR

Completion of the Bureau of Alcohol, Tobacco, Firearms and Explosives’ (ATF) Post Blast Investigative Techniques course, New Mexico Tech’s Incident Response to Terrorist Bombings (IRTB) course, or equivalent course.

(A) Requisite Knowledge. Different types of explosions and their causes, characteristics of an explosion, and the difference between low- and high-order explosions.

(B) Requisite Skills. Ability to identify explosive effects on glass, walls, foundations, and other building materials; distinguish between low- and high-order explosion effects; and analyze damage to document the blast zone and origin.

4.3 Documenting the Scene. Duties shall include diagramming the scene, photographing, and taking field notes to be used to document scene findings, or to prepare a written report.

4.3.1 Diagram the scene, given standard tools and equipment, so that the scene is accurately represented and evidence, pertinent contents, significant patterns, and area(s) or point(s) of origin are identified.

(A) **Requisite Knowledge.** Commonly used symbols and legends that clarify the diagram, types of evidence and patterns that need to be documented, and formats for diagramming the scene.

(B) **Requisite Skills.** Ability to sketch the scene, basic drafting skills, and evidence recognition and observational skills.

4.3.2 * Photographically document the scene, given standard tools and equipment, so that the scene is accurately depicted and the photographs support scene findings.

(A) **Requisite Knowledge.** Working knowledge of high-resolution camera and flash, the types of film, media, and flash available, and the strengths and limitations of each.

(B) **Requisite Skills.** Ability to use a high-resolution camera, flash, and accessories.

4.3.3 * Construct investigative notes, given a fire scene, available documents (e.g., prefire plans and inspection reports), and interview information, so that the notes are accurate, provide further documentation of the scene, and represent complete documentation of the scene findings.

(A) **Requisite Knowledge.** Relationship between notes, diagrams, and photos; how to reduce scene information into concise notes; and the use of notes during report writing and legal proceedings.

(B) **Requisite Skills.** Data-reduction skills, note-taking skills, and observational and correlating skills.

4.4 Evidence Collection/Preservation. Duties shall include using proper physical and legal procedures to identify, document, collect, and preserve evidence required within the investigation.

4.4.1 Utilize proper procedures for managing victims and fatalities, given a protocol and appropriate personnel, so that all evidence is discovered and preserved and the protocol procedures are followed.

(A) **Requisite Knowledge.** Types of evidence associated with fire victims and fatalities and evidence preservation methods.

(B) **Requisite Skills.** Observational skills and the ability to apply protocols to given situations.

4.4.2^ * Locate, document, collect, label, package, and store evidence, given standard or special tools and equipment and evidence collection materials, so that evidence is properly identified, preserved, collected, packaged, and stored for use in testing, legal, or other proceedings and examinations; ensuring cross-contamination and investigator-inflicted damage to evidentiary items are avoided; and the chain of custody is established.

OR

Completion of the International Association of Arson Investigators' Evidence Collection Technician (IAAI-ECT) course or equivalent.

OR

(A) **Requisite Knowledge.** Types of evidence, authority requirements, and impact of removing evidentiary items on civil or criminal proceedings (exclusionary or fire-cause supportive evidence); types, capabilities, and limitations of standard and special tools used to locate evidence; types of laboratory tests available; packaging techniques and materials; and impact of evidence collection on the investigation.

(B) **Requisite Skills.** Ability to recognize different types of evidence and determine whether evidence is critical to the investigation.

4.4.3 Select evidence for analysis, given all information from the investigation, so that items for analysis support specific investigation needs.

OR

Completion of the International Association of Arson Investigators' Evidence Collection Technician (IAAI-ECT) course or equivalent.

OR

(A) **Requisite Knowledge.** Purposes for submitting items for analysis, types of analytical services available, and capabilities and limitations of the services performing the analysis.

(B) **Requisite Skills.** Ability to evaluate the fire incident to determine forensic, engineering, or laboratory needs.

4.4.4^ Maintain a chain of custody, given standard investigative tools, marking tools, and evidence tags or logs, so that written documentation exists for each piece of evidence and evidence is secured.

OR

Completion of the International Association of Arson Investigators' Evidence Collection Technician (IAAI-ECT) course or equivalent.

OR

(A) Requisite Knowledge. Rules of custody and transfer procedures, types of evidence (e.g., physical evidence obtained at the scene, photos, and documents), and methods of recording the chain of custody.

(B) Requisite Skills. Ability to execute the chain of custody procedures and accurately complete necessary documents.

4.4.5^ Dispose of evidence, given jurisdictional or agency regulations and file information, so that the disposal is timely, safely conducted, and in compliance with jurisdictional or agency requirements.

OR

Completion of the International Association of Arson Investigators' Evidence Collection Technician (IAAI-ECT) course or equivalent.

OR

(A) Requisite Knowledge. Disposal services available and common disposal procedures and problems.

(B) Requisite Skills. Documentation skills.

4.5 Interview. Duties shall include obtaining information regarding the overall fire investigation from others through verbal communication.

4.5.1 Develop an interview plan, given no special tools or equipment, so that the plan reflects a strategy to further determine the fire cause and affix responsibility and includes a relevant questioning strategy for each individual to be interviewed that promotes the efficient use of the investigator's time.

(A) Requisite Knowledge. Persons who can provide information that furthers the fire cause determination or the affixing of responsibility, types of questions that are pertinent and efficient to ask of different information sources (first responders, neighbors, witnesses, suspects, and so forth), and pros and cons of interviews versus document gathering.

(B) Requisite Skills. Planning skills, development of focused questions for specific individuals, and evaluation of existing file data to help develop questions and fill investigative gaps.

4.5.2 Conduct interviews, given incident information, so that pertinent information is obtained, follow-up questions are asked, responses to all questions are elicited, and the response to each question is documented accurately.

(A) Requisite Knowledge. Types of interviews, personal information needed for proper documentation or follow-up, documenting methods and tools, and types of nonverbal communications and their meaning.

(B) Requisite Skills. Ability to adjust interviewing strategies based on deductive reasoning, interpret and analyze verbal and nonverbal communications, apply appropriate legal requirements, and exhibit strong listening skills.

4.5.3 Evaluate interview information, given interview transcripts or notes and incident data, so that all interview data is individually analyzed and correlated with all other interviews, corroborative and conflictive information is documented, and new leads are developed.

(A) Requisite Knowledge. Types of interviews, report evaluation methods, and data correlation methods.

(B) Requisite Skills. Data correlation skills and the ability to evaluate source information (e.g., first responders and other witnesses).

4.6 Post-Incident Investigation. Duties shall include the investigation of all factors beyond the fire scene at the time of the origin and cause determination.

4.6.1 Gather reports and records, given no special tools, equipment, or materials, so that all gathered documents are applicable to the investigation, complete, and authentic; the chain of custody is maintained; and the material is admissible in a legal proceeding.

(A) Requisite Knowledge. Types of reports needed that facilitate determining responsibility for the fire (e.g., police reports, fire reports, insurance policies, financial records, deeds, private investigator reports, outside photos, and videos) and location of these reports.

(B) Requisite Skills. Ability to identify the reports and documents necessary for the investigation, implement the chain of custody, and organizational skills.

4.6.2 Evaluate the investigative file, given all available file information, so that areas for further investigation are identified, the relationship between gathered documents and information is interpreted, and corroborative evidence and information discrepancies are discovered.

(A) Requisite Knowledge. File assessment and/or evaluation methods, including accurate documentation practices, and requisite investigative elements.

(B) Requisite Skills. Information assessment, correlation, and organizational skills.

4.6.3 Coordinate expert resources, given the investigative file, reports, and documents, so that the expert's competencies are matched to the specific investigation needs, financial expenditures are justified, and utilization clearly furthers the investigative goals of determining cause or affixing responsibility.

(A) Requisite Knowledge. How to assess one’s own expertise, qualification to be called for expert testimony, types of expert resources (e.g., forensic, CPA, polygraph, financial, human behavior disorders, and engineering), and methods to identify expert resources.

(B) Requisite Skills. Ability to apply expert resources to further the investigation by networking with other investigators to identify experts, questioning experts relative to their qualifications, and developing a utilization plan for use of expert resources.

4.6.4 Establish evidence as to motive and/or opportunity, given an incendiary fire, so that the evidence is supported by documentation and meets the evidentiary requirements of the jurisdiction.

(A) Requisite Knowledge. Types of motives common to incendiary fires, methods used to discover opportunity, and human behavioral patterns relative to fire-setting.

(B) Requisite Skills. Financial analysis, records gathering and analysis, interviewing, and interpreting and analyzing fire scene information and evidence for relationship to motive and/or opportunity.

4.6.5 * Formulate an opinion concerning origin, cause, or responsibility for the fire, given all investigative findings, so that the opinion regarding origin, cause, or responsibility for a fire is supported by the data, facts, records, reports, documents, scientific references, and evidence.

(A) Requisite Knowledge. Analytical methods and procedures (e.g., hypothesis development and testing, systems analysis, time lines, link analysis, fault tree analysis, and data reduction matrixing).

(B) Requisite Skills. Analytical and assimilation skills.

4.7 Presentations. Duties shall include the presentation of findings to those individuals not involved in the actual investigations.

4.7.1 * Prepare a written report, given investigative findings, so that the report accurately reflects the facts, data, and scientific principles on which the investigator relied; clearly identifies and expresses the investigator’s opinions and conclusions; and contains the reasoning by which each opinion or conclusion was reached in order to meet the requirements of the intended audience(s).

(A) Requisite Knowledge. Elements of writing, typical components of a written report, and types of audiences and their respective needs or requirements.

(B) Requisite Skills. Writing skills, ability to analyze information, and determine the reader’s needs or requirements.

4.7.2 Express investigative findings verbally, given investigative findings, notes, a time allotment, and a specific audience, so that the information is accurate, the presentation is completed within the allotted time, and the presentation includes only need-to-know information for the intended audience.

(A) Requisite Knowledge. Types of investigative findings, the informational needs of various types of audiences, and the impact of releasing information.

(B) Requisite Skills. Communication skills and ability to determine audience needs and correlate findings.

4.7.3^ Testify during legal proceedings, given investigative findings, so that the testimony accurately reflects the facts, data, and scientific principles on which the investigator relied; clearly identifies and expresses the investigator's opinions and conclusions; and contains the reasoning by which each opinion or conclusion was reached.

OR

OR

Completion of IAAI's Expert Witness Courtroom Testimony course, the National Fire Academy's (NFA) Fire Investigation: Case Preparation and Testimony (R0790) course, or equivalent.

(A) Requisite Knowledge. Types of investigative findings, types of legal proceedings, professional demeanor requirements, and an understanding of due process and legal proceedings.

(B) Requisite Skills. Communication and listening skills and ability to differentiate facts from opinion and determine accepted procedures, practices, and etiquette during legal proceedings.