

2014- Critical Tasks Check List

Determination of the origin involves Information Including:

- 1. Witness Information**
- 2. Fire Patterns**
- 3. Arc Mapping**
- 4. Fire Dynamics**

N.F.P.A. 921-2014 Edition -18.1.2

Scientific Literatures From: Peer Reviewed Consensus Committees

NFPA® 921- 2014 Edition. (921 References in Red).

NFPA® 1033- 2014 Edition. (1033 References in Blue).

All referenced literatures listed in this document are courtesy of NFPA® National Fire Protection Association (NFPA® 921 Guide for Fire and Explosion Investigations & NFPA® 1033 Professional Qualifications for Fire Investigator).

Task:	Literature Reference:	Yes	No	Pending-N/A
Preparing for the investigation	4.4.2			
Secure the fire ground	10.9.1, 12.3.2.1, 13.2.5.2, 17.3.1.2, 23.1.8, 23.14.2, 23.14.3.1, 29.5.2.4.7, 4.2.1			
Establish a systematic procedure	1.2.1, 1.3, 3.3.149 (Scientific Method) 4.1, 4.2, 6.3.2, 6.4.1, 13.1.2.1.3, 18.2.4, 18.3.2.3.2, 18.3.2.4, 18.4.5.1(5), 19.5, 22.3, 22.3.2, 23.14.1, 28.2.1.2, 28.6, 29.4.1			
Relating fire investigation to the scientific method	1.3.2, 3.3.149, 4.2, 4.3, Figure 4.3, 4.3.4, 4.3.7, 4.3.8, 4.3.9, 4.4, 4.4.3.3, 4.4.5, 6.1.1, 18.2, Figure 18.2, 18.2.2, 18.4, 18.5, 18.6, 18.7, 19.2, Figure 19.2, 19.2.2, 19.4, 19.5, 19.6, 19.6.1, 19.6.5, 19.7, 4.1.2			
Avoid presumption	4.3.7			
Avoid expectation bias/reaching a premature conclusion	4.1, 4.3.8, 4.6.2.1			
Nature/type of occupancy	7.2.1.1, 7.2.4, 7.9.1.5, 8.3.3.6.2, 8.4.4.1(1), 12.5.6.3(4), 12.5.6.4.2, 15.2.5.1, 16.4.6.1.1, 16.4.6.1.2, Figure 18.2 (Analyze the data), 18.3.1.5, 18.3.1.5.1, 18.3.1.6, 21.3.2(2), 21.4.1(4), 24.4.4.1			
Order of examination	18.3.1.3			
Initial scene assessment/examination	4.4.2, 18.2.5, 18.3, 18.3.1, 18.3.1.2, 18.5.1, 23.14.3, 23.14.4, 4.2			
Key words, structure exterior, assessment and examination	4.3.9, 8.2.4.5.4, 12.5.2.3.6(4), 13.1.2.1.2, 13.4.1, 13.4.1.1, 13.4.2, 18.2.5, 18.3, 18.3.1, 18.3.1.1, 18.3.1.2, 18.3.1.3, 18.3.1.6, 18.3.1.7, 18.3.1.8, 18.3.2.1, 18.5.1, 23.14.3, 23.14.3.1, 23.14.3.2, 23.14.4, 24.2.8, 27.13.2, 29.8, 30.3.1, 4.1.3, 4.2, 4.2.2(Exterior Survey)			

Task:	Literature Reference:	Yes	No	Pending-N/A
Structure interior	6.3.3, 16.2.6.6.1, 16.2.6.6.5, 18.3.1.3, 18.3.1.6, 18.3.2.4.5, 4.2.3			
Document doors and windows, keywords doors or windows	3.3.187, 5.1.2, 5.10.3.5.1, 6.3.2.2, 6.3.3, 7.2.2.1, 7.4.4, 7.7.4.2, 7.9.6.2.4, 11.7.1, 11.8.1.2, 16.2.6.5.2, 16.2.6.6.4, 16.4.5 (Drawings), 16.4.5.2, 18.4.1.4, 18.4.2, 19.3.1.6 (Types), 21.3.2(8), 21.4.1(10), 22.6.1.2, 22.6.2, 23.3.1, 23.5.5 (Venting), 23.14.4.3.2, Figure 23.15, 24.3.4.2, 24.3.5.2, 24.3.5.2.2, 25.5.2, 27.8.3 (Vehicle window positions), 27.13.4.7(RV), 27.13.6.2 (RV doors, windows, skylights and frames), 27.13.7.2 27.14.1.3			
Document utilities	6.3.3, 13.3.4.4, 13.3.7.4, 17.3.4.3.1, 21.3.3 (Loss of utilities), 28.8.2.9 (Ignition source), 4.2.8			
Document Fire Protection Systems	Chapter 8			
Surrounding areas/examine for evidence	3.3.157, 16.2.4.2, 16.2.6.4, 17.3.1.3, 18.3.3.1, 18.3.1.4, 18.3.3.5, 23.6.2 (Explosives), 23.14.2 (Securing the scene), 23.18.3.2, 24.2.1.1, 25.5.5, 27.7, 27.7.4, 27.17.1, 28.5.4.3.1, 28.7.3.2, 28.7.5.4, 28.7.5.9, 29.1.5.6 (Site), 30.9.2.3 (Under water) 4.2.2			
Detailed written or recorded notes	4.6, 7.9.6.2.3, 7.9.6.2.4, 9.11.7.5, 12.3.2.2, 12.5.2.2, 14.4.3, 16.1, Table 16.3.2, 16.3, 16.3.1, 16.3.3, 16.3.4, 17.5.2.1, 18.3.2.3.1, 18.3.3.3, 18.4.2, 22.2.2.2, 23.14.4.3.5, 24.14.4.4.2, 23.18.3.1.2, 24.4.1, 25.5.5.1, 25.5.5.2, 26.2.4, 26.3.4, 27.7.4.2, 27.8.1, 27.8.2.2, 27.8.2.3, 30.9.1 4.3.3, 4.5.3, 4.7.2			
Photography & digital photography	4.4.3.2, 9.11.7.4.8, 14.3.3, 15.3.1, 16.2, 16.2.1.2, 16.2.3.8, 16.2.4.1.1, 16.2.4.6, 16.2.6.11, 16.2.3.3, 16.2.4.2, 16.2.6.12, 17.10.1.2, 17.5.2.1, 18.2.2, 18.3.2.1, 18.3.3.1, 23.14.2.2.1, 23.14.2.3.2, 23.14.2.3.3, 23.14.4, 23.14.4.3, 23.14.4.3.1, 23.14.4.3.5, 4.2.7, 4.3, 4.3.2			
Considerations of all patterns	Chapter 6, 18.4.1.1, 4.2.4, 4.2.5, 4.2.7, 4.3.1			
Document contents, key words contents, location	5.6.1.3, 6.3.3,6.3.7, 7.2.3.5, 15.5.9, 16.2.4.4.1, 16.2.6.2, 16.2.6.6.1, 16.2.6.6.3, 17.3.1, 17.3.1.3, 17.3.4.1, 17.3.4.3.1, 18.3.1.6, 18.3.1.7, 18.3.2, 18.3.2.1, 18.3.2.4, 18.3.2.8, 18.3.2.8.1, 18.3.2.8.2, 18.4.2, 18.6.1.2, 27.3, 27.4.1, 27.15.1.4, 22.6.1, 4.2.3, 4.2.7, 4.3.1			

Task:	Literature Reference:	Yes	No	Pending-N/A
Flame, fire and smoke spread 3.3.7.2, 4.3.5, 4.3.7, 4.4.3.4, 4.4.5, 5.1.2, 5.2.3.1, 5.3.3, 5.5.1, 5.5.2.6, 5.6.2.1, 5.6.2.2, 5.6.3.1, 5.6.6, 5.7.3.2, 5.8, 5.8.1, 5.8.1.1, 5.8.1.2, 5.8.1.3, 5.8.1.3.1, 5.8.2, 5.8.2.1, 5.8.2.2, 5.8.2.3, 5.8.3, 5.8.3.1, 5.8.3.2, 5.8.3.3, 5.8.3.4, 5.8.3.5, 5.8.3.6, 5.8.3.7, 5.8.9, 5.9.1, 5.9.2, 5.9.2.1, 5.9.2.2, 5.9.2.2.1, 5.9.2.2.2, 5.10.1.2, 5.10.4.3, 5.11, 5.11.1, 5.11.2, 5.12, 6.2.4.3, 6.2.4.5, 6.2.11.1, 6.2.13.1, 6.3.1.1, 6.3.2.1.3, 6.3.2.2, 6.3.2.5, 6.3.3.1.2, 6.3.3.1.2.3, 6.3.3.2.1, 6.3.3.2.2, 6.3.7.6, 6.3.7.11.1, 6.3.7.11.2.1, 6.3.7.11.2.2, 6.4.1.1, 6.4.1.2, 7.1, 7.2.2.1, 7.2.2.1.2, 7.2.2.3.1, 7.2.2.4.1, 7.2.2.5, 7.2.3.7.2, 7.9.6.1, 7.9.6.2.1, 8.2.4.5.3, 8.2.4.5.4, 8.3.4.3.4.1, 10.1.1, 10.1.2, 11.1.1, 1.3.3, 11.7, 15.2.3, 17.2.1, 17.3.3, 17.5.4, 17.10, 18.2.1, 18.2.1.1, 18.2.1.2, 18.2.3, 18.2.5, 18.3.1.5, 18.3.3.2, 18.3.3.3, 18.3.3.4, 18.3.3.8, 18.3.3.12, 18.4.1.5, 18.4.2, 18.4.3, 18.6.2.1, 18.6.2.2, 19.4.1.3, 21.3.1, 21.3.2, 21.41, 21.5.2.1, 22.21.2.1, 22.2.4, 22.3.1.1, 22.4.2.1, 22.5.1, 24.2, 24.2.1.2(1-6), 24.2.2, 24.3.5.2.1, 24.3.6, 27.3.3.1, 27.6.2, 27.7.4, 27.7.4.2, 27.12.1, 27.13.7.2, 27.13.7.3, 27.15.5.5.4, 28.1, 28.2.1.1, 28.2.1.2, 28.3.4, 28.3.4.4, 28.4, 28.4.2, 28.5.4.2, 30.10.1.1.2, 30.10.1.1.4, ANSI/UL 263, 4.2.2(A), 4.2.2(B), 4.2.3(A), 4.2.4, 4.2.5, 4.2.5(A), 4.2.8				
Interpret and analyze fire patterns 5.6, 4.6.6, 6.1.1, 6.3.2, 6.3.2.1, 6.3.2.2.1, 6.3.2.5, 6.3.7, 6.3.7.2.1, 6.4, 6.4.1, 6.4.1.1, 6.4.1.2, 6.4.1.3, 17.3.2, Figure 18.2 (Pattern analysis, analyze the data), 18.2.3, 18.4.1.1, 18.4.1.2 (Sequence of patterns), 18.4.2, 19.6.4.4, 27.1.2, 27.13.7.1, 27.14.1.3, 28.7.3.3, 30.10.1.1.1, 3.3.4, 3.3.8, 4.2.4, 4.2.5				
Heat transfer (Thermal conductivity) 5.5.1, 5.5.1.2, 5.5.2.1, 5.5.2.2, 5.5.3.1, 5.5.3.3, 5.5.4.1, 5.5.4.2, (5.5 & 6.2.2.3 Heat transfer) (7.2.3.4 Conductivity), (22.4.2 Heat transfer analysis), 3.3.4, 3.3.8, 4.2.4				
Identify effects of ventilation 3.3.187, 5.3.2, 5.3.7, 5.9.1, 5.10.1.4, 5.10.2.7, 5.10.2.8, 5.10.3.1, 5.10.3.2, 5.10.4.4, 5.10.6, 6.2.4.4.1(2), 6.2.4.5, 6.2.11.1, 6.2.12.2, 6.2.13.3.1, 6.3.1, 6.3.1.2.1, 6.3.1.2.2, 6.3.2.2, 6.3.2.2.3, 6.3.2.2.3.1, 6.3.2.2.3.2, 6.3.2.2.3.3, 6.3.2.4, 6.3.2.5, 6.3.3.2.4, 6.3.5, 6.3.7, 6.3.7.1(3), 6.3.7.11.1, 7.2.4, 10.9.4.7.1, 16.2.6.6, 18.3.3.4, 18.4.1.3, 18.4.1.4, 18.4.1.5, 18.4.3, 18.4.3(3), 18.6.2.1, 21.3.2(8), 21.4.1(10), 22.6, 22.6.2, 23.5.2, 23.8.2.2.5, 23.10.1, 24.2.4.2, 24.2.8.1, 24.3.5.2.1, 24.3.6, 26.3.2, 27.4.3.2, 27.6, 27.14.1.3, 30.4.7, 30.4.7.4, 30.10.1.1.2				

Task:	Literature Reference:	Yes	No	Pending-N/A
Nature and extent of damage	7.2.6, 9.10, 15.2.6, 18.3.1.6, 18.4.1.3.1, 18.4.1.3.2, 21.3, 23.14.3.3, 23.14.3.6.2, 23.14.4.1.1, 24.2.8, 4.2.2, 4.2.2(A&B), 4.2.3(B), 4.2.6(A), 4.2.7(B), 4.2.9, & B			
Excavation and debris removal	13.3.2.2, 13.6.2.2, 18.3.1.7, 18.3.2.1, 18.3.2.2, 18.3.2.3, 18.3.2.7, 18.3.2.8, 27.10.2, 4.2.6 & A			
Locate and identify oxidants, potential ignition sources, & competent ignition sources	6.3.7.11.2.1, 9.11.7.4.1, 11.4.1.1.1, 12.3.5.5, 17.3.2, 18.6.1.2, 19.1.3, Figure 19.2 (Collect data), 19.3.3, 19.4.4.1, 19.4.4.3, 19.5.3, 23.17, 23.17(2), 27.16.3, 28.8.2.9, 4.2.6, 4.2.6(A), 4.2.6(B)			
First material ignited/ignition, Ignition sequence	Ignition-3.3.104, 5.7, 9.9, 23.17			
Material first ignited	3.3.120, 6.3.1.2.2, 18.4.1.3.2, 19.1.2, 19.4.1.1, 19.4.1.3, 26.4.1.1, 27.3, 28.2.3, 28.2.4, 4.2			
Ignition sequence	4.3.5, 4.3.7, 4.4.5, 9.2.7, 14.4.1.1, 19.1.3, 19.1.5, Figure 19.2 (Analyze data), 19.3.5, 19.4.4, 19.4.4.1, 19.4.4.2, 19.4.4.2.1, 19.4.4.3, 19.5, 19.6.5, 19.6.5.2, 23.14.1, 23.18.1			
Origin, cause and responsibility/motive and opportunity	Responsibility 3.3.145, 4.3.5, 4.3.7, 4.4.1, 4.4.3.4, 4.4.5, 14.1.1.2, 17.2.1, 17.3.5.1, 17.3.5.1.1, 17.10.20.1, 20.1, 21.1.1(4), 21.5, 21.5.1, 21.5.2, 21.5.3, 21.5.4, 23.14.1, 29.4.6.1 Motive 11.5, 11.6, 24.4.9 Motive versus intent 24.4.9.2 Classification of motive 24.4.9.3 3.3.2, 4.5.1, 4.5.1(A), 4.6.1(A), 4.6.3, 4.6.4, 4.6.5			
Evidence collection	4.4.4, Table 16.3.2, 17.3.2, 17.3.4.3.2, 17.4.2.1, 17.7.3, 17.10.1, 18.4.5.4, 29.6.1.1, 3.3.6, 4.2, 4.2.1, 4.2.1(A), 4.2.2, 4.2.2(A), 4.2.3(A), 4.2.6 & A&B, 4.2.9, 4.4.1, 4.4.1(A), 4.4, 4.4.3			
Evidence packaging	6.2.10.3.2, 17.6.2.4, 4.4.2, 4.4.2(A)			
Evidence/Artifact preservation	3.3.134, 3.3.167, 17.3, 17.3.1.2, 17.3.4.3.2, 17.3.5.2, 17.3.5.3.2(B), 23.14.4, 27.15.3.2, 28.9, 29.4.6.1, 29.6.1, 29.6.1.2, 30.12, 4.2.3, 4.2.6, 4.4			
Chain of custody of evidence	8.6, 12.5.2.1, 12.5.2.1.2, Table 16.3.2, 17.9, 17.9.1, 17.9.2, Figure 17.9.2, 4.4.4, 4.4(A)			
Pre-fire conditions	7.8.5, 11.7.2, 11.8.5(1), Figure 18.2 (Collect data), 18.3.2, 18.3.3.1, 18.3.3.4, 18.6.2.3, 30.7.2.1.1.4, 4.2.7, 4.3.3			

Task:	Literature Reference:	Yes	No	Pending-N/A
Fire scene reconstruction	3.3.70, 6.3.4.1.1, 7.8.5.1, 8.2.4.4, 10.9.8, 16.2.6.6.3, 17.3.4.3.1, 17.3.4.3.3, 17.3.5.3.3, Figure 18.2 (Collect data), 18.2.5, 18.3, 18.3.2, 18.3.2.1, 18.3.2.8.1, 18.3.2.8.2, 18.3.3, 18.4.6, 22.4.8.3.1, 24.2.1.6, 25.2.10, 26.2.1, 26.2.5, 26.3.4, 29.5.2.4.1, 4.2.7, 4.2.7(A)			
Witness observations	11.2.1, 8.2.4.5.4, 12.5.2.3.1, 16.2.6.10, 18.1.2(1), Figure 18.2 (Collect data), 18.3.3.15, 18.4.6, 19.3.5, 22.2.1.2.2, 22.2.3.2 Law enforcement & fire personnel 30.9.3.6, 4.5.1(A), 4.5.1(B) Reporting parties 28.7.1.1 4.5.1(A), 4.5.1(B) Initial attack crew 28.7.1.3 4.5.1(A), 4.5.1(B) Airborne personnel 28.7.1.3 Observations of other witnesses 28.7.1.4, 4.5.1(A), 4.5.1(B)			
Witness Interviews	4.3.2, 4.4.3.2, 7.2.2.6, 8.2.4.4, 13.9.2, 11.4.3, 11.7.2, 11.8.5, 13.9.3, 16.4, 18.1.2(1), figure 18.2 (Collect data) 18.2.2, 18.2.5, 18.3, 18.3.1.4, 18.3.3.15, 18.4.6, 18.5.1, 18.7.2, 18.8.3, 19.2.2, 19.3.5, 19.7.2, 22.2.1.1, 22.3.1.7(11), 22.3.2.6(11), 22.4.8.1, 23.14.2.2.1, 23.17, 23.17.7(7), 24.3.3.1, 24.3.3.2, 27.7.5.1, 28.7.1, 28.7.2 29.4.7, 4.5.1. 4.5.3			
Information from authorities	14.5.1.8 (Municipal Police Dept.), 14.5.1.9 (Municipal Fire Department), 14.5.10 (Other Municipal Agencies), 27.7.2, 29.4.7, 30.9.3.6, 4.5, 4.5.1, 4.5.2, 4.5.3			
Interview firefighter's suppression	6.3.2.5, 8.2.4.4, 18.3.1.7, 27.7.2, 29.4.7, 30.9.3.6, 4.3.3, 4.5, 4.5.1, 4.5.2, 4.5.3			
Interview neighbors, property owner's etc.	6.2.3.2, 18.3.3.1, 19.3.3, 27.6.2, 29.4.7, 4.3.3, 4.5, 4.5.1, 4.5.2, 4.5.3			
Documentation of the investigation	4.4.3.2, 4.4.3.3, 4.4.3.4, 4.6.1, 4.6.2, 6.2.17.7, 7.4.1.1, 7.8, 8.5, 8.5.1, 8.5.4, 8.5.6, 9.11.7.4.2, 9.11.7.4.3, 9.11.7.4.6, 12.3.5.2, 12.3.5.5, Chapter 16, 17.5.2.1, 17.5.2.2, Figure 18.2 (Collect data), 18.3.1.3, 18.3.1.7, 18.3.2.7, 18.3.3.6, 19.3, 22.1, 22.3.1.7(10), 22.3.2.6(10), 23.14.2.1, 25.5, 25.5.5, 25.5.6, 25.5.8.1, 25.6.2, 25.6.3, 27.1, 27.7, 27.7.4, 27.13.2, 27.13.7, 28.9, 29.4.1(9), 28.9, 30.3.1, 30.3.5.3.1, 30.3.5.3.2, 30.3.5.3.3, 30.9, 30.9.1, 30.9.2, 30.9.3.3, 30.9.3.4, 4.3.3, 4.6.2(A), 4.6.4, 4.7.1			
Utility company records	10.9.6.2.2, 22.2.2.1(8)			

Task:	Literature Reference:	Yes	No	Pending-N/A
Victims/Autopsies & medical report if applicable	6.2.1.7, 6.2.17.6, 6.2.17.7, 6.2.17.8, 6.2.17.9, 7.2.3.5, 11.8.5(4), 14.5.2.5, 16.2.6.9, Table 16.3.2 (Casualty field notes), 22.3.1.7(12) (Records victim), 22.3.2.6(12), 23.14.4.3.2, 23.14.4.3.3, 24.2.6, 25.10.4 (Medical history), Chapter 25 extensive discussion throughout chapter), 29.1.5.5 (Scene), 30.9.3.6.3(3), (Actions and location of occupants and fire victims), 4.4.1, 4.4.1(A)			
Documentation of smoke, heat, carbon monoxide, and flammable/explosive vapor detectors/alarms	5.6.4.8, 6.2.10.3 (Deposition), 6.2.10.3.1, 6.2.10.3.3, 6.2.10.3.4, 7.3.2.6.1(F), 8.2.2.1, 8.2.2.3, 8.2.2.2.2, 8.2.2.3.1, 8.2.2.3.2, 8.2.2.4, 8.2.4.1, 8.2.2.4.1, 8.2.2.4.2, 8.2.2.4.3, 8.2.2.4.4, 8.2.2.4.5, 8.2.2.5.1, 8.2.2.5.3, 8.2.2.5.4, 8.2.2.6, 8.2.4.4, 8.2.4.5.3, 12.5.7.1.2, 15.5.6.1, 16.2.6.6.5, 16.3.4, 18.3.3.8, 18.4.6, 18.6.2.1, 21.3.2(3), 21.4.5(5), 22.2.1.2.1, 22.4.8(7), 24.3.5.3.2, 27.13.5.3, 30.6.2.4			
Document weather conditions	13.3.2.1, 14.5.4.15, 14.6.16(Lightning detection network), 15.2.3, 18.3.3.5, 19.3.5, 22.2.2.1(12), 23.14.2.2.1, 28.3, 28.3.1, 28.7.1.2, 30.9.3.6.2(3), 4.2.3(A)			
Electrical arc survey, mapping, tracking Arc mapping, and parting arcs	3.3.8, 9.11.7.1, 9.11.7.2, 9.11.7.4.1, 9.11.7.5, 9.11.7.5.4, 18.1.2(3), Figure 18.2 (Analyze the data), 18.3.3.7, 18.4.5, 18.4.5.5, 18.4.6 Arc survey 18.4.5, 18.4.5.1, 18.4.5.2, 18.4.5.3, 18.4.5.4, 18.4.5.5, 18.4.5.6 Arc Tracking 9.9.4.5, 9.9.4.5.1, Figure 9.9.4.5.1, 27.4.2.5 Parting arcs 9.9.1.1, 9.9.3.1, 9.9.4.1, 9.9.4.4, 9.9.4.4.1, 9.9.4.4.2, 9.10.2, 9.10.2.1, 9.11.6, 9.11.9.1, 9.11.10, 26.5.3.1.1			
Diagram/sketch the scene	4.4.3.2, 4.6, 10.9.2.1.1, 12.5.2.1.1, 15.1.3, 15.3.1, 16.1.1, 16.3.4, 16.4, 16.4.1.1, 16.4.1.2, 16.4.2, 16.4.3.1, 16.4.4, 16.4.5.7, 16.5.2, 17.5.2.1, 17.5.6.1, 17.10.1.2, 17.11.2, 18.3.2, 18.4.2, 18.4.4.1, 18.4.5.1(2), 23.14.4, 23.14.4.1.4, 23.18.3.2, 25.5.5.1, 27.7.4, 27.8.1.1, 4.3, 4.3.1, 4.3.1(A), 4.3.3(A)			
Heat and flame vector analysis	16.4.5.7.1, Figure 18.2 (Analyze the data), 18.4.2, 18.4.2.1			
Isochar diagram	3.3.113, Figure 16.4.2(F), 18.4.3.1			

Task:	Literature Reference:	Yes	No	Pending-N/A
Depth of char	6.2.4.4, 6.2.4.4.3, 6.2.4.5, 6.3.6, 16.4.5.7.1, 17.10.1.2, Figure 18.2 (Analyze the data), 18.4.2.3, 18.4.3, 18.4.3.1, 18.4.3.2, 18.4.3.4, 18.4.3.5, 28.6.10			
Establish timelines	7.8.3, 18.2.4.5.4, 8.3.4.3.4.9, 8.4.4.2.8, 18.6.2.1, 19.3.5, 19.6.4.5, 22.2, 22.2.1.2, 22.2.5, 22.2.5.3, 22.2.5.4, Figure 25.2.5.5, 25.6.4 (Victim timeline), 25.10.1 (Timeline development), 4.6.5(A)			
Fire Cause Determination- Consideration of data	19.2.1, 4.2.7			
Sequence of activities	19.2.2			
Point or area of origin	19.2.3			
Data collection for fire cause determination	19.3, 4.2.7, 4.6			
Identify fuels in the area of origin	19.3.1 4.2.5(B), 4.2.6(A)			
Identify source and form of heat ignition	19.3.2, 4.2			
Identify items and activities in the area of origin	19.3.3			
Identify the oxidant	19.3.4			
Identify the ignition sequence data	19.3.5			
Analyze the data	Figure 19.2 (Analyze the data), 19.4			
Fuel analysis	19.4.1			
Geometry and orientation	19.4.1.1			
Ignition temperature	19.4.1.2			
Quantity of fuel	19.4.1.3			
Ignition source analysis	19.4.2, 4.2.6, 4.2.6(A)			
Consideration of flammable gases or liquid vapors	19.4.2.2			
Developing a cause hypothesis	19.5			
Testing the cause hypothesis with the scientific method	19.6			
Deductive reasoning	19.6.2, 4.2.5(B)			
Hypothesis testing questions	19.6.3,			
1. Is the hypothesized ignition source a competent ignition source for the first fuel ignited? _____				
2. Is the required time for ignition consistent with the time line associated with the cause hypothesis and facts of the incident? _____				
3. What were the circumstances that brought the ignition source in contact with the first material ignited? _____ _____				
4. What, if any, were the failure modes required for the ignition to occur? _____ _____				

Task:	Literature Reference:	Yes	No	Pending-N/A
Fire Cause Determination- Continued Means of hypothesis testing –Attempt to disprove rather than confirm hypothesis 19.6.4				
Fundamental principles of science applied 19.6.4.2				
Physical experiments or testing 19.6.4.3				
Cognitive experiments 19.6.4.4				
Time line testing cause hypothesis 19.6.4.5				
Fault trees to test hypothesized fire cause 19.6.4.6				
Appropriate use of process of elimination 19.6.5				
Cause undetermined (All hypothesized fire causes have been eliminated)? 19.6.5.1				
Selected final hypothesis 19.7				
Established the cause? 19.7.1				
Considered inconsistent data? 19.7.2				
Safety devices and features (Account for the actions of the devices)? 19.7.3				
Recognize and resolve contradictions to the scenario? (Figures 18.2 & 19.2 Test the hypothesis)				
Reports, review reports, manuals, codes and scientific literature.				
Review- 4.3.2, 4.4.3.2, 4.6, 7.2.2.1.3 (Design plans)				
7.9.1.1 (Review codes)				
11.4.1.1.2 (Equipment & appliance information review)				
12.4.2.4(1), 14.6.16 (Lightning detection network reports), 15.2.2, 16.4.6.4, 18.7, 18.7.3, 19.3, 19.7, 25.8.1, 26.6.8, 26.6.14, 27.15.14.3, 4.2, 4.6.1				
Reports 4.4.1, 4.7, 6.2.17.7 (Autopsy reports), 12.4.2.4 (1), 12.5.2.2, 14.3.2, 14.5.1.9, 15.2.2, 16.1.1, 16.2.8, 16.3.1, 16.3.2, 16.3.3, 16.5, 16.5.1, 16.5.2, 16.5.3, 17.5.2.1, 17.11.2, 22.2.2.1 (3, 4, 5, 6, 7 & 8), 22.2.4, 22.3.1.7(9), 22.3.2.6 (9), 23.14.2.2.1, 25.8.1, 27.7.5.1, 4.6.1, 4.6.1(A & B), 4.6.3, 4.6.5, 4.7.3				
Scientific literatures 18.6.2.2, 19.6.4.1				
Form opinions 1.1, 4.5.1, 4.5.3, 12.1, 12.3.5.2, 12.4.1, 12.4.2.3, 12.4.2.3.2, 12.4.2.3.3, 12.4.2.4 (2), 12.5.2.3.1, 12.5.2.3.2, 12.5.2.3.5, 12.5.2.3.6, 15.5.1.2, 16.1.2, 16.5.2, 16.5.3, 24.4.1.2, 4.6.5, 4.7.1				
Form conclusions 4.3.6, 4.3.8, 4.4.3.3, 4.4.6, 4.5, 4.6.3.2, 6.2.13.1.7, 6.3.3.2.7, 9.11.7.5.4, 12.5.1.1, 12.5.2.3.1, 12.5.2.3.2, 14.7, 16.1.2, 16.3.1, 16.3.2, 16.5, 16.5.3, 17.10.1.6.3, 18.8, 18.8.2, 19.4.4.3, 21.1.1, 22.5.3, 24.4.1.2, 4.1.2				

Task:	Literature Reference:	Yes	No	Pending-N/A
Express level of certainty	4.5, 4.5.1, 4.5.2, 4.5.3, 19.7.4, 20.2, 20.1.1, 20.1.4			
Avoid confirmation bias (Different hypothesis compatible with same data)	4.3.9, 4.6.2.1			
Classification of the cause	20.1, 20.1.1, 20.1.2, 20.1.3, 20.1.4, 21.5.1			
Prepare a written report	12.4.2.4 (2 & 3), 14.3.2, 17.5.2.1, 4.7.1			
Review procedure	4.6, 4.2			
Administrative review- Within organization	4.6.1			
Limitations of administrative review	4.6.1.1			
Technical review	4.6.2			
Limitations of a Technical review, access to all documentation	4.6.2.1, 4.6.3.2			
Peer review references such as NFPA® 921 & 1033-	4.6.3, 4.6.3.1, 12.5.2.3.6 (2)			
Limitations of peer reviews	4.6.3.2			
Resources, expert resources, coordinate resources	4.4.2, 8.1.2, 10.9.1, 12.5.6, 12.5.6.4.2, 13.4.1.3.2, 15.1.2, 16.1.2, 18.2.1.2, 19.2.1, 22.4.9.2, 23.1.8, 27.13.10, 4.2.8 (Coordinate expert resources), 4.6.3, 4.6.3(A), 4.6.3(B)			
Public information presentations	Figure 13.4.3, 4.7			
Maintain necessary liaison with other interested professionals	Figure 13.4.3, 4.1.4			
Inspections	8.3.4.3.4.7, 8.4.4.2.6, 8.5.5, 29.6.4			
Nondestructive Inspections	29.6.4.1			
Destructive Inspections	29.6.4.2			
Evidence collection or inspection	17.10.1			
Testing of evidence	29.6.4.3			
Express investigative findings/presentations	4.7, 4.7.2			
Testify during legal proceedings	12.4.2.3, 12.4.2.3.3, 12.5.2.3.2 (A & B), 4.7.3			

Investigator _____
Name (Printed) Signature

Date(s) of Scene Examination _____

The literatures listed above are not intended to be a complete listing of each word, every time it is listed in the documents.

It is intended to represent the most pertinent keywords where the references are listed, to ensure an efficient way for every investigator, expert, consultant or other professionals to review his/her examination documentation.

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Revised 04-15-2014

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