Guidelines for Use of Outlines in Evolutions. These outlines are provided to assist training personnel using NFPA 1410, *Standard on Training for Emergency Scene Operations*. All personnel involved in the evolutions should be clothed in the correct safety gear or fire-fighting protective clothing and equipment. The total number of personnel used for each evolution should not exceed the number of persons who are normally assigned to each unit that responds on the initial alarm. For those evolutions that use one engine company, the number of personnel assigned should be limited to a single engine company. All personnel over the number that normally staff the first engine company should be delayed 30 seconds before entering the evolutions.

#### **B.1.1** Evolution No. 1.

Evolution No. 1 uses one engine company, one supply line, and two handlines If the number of personnel used to perform this evolution exceeds the normal single-engine company staffing, the additional personnel should be delayed 30 seconds before becoming involved in the evolution.

- (1) Stage the engine company and assigned personnel away from the hydrant. When personnel are ready, give signal for engine to proceed to hydrant.
- (2) Start recording time when engine stops at the hydrant. (Do not allow additional personnel to start for 30 seconds.)
- (3) Steps of operation are as follows:
  - (a) Lay one supply line from the hydrant a minimum distance of 300 ft.
  - (b) Advance one attack line from the engine a minimum distance of 150 ft.
  - (c) Advance one backup line from the engine a minimum distance of 150 ft.
  - (d) Operate all lines at proper pressures and flows.
- (4) Stop time when all lines are supplied properly.
- (5) Note equipment and personnel used in the test as follows:
  - (a) Size of supply line used.
  - (b) Size of attack line used.
  - (c) Size of backup line used.
  - (d) Number of persons used.
- (6) Maximum time of evolution 3 minutes.

#### **B.1.2** Evolution No. 2.

Evolution No. 2 uses two engines, one supply line, and two handlines. A 30-second delay should be used to start the second engine company and all personnel over the normal staffing of the first engine company.

- (1) Stage engines and assigned personnel away from the simulated fire area. When personnel are ready, give signal for first engine company to proceed to the fire area.
- (2) Start recording time when first engine stops at the fire area. (Do not allow second engine and additional personnel to start for 30 seconds.)
- (3) Steps of operation are as follows:
  - (a) At the fire area, remove and advance one attack line and one backup line a minimum distance of 150 ft. from the first engine.
  - (b) After a 30-second delay, give signal for second engine to proceed to location of first engine.
  - (c) When second engine is stopped at first engine, remove supply hose from second engine, which then proceeds to hydrant location.
  - (d) Connect supply hose to first engine and connect either supply hose or second engine to hydrant.
  - (e) Operate all lines at proper pressures and flows.
- (4) Stop time when all lines are supplied properly.
- (5) Note equipment and personnel used in test as follows:
  - (a) Size of supply line used.
  - (b) Size of attack line used.
  - (c) Size of backup line used.
  - (d) Number of persons used.
- (6) Maximum time of evolution 4 minutes

#### **B.1.3** Evolution No. 3.

Evolution No. 3 uses two engines, two hydrants, two supply lines, and two handlines. A 30-second delay should be used to start the second engine company and all personnel over the normal staffing of the first engine company.

- (1) Stage engine companies and assigned personnel away from the hydrants. When personnel are ready, give signal for first engine company to proceed to hydrant.
- (2) Start recording time when engine stops at the hydrant. (Do not allow additional personnel to start for 30 seconds.)
- (3) Steps of operation are as follows:
  - (a) First engine lays one supply line from the hydrant a minimum distance of 300 ft.
  - (b) Advance one attack line from the first engine a minimum distance of 150 ft.
  - (c) Second engine lays one supply line from the hydrant a minimum distance of 300 ft.
  - (d) Advance one backup line from the second engine a minimum distance of 150 ft.
  - (e) Operate all lines at correct pressures and flows.
- (4) Stop time when all lines are supplied correctly.
- (5) Note equipment and personnel used in test as follows:
  - (a) Size of supply line used.
  - (b) Size of attack line used.
  - (c) Size of backup line used.
  - (d) Number of persons used.
- (6) Maximum time of evolution 3 minutes 30 seconds.

#### **B.1.4** Evolution No. 4.

Evolution No. 4 uses one engine company, one supply line, and two handlines operated from a wye (Skid Load). If the number of personnel used to perform this evolution exceeds the staffing for a normal single-engine company, the additional personnel should be delayed 30 seconds before becoming involved in the evolution.

- (1) Stage engine company and assigned personnel away from the simulated fire area. When personnel are ready, give signal for engine to proceed to the fire area.
- (2) Start recording time when engine stops at the fire area. (Do not allow additional personnel to start for 30 seconds.)
- (3) Steps of operation are as follows:
  - (a) At the fire area, remove two attack lines, wye, and leader line from the engine.
- (b) Lay leader line to hydrant a minimum distance of 300 ft. and connect engine to hydrant.
  - (c) At the fire area, connect attack line and backup line to wye and advance 150 ft.
  - (d) Operate all lines at proper pressures and flows.
- (4) Stop time when all lines are supplied properly.
- (5) Note equipment and personnel used in test as follows:
  - (a) Size of supply line used.
  - (b) Size of attack line used.
  - (c) Size of backup line used.
  - (d) Number of persons used.
- (6) Maximum time of evolution 4 minutes.

#### **B.1.5** Evolution No. 5.

Evolution No. 5 uses two engines, one supply line, and two handlines A 30-second delay should be used to start the second engine and all personnel over the normal staffing of the first engine.

- (1) Stage engines and assigned personnel away from the simulated fire area. When personnel are ready, give signal for engine to proceed to the fire area.
- (2) Start recording time when engine stops at the fire area. (Do not allow additional personnel to start for 30 seconds.)
- (3) Steps of operation are as follows:
  - (a) At the fire area, remove and advance one attack line and one backup line a minimum distance of 150 ft. from the first engine.
  - (b) After a 30-second delay, give signal for second engine to proceed to location of first engine.
  - (c) When second engine is stopped at first engine, remove supply hose from second engine, which then proceeds to water source and sets up for drafting operations.
  - (d) Operate all lines at correct pressures and flows.
- (4) Stop time when all lines are supplied correctly.
- (5) Note equipment and personnel used in test as follows:
  - (a) Size of supply line used.
  - (b) Size of attack line used.
  - (c) Size of backup line used.
  - (d) Number of persons used.
- (6) Maximum time of evolution 6 minutes.

#### **B.1.6** Evolution No. 6.

Evolution No. 6 uses one engine operating from a water supply tank, two handlines, and water supply apparatus. If the number of personnel used to perform this evolution exceeds the staffing for a normal single engine company and a water supply apparatus, the additional personnel should be delayed 30 seconds before becoming involved in the evolution. The procedures are as follows:

- (1) Stage engine company, water supply apparatus, and assigned personnel away from the simulated fire area. When personnel are ready, give signal for engine to proceed to fire area.
- (2) Start recording time when engine stops at the fire area. (Do not allow additional personnel to start for 30 seconds.)
- (3) Steps of operation are as follows:
  - (a) At the fire area, remove and advance one attack line and one backup line a minimum distance of 150 ft. from the engine.
  - (b) After a 30-second delay, locate water supply tank at fire area, fill tank, and establish water supply to engine.
  - (c) Maintain water supply through continuous tender operations for a minimum time of 30 minutes or as otherwise required by the AHJ.
  - (d) Operate all lines at proper pressures and flows.
- (4) Stop time when all lines are supplied correctly.
- (5) Note equipment and personnel used in test as follows:
  - (a) Size of supply line used.
  - (b) Size of attack line used.
  - (c) Size of backup line used.
  - (d) Number of persons used.
- (6) Maximum time of evolution 5 minutes.

#### **B.1.7** Evolution No. 7.

Evolution No. 7 uses one engine, one portable master stream appliance, and one large diameter or two 2 ½ supply lines. If the number of personnel used to perform this evolution exceeds the normal single-engine staffing, the additional personnel should be delayed 30 seconds before becoming involved in the evolution. The procedures are as follows:

- (1) Stage engine company and assigned personnel away from the simulated fire area. When personnel are ready, give signal for engine to proceed to fire area.
- (2) Start recording time when engine stops at the fire area. (Do not allow additional personnel to start for 30 seconds.)
- (3) Steps of operation are as follows:
  - (a) At the fire area remove supply line (s) from engine, locate the monitor device, and connect supply line (s) to the demounted, portable master stream appliance.
  - (b) Lay supply line (s) a minimum distance of 300 ft.
  - (c) Connect engine to the hydrant.
  - (d) Supply the master stream appliance at correct pressures and flows.
- (4) Stop time when the master stream appliance is supplied correctly.
- (5) Note equipment and personnel used in test as follows:
  - (a) Size of supply line used.
  - (b) Size of attack line used.
  - (c) Size of backup line used.
  - (d) Number of persons used.
- (6) Maximum time of evolution 5 minutes.

#### **B.1.8 Evolution No. 8.**

Evolution No. 8 uses one engine, an engine-mounted master stream appliance, and two supply lines. If the number of personnel used to perform this evolution exceeds the normal single-engine staffing, the additional personnel should be delayed 30 seconds before becoming involved in the evolution.

- (1) Stage engine company and assigned personnel away from the hydrant. When personnel are ready, give signal for engine to proceed to the hydrant.
- (2) Start recording time when engine stops at the hydrant. (Do not allow additional personnel to start for 30 seconds.)
- (3) Steps of operation are as follows:
  - (a) Lay a supply line from the hydrant a minimum distance of 300 ft.
  - (b) Place engine-mounted master stream appliance in operation and operate at correct pressures and flows.
- (4) Stop time when the master stream appliance is supplied correctly.
- (5) Note equipment and personnel used in test as follows:
  - (a) Size of supply line used.
  - (b) Size of attack line used.
  - (c) Size of backup line used.
  - (d) Number of persons used.
- (6) Maximum time of evolution 3 minutes.

#### **B.1.9** Evolution No. 9.

Evolution No. 9 uses one aerial truck with an elevated master stream appliance, one engine, and two supply lines. The number of personnel used to perform this evolution should not exceed the normal engine and ladder company staffing.

- (1) Stage all apparatus and assigned personnel away from the simulated fire area. When personnel are ready, give signal for engine to proceed to the fire area.
- (2) Start recording time when first vehicle stops at the fire area. (Do not allow additional personnel to start for 30 seconds.)
- (3) Steps of operation are as follows:
  - (a) Position apparatus and prepare elevated master stream for service.
  - (b) Lay a supply line a minimum distance of 300 ft. and connect engine to the hydrant.
  - (c) Connect supply line to elevated master stream appliance intake and operate the master stream at correct pressures and flows.
- (4) Stop time when the elevated master stream appliance is supplied correctly.
- (5) Note equipment and personnel used in test as follows:
  - (a) Size of supply line used.
  - (b) Size of attack line used.
  - (c) Size of backup line used.
  - (d) Number of persons used.
- (6) Maximum time of evolution 4 minutes.

#### **B.1.10** Evolution No. 10.

Evolution No. 10 uses one apparatus equipped with an elevated master stream device, one engine company, one large-diameter supply line, and one handline. The number of personnel used to perform this evolution should not exceed the normal engine and ladder company staffing.

- (1) Stage all apparatus and assigned personnel away from the simulated fire area. When personnel are ready, give signal for engine to proceed to the fire area.
- (2) Start recording time when first vehicle stops at the fire area. (Do not allow additional personnel to start for 30 seconds.)
- (3) Steps of operation are as follows:
  - (a) Position apparatus and prepare elevated master stream for service.
  - (b) Remove large-diameter supply line and 200 ft. handline from engine. Engine lays supply line a minimum distance of 300 ft. and connects to the hydrant.
  - (c) Operate master stream and handline at correct pressures and flows.
- (4) Stop time when the elevated master stream appliance and handline are supplied correctly.
- (5) Note equipment and personnel used in test as follows:
  - (a) Size of supply line used.
  - (b) Size of master stream nozzle used.
  - (c) Size of handline used.
  - (d) Amount of water flowed.
  - (e) Number of persons used.
- (6) Maximum time of evolution 5 minutes 30 seconds.

#### **B.1.11 Evolution No. 11.**

Evolution No. 11 uses one apparatus equipped with an elevated master stream appliance, one engine, and two large diameter supply lines (one supply line between the hydrant and the engine and one supply line between the engine and the elevated master stream appliance intake) The number of personnel used to perform this evolution should not exceed the normal engine and ladder company staffing.

- (1) Stage all apparatus and assigned personnel away from the hydrant. When personnel are ready, give signal for the apparatus equipped with the elevated master stream appliance to proceed to simulated fire area and for the engine to proceed to the hydrant.
- (2) Start recording time when engine stops at the hydrant. (Do not allow additional personnel to start for 30 seconds.)
- (3) Steps of operation are as follows:
  - (a) Lay a supply line from the hydrant a minimum distance of 300 ft.
  - (b) Position aerial apparatus and prepare elevated master stream appliance for service.
  - (c) Lay one 100 ft. supply line from the engine to the elevated master stream appliance intake.
  - (d) Place elevated master stream in operation and operate at correct pressures and flows.
- (4) Stop time when elevated master stream is supplied correctly.
- (5) Note equipment and personnel used in test as follows:
  - (a) Size of aerial supply line used.
  - (b) Size of master stream nozzle used.
  - (c) Number of persons used.
- (6) Maximum time of evolution 5 minutes

#### **B.1.12** Evolution No. 12.

Evolution No. 12 uses a simulated sprinkler connection, one engine, and two or three supply lines (one supply line between the hydrant and engine and one large diameter, or two 2 ½ supply lines between the engine and sprinkler connection). If the number of personnel used to perform this evolution exceeds the normal single-engine staffing, the additional personnel should be delayed 30 seconds before becoming involved in the evolution.

The procedures are as follows:

- (1) Stage the engine company and assigned personnel away from the hydrant. When personnel are ready, give signal for the engine to proceed to the hydrant.
- (2) Start recording time when engine stops at the hydrant. (Do not allow additional personnel to start for 30 seconds.)
- (3) Steps of operation are as follows:
  - (a) Lay a supply line from the hydrant a minimum distance of 300 ft.
- (b) Lay 100 ft. of 5 inch or two 2 ½ inch supply lines from the engine to the sprinkler connection.

DO NOT CHARGE THE SPRINKLER SYSTEM WITHOUT THE KNOWLEDGE AND PERMISSION OF THE BUILDING OWNER.

- (c) Operate at correct pressures and flows if charging the system.
- (4) Stop time when all lines are supplied correctly.
- (5) Note equipment and personnel used in test as follows:
  - (a) Size of supply lines used between engine and hydrant.
  - (b) Size of supply lines used between engine and sprinkler.
  - (c) Amount of water flowed.
  - (d) Number of persons used.
- (6) Maximum time of evolution 3 minutes 30 seconds.

#### **B.1.13 Evolution No. 13.**

Evolution No. 13 uses a simulated sprinkler connection, one engine, and two or three supply lines (one supply line between the hydrant and engine and one large diameter, or two 2 ½ supply lines between the engine and sprinkler connection). If the number of personnel used to perform this evolution exceeds the normal single-engine staffing, the additional personnel should be delayed 30 seconds before becoming involved in the evolution.

The procedures are as follows:

- (1) Stage the engine company and assigned personnel away from the sprinkler connection. When personnel are ready, give signal for engine to proceed to the sprinkler connection.
- (2) Start recording time when engine stops at the sprinkler connection. (Do not allow additional personnel to start for 30 seconds.)
- (3) Steps of operation are as follows:
  - (a) Lay one 5 inch or two 2 ½ inch supply lines a minimum distance of 300 ft. from the sprinkler connection to the hydrant and connect engine to the hydrant.
  - (b) Connect supply lines to the sprinkler connection.

# DO NOT CHARGE THE SPRINKLER SYSTEM WITHOUT THE KNOWLEDGE AND PERMISSION OF THE BUILDING OWNER.

- (c) Operate at correct pressures and flows if charging the system.
- (4) Stop time when all lines are supplied correctly.
- (5) Note equipment and personnel used in test as follows:
  - (a) Size of supply lines used.
  - (b) Amount of water flowed.
  - (c) Number of persons used.
- (6) Maximum time of evolution 3 minutes 30 seconds

#### **B.1.14** Evolution No. 14.

Evolution No. 14 uses a simulated standpipe connection, one engine company, and three supply lines (one large-diameter supply line between the hydrant and engine and two supply lines between the engine and standpipe connection). If the number of personnel used to perform this evolution exceeds the normal single engine staffing, the additional personnel should be delayed 30 seconds before becoming involved in the evolution.

- (1) Stage the engine company and assigned personnel away from the hydrant. When personnel are ready, give signal for the engine to proceed to the hydrant.
- (2) Start recording time when engine stops at the hydrant. (Do not allow additional personnel to start for 30 seconds.)
- (3) Steps of operation are as follows:
  - (a) Lay one large-diameter supply line from the hydrant a minimum distance of 300 ft.
- (b) Lay two supply lines a minimum distance of 100 ft. from the engine to the standpipe connection.
  - (c) Operate at correct pressures and flows.
- (4) Stop time when all lines are supplied correctly.
- (5) Note equipment and personnel used in test as follows:
  - (a) Size of supply line used between hydrant and engine.
  - (b) Size of supply lines used between engine and standpipe connection.
  - (c) Amount of water flowed.
  - (d) Number of persons used.
- (6) Maximum time of evolution 3 minutes 30 seconds.