



FIRE INVESTIGATOR EQUIVALENCY CHECKLIST
3/2/99
Referenced to NFPA 1033

- _____ 18-1.1 The fire investigator shall be at least age 18.
- _____ 18-1.2 The fire investigator shall have a high school diploma or a state recognized equivalent.
- _____ 18-1.3 The authority having jurisdiction shall conduct a thorough background and character investigation prior to accepting an individual as a candidate for certification as a fire investigator.
- _____ 18-1.4 The job performance requirements for fire investigator shall be completed in accordance with recognized practices and procedures or as they are defined by law or by the authority having jurisdiction.
- _____ 18-1.5 The job performance requirements defined in this standard need not be mastered in the order in which they appear. Training agencies or authorities shall establish programs that prepare individuals to meet the requirements defined in this standard.
- _____ 18-1.6 Evaluation of job performance requirements shall be by individuals approved by the authority having jurisdiction. The evaluator shall be qualified to conduct the evaluation of an investigator.
- _____ 18-1.7 The fire investigator shall remain current with investigation methodology, fire protection technology, and current code requirements by attending workshops/seminars, and/or through professional publications and journals.
- _____ 18-1.7a Fire investigation technology and practices are changing rapidly. It is essential for an investigator's performance and knowledge to remain current. It is recommended that investigators be familiar with the technical information and procedural guidance presented in materials such as NFPA 921, *Guide for Fire and Explosion Investigations*, and NFPA 907M, *Manual for the Determination of Electrical Fire Causes*.
- _____ 18-2.1 The fire investigator shall meet the job performance requirements defined in Section 3-2 through 3-7. In addition, the fire investigator shall meet the requirements of 2-2.1 through 2-2.3 or NFPA 472, *Standard for Professional Competence of Responders to Hazardous Materials Incidents*.

- _____ 18-2.1a Chapter 10 of NFPA 921, *Guide for Fire and Explosion Investigations*, also provides the investigator with guidance.
- _____ 18-2.2 The fire investigator shall maintain appropriate liaison with other interested professionals during an investigation.
- _____ 18-2.3 The fire investigator shall ensure that due process of law is served.
- _____ 18-2.3a It is understood that fire investigators with arrest powers, fire investigators without arrest powers, and private sector fire investigators may utilize this standard. The following is a list of those due process issues that are critical to the fire Investigation field. It is the responsibility of the authority having jurisdiction to select those issues that are pertinent to its respective agency or organization. Those selected issues should then serve as the measurement criteria or training guideline for the authority having jurisdiction.
- Due process issues (stated in task terms): Conduct search and seizure, conduct arrests, conduct interviews and interrogations, maintain chain of custody, utilize criminal and civil statutes applicable to the situation, and interpret and utilize contract law and insurance law. Show due process of civil rights laws, privacy laws, the fair credit reporting act, laws of trespass and invasion of privacy, laws of libel and slander, laws of punitive damages and attorney-client privilege, and other rules of evidence and law applicable to the authority having jurisdiction.
- _____ 18-3.1 To inspect/evaluate the scene so as to determine the area/point of origin, source of ignition, material(s) ignited, act or activity that brought ignition source and materials together, and assess the subsequent progression, extinguishment, and containment of the fire.
- _____ 18-3.2 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, are kept from restricted areas, and all evidence or potential evidence is protected from damage or destruction.
- _____ 18-3.3 Knowledge of fire ground hazards, types of evidence, and the importance of fire scene security and evidence preservation.
- _____ 18-3.4 Use of marking devices.

- _____ 18-3.5 Conduct an exterior survey, given standard equipment and tools, so that evidence is preserved, fire damage is interpreted, hazards are identified to avoid injuries, accessibility to the property is determined, and all potential means of ingress/egress are discovered.
- _____ 18-3.6 Knowledge of the types of building construction and the effects of fire upon construction materials, types of evidence commonly found in the perimeter, evidence preservation methods, the effects of fire suppression, fire behavior/spread, and burn patterns.
- _____ 18-3.7 Assess fire ground and structural condition, observe the damage and effects of the fire, and interpret burn patterns.
- _____ 18-3.8 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 to avoid injuries.
- _____ 18-3.9 Knowledge of the types of building construction and interior finish and the effects of fire upon those materials, the effects of fire suppression, fire behavior/spread, evidence preservation methods, burn patterns, effects of building contents on fire growth, and the relationship of contents to the overall investigation.
- _____ 18-3.10 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.
- _____ 18-3.11 Interpret burn patterns, given standard equipment and tools and some structural/content remains, so that each individual pattern is evaluated with respect to the burning characteristics of the material involved.
- _____ 18-3.12 Knowledge of fire development and the interrelationship of heat release rate, form, and ignitability of materials.
- _____ 18-3.13 Interpret the effects of burning characteristics on different types of materials.
- _____ 18-3.14 Correlate burn patterns, given standard equipment and tools and some structural/content remains, so that fire development is determined, methods and effects of suppression are evaluated, false

origin area patterns are recognized, and all areas of origin are correctly identified.

- _____ 18-3.15 Knowledge of fire behavior/spread based on fire chemistry and physics, fire suppression effects, and building construction.
- _____ 18-3.16 Interpret variations of burn patterns on different materials with consideration given to heat release rate, form, and ignitability; distinguish impact of different types of fuel loads; evaluate fuel trails; and analyze and synthesize information.
- _____ 18-3.17 Examine and remove fire debris, given standard equipment and tools, so that all debris is checked for fire cause evidence, the ignition source(s) is identified, the fire cause is determined, and evidence is preserved without investigator-inflicted damage or contamination.
- _____ 18-3.18 Basic understanding of ignition processes, characteristics of ignition sources, and ease of ignition of fuels, debris-layering techniques, use of tools and equipment during the debris search, types of fire cause evidence commonly found in various degrees of damage, and evidence-gathering methods and documentation.
- _____ 18-3.19 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.
- _____ 18-3.20 Reconstruct the area of origin, given standard and, if needed, special equipment and tools as well as sufficient personnel, so that all protected areas and burn patterns are identified and correlated to contents/structural remains, items potentially critical to cause determination and photo documentation are returned to their pre-fire location, and the point(s) of origin is discovered.
- _____ 18-3.21 Knowledge of the effects of fire on different types of material and the importance and uses of reconstruction.
- _____ 18-3.22 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 burn patterns.
- _____ 18-3.23 Inspect the performance of building systems, including detection, suppression, HVAC, utilities, 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 systems impact on fire growth and spread is considered in identifying origin areas, and defeated systems are identified.

- _____ 18-3.23a Examples of tampered systems: Fire doors propped open, sprinkler systems shut down, detection systems disabled. Examples of prior operating systems: Fire doors, sprinkler activation systems, shutdown of HVAC systems, automatic utility shutoff.
- _____ 18-3.24 Different types of detection, suppression, HVAC, utility, and building compartmentation such as fire walls and fire doors; types of expert resources for building systems; the impact of fire on various systems; and common methods used to defeat a system's functional capability.
- _____ 18-3.25 Determine the systems operation and its effect on the fire, identify alterations to building systems, and evaluate the impact of suppression efforts on building systems.
- _____ 18-3.26 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.
- _____ 18-3.27 Different types of explosions and their causes, characteristics of an explosion, and the difference between low- and high-order explosions.
- _____ 18-3.28 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.
- _____ 18-4.1 Duties shall include diagramming the scene, photographing, and taking field notes to be used to compile a final report.
- _____ 18-4.2 Diagram the scene, given standard tools and equipment, so that the scene is accurately represented and evidence, pertinent contents, significant patterns, and origin areas/points are identified.
- _____ 18-4.3 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.

- _____ 18-4.4 Ability to sketch the scene, basic drafting skills, and evidence recognition and observational skills.
- _____ 18-4.5 Photographically document the scene, given standard tools and equipment, so that the scene is accurately depicted and the photograph's appropriately support scene findings.
- _____ 18-4.5a The use of a 35-mm camera or other similar high quality format is highly recommended. The use of various video camera systems to supplement visual documentation may be utilized and is encouraged.
- _____ 18-4.6 Working knowledge of a 35-mm camera and flash, types of 35-mm cameras, and types of film and flash available, as well as the strengths and limitations of each.
- _____ 18-4.7 Ability to use a 35-mm camera and flash.
- _____ 18-4.8 Construct investigative notes, given a fire scene, available documents (e.g., pre-fire plans, inspection reports, etc.), and interview information, so that the notes are accurate, provide further documentation of the scene, and represent complete documentation of the scene findings.
- _____ 18-4.9 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.
- _____ 18-4.10 Data reduction skills, note taking skills, observational and correlating skills.
- _____ 18-5.1 Duties shall include using proper physical and legal procedures to retain evidence required within the investigation.
- _____ 18-5.2 Utilize proper procedures for managing victims and fatalities, given a protocol and appropriate personnel, so that all evidence is discovered and preserved as the protocol procedures are followed.
- _____ 18-5.3 Types of evidence associated with fire victims and fatalities and evidence preservation methods.
- _____ 18-5.4 Observational skills and the ability to apply protocols to given situations.

- _____ 18-5.5 Select appropriate evidence for analysis, given information from the investigative file, so that samples forwarded for analysis support specific investigative needs.
- _____ 18-5.6 Knowledge of the capabilities of the services performing the analysis, purposes for submitting samples, and types of analytical services available.
- _____ 18-5.7 Evaluate the fire incident to determine forensic, engineering, or laboratory needs.
- _____ 18-5.8 Collect and package evidence, given standard tools and equipment and evidence collection materials, so that evidence is identified, preserved, collected, and packaged to avoid contamination and investigator-inflicted damage and the chain of custody is established.
- _____ 18-5.9 Types of evidence (exclusionary or fire-cause supportive evidence), types of laboratory tests available, packaging techniques and materials, and impact of evidence collection on the investigation.
- _____ 18-5.10 Ability to recognize different types of evidence and determine evidence critical to the investigation.
- _____ 18-5.11 Maintain a chain of custody, given standard investigative tools, marking tools, and evidence tags/logs, so that written documentation exists for each piece of evidence and evidence is secured.
- _____ 18-5.12 Rules of custody and transfer procedures, types of evidence (e.g., physical evidence obtained at the scene, photos, documents, etc.), and methods of recording the chain of custody.
- _____ 18-5.13 Ability to execute the chain of custody procedures and accurately complete necessary documents.
- _____ 18-5.14 Dispose of evidence, given jurisdictional/agency regulations and file information, so that the disposal is timely, safely conducted, and in compliance with jurisdictional/agency requirements.
- _____ 18-5.15 Disposal services available and common disposal procedures and problems.
- _____ 18-5.16 Documentation skills.

- _____ 18-6.1 Duties shall include obtaining information regarding the overall fire investigation from others through verbal communication.
- _____ 18-6.2 Develop and 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.
- _____ 18-6.3 Persons who may 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 (fire department, neighbors, witnesses, suspects, etc.), and pros and cons of interviews versus document gathering.
- _____ 18-6.4 Planning skills, development of focused questions for specific individuals, and evaluation of existing file data to help develop questions and fill investigative gaps.
- _____ 18-6.5 Conduct interviews or interrogations, 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.
- _____ 18-6.6 Knowledge of types of interviews, personal information needed for proper documentation or follow-up, documenting methods and tools, and types of nonverbal communications and their meaning.
- _____ 18-6.7 Adjust interviewing strategies based on deductive reasoning, interpret verbal and nonverbal communications, apply applicable legal requirements, and exhibit strong listening skills.
- _____ 18-6.8 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 discovered.
- _____ 18-6.9 Types of interviews, report evaluation methods, and data correlating methods.
- _____ 18-6.10 Data correlating skills and the ability to evaluate source information (e.g., fire department, witness, etc.)

- _____ 18-7.1 Duties shall include the investigation of all factors beyond the fire scene at the time of the origin and cause determination.
- _____ 18-7.2 Gather reports and records, given no special tools, equipment, or materials, so that all gathered documents are appropriate to the investigation, complete, and authentic, the chain of custody is maintained, and the material is acceptable to the courts.
- _____ 18-7.3 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, etc.) and location of these reports.
- _____ 18-7.4 Identify the proper reports and documents necessary for the investigation, implementing the chain of custody, and organizational skills.
- _____ 18-7.5 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.
- _____ 18-7.6 File assessment and/or evaluation methods, proper and acceptable documentation, and proper contents of investigative findings and gathered documentation.
- _____ 18-7.7 Information assessment and correlation skills and organizational skills.
- _____ 18-7.8 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 investigation toward the goals of causation determination or affixing responsibility.
- _____ 18-7.9 Knowledge of the investigator's own expertise, qualifications needed for expert testimony, types of expertise, qualifications needed for expert testimony, types of expert resources (e.g., forensic, CPA polygraph, financial, human behavioral disorders, engineering, etc.), and methods to identify expert resources.
- _____ 18-8.0 Recognize the value of expert resources to further the investigation, network with other investigators to identify experts,

questions experts relative to their qualifications, and plan utilization of expert resources.

- _____ 18-8.1 Establish evidence as to motive and/or opportunity, given an incendiary fire, so that the evidence is the result of a prudent and complete investigation, is supported by documentation, and the evidence meets the evidentiary requirements of the jurisdiction.
- _____ 18-8.2 Types of motives common to incendiary fire investigation, methods used to discover opportunity, and understanding human behavioral patterns relative to fire setting.
- _____ 18-8.3 Financial analysis, records gathering and analysis, interviewing, and interpreting fire scene information and evidence for relationship to motive and/or opportunity.
- _____ 18-8.4 Formulate an opinion of the person(s) and/or product(s) responsible for the fire, given all investigative findings, so that the opinion regarding responsibility for a fire is supported by all records, reports, documents, and evidence.
- _____ 18-8.5 Analytical methods and procedures such as data reduction matrixing, hypothesis testing, and systems analysis, etc.
- _____ 18-8.6 Analytical and assimilation skills.
- _____ 18-9.1 Duties shall include the ability to present findings to those individuals not involved in the actual investigation.
- _____ 18-9.2 Prepare a written investigation report, given investigative findings, documentation, and a specific audience, so that the report accurately reflects the investigative findings, is concise, expresses the investigator's opinion, and is appropriate for the intended audience(s).
- _____ 18-9.3 Elements of writing, typical components of a written report, and types of audiences and their respective needs.
- _____ 18-9.4 Writing skills ability to analyze information and apply deductive reasoning, and ability to determine the reader's needs.
- _____ 18-9.5 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.

- _____ 18-9.6 Types of investigative findings, the informational needs of various types of audiences, and the impact of releasing information.
- _____ 18-9.7 Communication skills, ability to determine audience needs, and ability to correlate findings.
- _____ 18-9.8 Testify during legal proceedings, given investigative findings, contents of reports, and consultation with legal counsel, so that all pertinent investigative information is presented clearly and accurately and the investigator's demeanor is appropriate to the proceedings.
- _____ 18-9.9 Types of investigative findings, understanding of the types of legal proceedings, appropriate demeanor for each, and an understanding of legal proceedings.
- _____ 18-9.10 Communication and listening skills; ability to differentiate facts from opinions; and ability to determine appropriate procedures, practices, and etiquette during legal proceedings.
- _____ 18-9.11 Conduct public informational presentations, given relative data, so that information is accurate, appropriate to the audience, and clearly supports the information needs of the audience.
- _____ 18-9.12 Types of data available regarding the fire loss problem and the issues about which the community must know.
- _____ 18-9.13 Ability to assemble, organize, and present information.
- _____ 18-10.1 The following document or portions thereof are referenced within this standard and shall be considered part of the requirements of this document. The edition indicated for each reference is the current edition as of the date of the NFPA issuance of this document.

References:

NFPA 907 M, Manual for the Determination of Electrical Fire Causes, 1988 edition.

NFPA 921, Guide for Fire and Explosion Investigations, 1992 edition.