Fireground Safety System

A. <u>INTRODUCTION:</u>

To cite one example, and there are several others, in a large city several firefighters were killed at a seemingly routine structure fire. Investigation reports of this incident indicated that firefighters were in trouble inside the house and a rescue was attempted. Apparently when the rescue crew exited the structure, there was some confusion. It was thought that they were the crew that had been in trouble and further rescue efforts were discontinued. Later, as the smoke cleared, the bodies of the fallen firefighters were discovered. In the final analysis it was determined that the Incident Commander did not know exactly which personnel were on scene, nor was there a procedure for acquiring the status of all personnel at any given time.

One way to significantly decrease the odds of this type of tragedy from occurring in our departments is to implement a quality Fireground Safety System. After a thorough investigation of the different types of systems available, the Fireground Safety System concept was tailored to the needs of the fire service in Monterey County. The Monterey County Fireground Safety System is comprised of six components as follows:

        I.   **Firefighter Accountability System**

        II.   **Building Emergency Evacuation Signal.**

        III.   **Personnel Accountability Reports (PARs).**

        IV.   **Missing Firefighter Procedure.**

        V.   **Initial Rapid Intervention Crew (IRIC).**

        VI.   **Rapid Intervention Crew (RIC).**

        VII. SCBA Rope Bags

Due to the increasing Mutual Aid request and Auto Aid agreements throughout the county, there is a need for a standardized fireground safety system. This is the overall purpose of the Monterey County Fireground Safety System. This system will give every department in Monterey County a standardized way to account for the safety of their personnel and mutual aid agencies on the fireground.

I. Firefighter Accountability System

A. <u>PURPOSE</u>:

The purpose of this system is intended to improve personal firefighter safety by accounting for all firefighters at any given time. The passport system is to be implemented any time that command is formalized and an Incident Commander has been established. It is intended that the system will identify which personnel are on scene (by collecting company passports), by using a status board to indicate their assignment, and to utilize periodic personnel accountability reports (PARs). The key component that must be emphasized is **Company Unity** and **Unity of Command**. Everyone is held accountable at every level; there is **NO** freelancing.

B. <u>SYSTEM DESCRIPTION</u>:

1. System Overview:

   The "passport system" involves a nametag for each member assigned to a particular piece of apparatus and is affixed to a card (passport). The "passport" is affixed to the dashboard of the apparatus and includes the unit number and the department identifier (utilizing the three letter designator). The "passports" are either turned in or collected at the incident by the person responsible for firefighter accountability.

   In addition to the "passports", each firefighter's helmet displays either the four-digit resource identification number, or the three-letter agency identifier for volunteer or paid-call personnel not assigned to a specific resource, on both sides of the helmet to aid in fireground identification.

2. System Hardware:

   Several pieces of hardware make up the accountability system as follows:

   a) Individual Nametags
      - Size of the nametag is $2^1/_2$ inches wide x ½-inch high plastic, or other similar material, with a Velcro (hook) strip on the back.

      - Each firefighter is issued three nametags with his/ her name placed on them.

      - Nametags are color-coded by rank:
Chief Officers:	white tag w/black letters
Company Officers:	red tag w/white letters
Engineers:	green tag w/white letters
Firefighters:	yellow tag w/black letters
Explorers	black tag with white letters
Ambulance Personnel:	blue tag w/white letters

- Nametags can be attached to the underside of the helmet brim in the rear when not in use.

b) Passports:

- Size of the passport is $2^3/_4$ inches wide x 3½ inches high plastic, or similar material, with a Velcro strip (loop) on the front and (hook) on the back. The passport should be white in color with black print.

- The department's three-letter designator and the apparatus number are placed across the top.

- The front of the passport receives the names of the individuals assigned to that piece of apparatus.

- The passport is attached to a Velcro (loop) strip located on the dash of the apparatus on the officer's side.

- Chief officers who may be assigned as an Incident Commander, Safety Officer, or Accountability Officer should carry at least 5 blank passports for resources not compliant with the Monterey County Fireground Safety System passport requirement.

c) Status Boards:

- Size of the status board is 18 inches wide x 24 inches high plastic, or similar material with Velcro (loop) strips on the front.

- Status board header tags measure $2^3/_4$ inches x 2 inches plastic, or similar material with a Velcro (hook) strip on the back. The header tag should be white in color with black print. A small strip of Velcro (loop) should be placed under the script for use with overhead positions. These tags are to be placed at the top of the status board to identify where the various fire companies are located on the incident.

- Status boards are to be used by the individual responsible for personnel accountability, either the Incident Commander, Safety Officer, or Accountability Officer.

d) Helmet Identification Tags:

- Helmets shall have two magnetic strips, 4 inches wide x 2 inches high, one permanently attached on each side of the helmet.

- A second magnetic strip with the resource identification number, or 3-letter agency identifier for off-duty, volunteer or paid-call personnel not assigned to a specific apparatus, shall then be affixed to the permanently mounted magnetic strip. Both sides of the helmet shall have the same identifier.

- The color of the helmet identification tags shall be white with red reflective lettering.

- An adequate number of strips with the apparatus number must be provided for the number of personnel assigned to an apparatus, plus extras to allow for apparatus personnel changes.

e) Hardware Template Size:

- Appendix A shows the different hardware templates shown in actual working size. Lettering size and font should be legible and fit within the prescribed template size.

C. PRE-INCIDENT PROCEDURES:

1. Company Passport Set-Up:

a) Crewmembers are responsible for immediately updating the company passport as they arrive for duty; including shift change, transfer from another station, or call back.

b) Name tags are to be placed on the passport in the following order:

- Company Officer
- Engineer
- Firefighter

2. Helmet Identification Tags:

a) Arriving crewmembers are responsible to ensure that their helmet identification tags reflect the company ID that they are assigned to.

3. Company Officer's Responsibility:

a) Company Officers are responsible for ensuring that the passports and helmet IDs are current.

b) Passports must reflect only those members actually assigned to the company.

D. <u>EMERGENCY INCIDENT PROCEDURES</u>:

1. Initial arriving crews on the incident may leave their passports on the dash of the apparatus. The IC or Accountability Officer will be responsible for collecting initial-attack resource passports.

2. Subsequent arriving crews must bring their passports to the Incident Commander, Accountability Officer or Staging Area Manager as they check in, unless an assignment upon arrival precludes this. For off-duty and/or volunteers who arrive at the scene by POV (Privately Owned Vehicle), they shall report to the Incident Commander or Staging Area Manager for an assignment and turn in their nametag. The Incident Commander shall place that individual's nametag on the passport of the company he/she is assigned to.

3. In the absence of an ICP (Incident Command Post), off-duty and/or volunteers shall report to the pumping engine in front of the building for an assignment. It shall be the responsibility of the individual to place his/her nametag on the appropriate passport of the engine to which he/she was assigned. In the case of Mutual Aid alarms, off-duty and/or volunteers should report to their respective engines and contact that company officer for an assignment.

4. The Incident Commander may designate a runner to collect the passports and bring them to the ICP or designate an Accountability Officer to collect and manage the passports.

5. The Incident Commander, or Safety Officer or Accountability Officer if assigned, shall complete a blank passport for any resource not compliant with the Monterey County Fireground Safety System passport requirement.

6. The Incident Commander or Accountability Officer will maintain the passports on a status board that indicates the assignment of all personnel assigned to the incident.

E. <u>ACCOUNTABILITY OFFICER'S CHECKLIST</u>:

Appendix B is the Accountability Officer's Checklist.

II. Building Emergency Evacuation Signal

A. <u>PURPOSE:</u>

To provide a uniform signal to alert personnel of dangerous conditions that requires them to immediately leave the building.

B. <u>RESPONSIBILITY:</u>

The Incident Commander is responsible for initiating the "Building Emergency Evacuation Signal" when it is determined that building conditions have deteriorated to the point that it is too dangerous to maintain firefighting crews in the building.

The Incident Commander is also responsible for conducting a post-incident analysis whenever a significant operational event occurs where the " Building Emergency Evacuation Signal" was activated.

C. <u>PROCEDURE:</u>

1. The Incident Commander will initiate the "Building Emergency Evacuation Signal".

2. The "Building Emergency Evacuation Signal" shall consist of the following three components:

   - <u>Radio message from the Incident Commander:</u>

     ◊ Message will be transmitted on all frequencies operating on the incident

     ◊ The radio message will consist of the term:
       "Attention All Units On The _____ Incident, Standby For Emergency Traffic, Clear The Building"

   - <u>Evacuation Signal:</u>

     In addition to the radio announcement, the IC will also direct an engine operating at the scene to sound the *Evacuation Signal.* The Evacuation Signal will consist of repeated short blasts of the air horn for approximately ten seconds, followed by ten seconds of silence. This cycle shall be repeated three times. The signal may need to be transmitted in each division.

   - <u>Personnel Accountability Report:</u>

◊ The Incident Commander will initiate a Personnel Accountability Report (PAR) to confirm that all personnel are clear of the building.

◊ PARs will be discussed in greater detail in Section III of this document.

3. Upon activation of the "Building Emergency Evacuation Signal", all incident radio traffic will cease except that which is needed to obtain a Personnel Accountability Report (PAR).

4. The term "**Emergency Traffic**" will be utilized whenever a fire crew encounters an immediately dangerous situation and will receive the highest priority from the communication dispatch centers, command, and all operating units. Clear text shall be used to identify the type of emergency "Firefighter Down," "Firefighter Missing," "Firefighter Trapped," etc. Upon acknowledgement the reporting crew shall use clear text and explain the situation and give as much detail as possible.

- Transmit the location of the emergency
- Give number of injured or missing
- Report identity if known
- State what happened
- Advise if any special equipment is needed
- Advise of any specific hazards.

III. Personnel Accountability Reports (PARs)

A. <u>PURPOSE:</u>

At certain points during the incident, when hazardous events occur, or when tactical benchmarks are achieved, a roll call of personnel should be taken. The objective is to account for firefighters at certain points during an incident.

The term (PAR) Personnel Accountability Report is used as part of the roll call process. The IC may request a PAR from Division/Group Supervisors or from individual Company Officers at any time. Company Officers would visually confirm that their crews are intact and accounted for and report a PAR (for example, "**IC, This is engine 5512, I have a PAR of 3**").

B. <u>BENCHMARKS FOR REQUESTING PARs:</u>

A personnel accountability report should be considered whenever any of the following situations occur:

- A report of a missing or trapped firefighter.

- Any sudden hazardous event (flashover, backdraft, collapse, etc.).

- A change from offensive to defensive operations.

- By crews reporting an "all clear" (indicating that the primary search has been completed.

- At the time that the fire is declared controlled.

- At 20-minute elapsed time intervals.

- Any time the Incident Commander deems it necessary to initiate a roll call.

C. <u>INCIDENT ELAPSED TIME NOTIFICATION</u>

The dispatch center shall notify the Incident Commander 10 minutes after the arrival of the first resource, and every 10 minutes thereafter until the incident is controlled or the elapsed time notification is cancelled by the Incident Commander (NFPA 1561, 2002 edition). Example: "_____ I.C., FIRECOM <u>10,20,30, etc.</u> minute elapsed time notification."

IV. Missing Firefighter Procedure

A. <u>PURPOSE</u>:

A written rescue/recovery procedure is an integral part of all fireground safety systems. The following procedure should be immediately implemented when any firefighter is suspected missing or down. There can be no hesitation since the window of survivability for the lost firefighter is very narrow.

B. <u>PROCEDURE</u>:

1. Immediately initiate a call to account for all personnel on the fireground. (PAR)

2. Always assume the firefighter is lost in the hazard zone until proven otherwise.

3. Immediately send fresh rescue crews to the last reported work area of the missing firefighter.

4. Immediately call for additional resources, including a medical component.

5. The location and rescue of the missing firefighter must become the top priority at the fire.

V. Initial Rapid Intervention Crew (IRIC)

A. PURPOSE:

Whenever interior operations are initiated in an IDLH (Immediately Dangerous to Life and Health) atmosphere, an Initial Rapid Intervention Crew (IRIC) shall be established in conformance with 29 CFR 1910.134 to be immediately available to effect rescue of a lost, trapped, or injured member of the IDLH operations crew(s).

B. PROCEDURE:

1. The Initial Rapid Intervention Crew (IRIC) shall:

   a. Consist of at least two trained firefighters in full protective equipment including SCBAs. Minimum training should include Basic RIC Operations as approved by the Monterey County Fire Training officers Association.

   b. Have at least one member monitoring the firefighters within the IDLH atmosphere, maintaining constant awareness of the number and identity of the firefighters, their location and function. This IRIC member must be free from all other tasks or duties in order to account for, and if necessary, initiate a rescue of those firefighters operating in the IDLH atmosphere. This monitoring may be accomplished by either voice, visual or radio contact with those firefighters operating within the IDLH atmosphere.

   c. The other IRIC member may perform other tasks or responsibilities, such as: Incident Commander, pump operator, ventilation, accountability, etc., as long as any such work can be abandoned without placing any employee at additional risk if a rescue or other assistance is needed.

   d. Be immediately available at the incident and have radio communications capable of monitoring the assigned command and tactical frequencies.

   e. Be equipped with a RIC Bag, containing the following minimum tools and equipment (bag shall have "RIC" on side in minimum 4" height letters in contrasting color to aid in bag identification.):

      - Two (2) hand-held lights
      - Two (2) door wedges
      - Safety Line--100 feet of $^3/_8$ kernmatle or equivalent rope in a rope bag with a carabiner attached to each end.
      - Ten (10) foot loop of 1" or 2" nylon webbing--used for assisting in extrication and firefighter removal.
      - One (1) pair of wire cutters, capable of cutting 4 gauge wire
      - One (1) pair of trauma shears

f. Consider additional search and rescue equipment needs, such as:

- Thermal imaging camera
- Forcible entry tool(s)
- Airbags/cribbing
- Hydraulic rescue tool
- Chainsaw or rotary saw
- Additional safety line
- Chalk
- Ladder(s)
- Additional door wedges/latch covers

g. Have one extra complete SCBA, including mask. IRIC members shall be thoroughly familiar with and trained to operate the type/brand of SCBA used.

h. Have a backup/rescue hose line immediately available for deployment.

i. Be assigned by the Incident Commander.

j. Be under the immediate control and supervision of the Incident Commander, or if assigned, the Operations Section Chief.

k. Stage at the "point of entry" unless otherwise assigned. For high-rise incidents, the IRIC should stage at the designated staging area below the fire floor.

C. DEPLOYMENT:

1. Upon activation of the "**Emergency Traffic**" signal, the Incident Commander (or Operations Chief if assigned) shall deploy the IRIC to the last known location of the distressed firefighter(s).

2. The IRIC will proceed to the assigned "point of entry" and utilize either the attack hose line or a safety line to establish a positive physical connection to the entry point.

3. The IRIC will then make entry and initiate a search and rescue with their RIC equipment.

4. The IRIC shall maintain positive physical connection to point of entry at all times.

5. The Incident Commander shall announce to all fireground resources that the IRIC has been deployed, including the tactical frequency they are assigned. IRIC operations will have priority on the assigned tactical and command frequencies.

6. The Incident Commander, or Operations Chief if assigned, should consider re-assignment of other resources to support the IRIC effort.

7. The incident Commander should consider the need for additional resources, including EMS, to support the IRIC operation and/or the shift in suppression strategy.

VI. Rapid Intervention Crew (RIC)

A. <u>PURPOSE</u>:

Whenever the Incident Commander deems it appropriate due to the complexity of the incident, such as large commercial, industrial, or high-rise occupancies, a Rapid Intervention Crew (RIC) shall be established to be immediately available to effect rescue of a lost, trapped, or injured member(s) of the interior operations crew(s). The RIC is intended to replace IRIC with additional dedicated personnel for larger buildings and more complex incidents, and also meet the "two in/two out" requirements of 29 CFR 1910.134 and NFPA 1500, Standards on Fire Department Occupational Safety and Health Program.

B. <u>PROCEDURE</u>:

1. The Rapid Intervention Crew (RIC) shall:

   a. Consist of at least four trained firefighters in full protective equipment including SCBAs, under the supervision of a Company Officer. The RIC <u>may</u> include personnel previously assigned to the IRIC at the discretion of the Incident Commander. Minimum training should include Basic RIC Operations as approved by the Monterey County Fire Training officers Association.

   b. Have at least two members monitoring the firefighters within the IDLH atmosphere, maintaining constant awareness of the number and identity of the firefighters, their location and function**.** These RIC members must be free from all other tasks or duties in order to account for, and if necessary, initiate a rescue of those firefighters operating in the IDLH atmosphere. This monitoring may be accomplished by either voice, visual or radio contact with those firefighters operating within the IDLH atmosphere.

   c. The other RIC member*s* may perform other tasks directly related to RIC, such as 1) assessing alternate access/egress points, 2) securing utilities, 3) firefighter accountability, etc., so long as they are immediately available to assist the other RIC members if necessary to enter the IDLH atmosphere to search for or rescue a lost or injured fire fighter.

   d. Be immediately available at the incident and have radio communications capable of monitoring the assigned command and tactical frequencies.

e. Be equipped with at least one RIC Bag, containing the following minimum tools and equipment (bag shall have "RIC" on side in minimum 4" height letters in contrasting color to aid in bag identification.):

- Two (2) hand-held lights
- Two (2) door wedges
- Safety Line consisting of a minimum of 100 feet of $^3/_8$ kernmantle or equivalent rope in a rope bag with a carabiner attached to each end.
- Ten (10) foot loop of 1" or 2" nylon webbing to assist in extrication and firefighter removal.
- One (1) pair of wire cutters, capable of cutting 4 gauge wire
- One (1) pair of trauma shears

f. Consider additional search and rescue equipment needs, such as:

- Thermal imaging camera
- Forcible entry tool(s)
- Airbags/cribbing
- Hydraulic rescue tool
- Chainsaw or rotary saw
- Additional safety line
- Chalk
- Ladder(s)
- Additional door wedges/latch covers

g. Have at least one extra complete SCBA, including mask. RIC members shall be thoroughly familiar with and trained to operate the type/brand of SCBA used.

h. Have an appropriate backup/rescue hose line immediately available for deployment.

i. Be assigned by the Incident Commander.

j. Be under the immediate control and supervision of the Incident Commander, or if assigned, the Operations Section Chief.

k. Stage at the " point of entry" unless otherwise assigned. For high-rise incidents, the RIC should stage at the designated staging area below the fire floor.

C. DEPLOYMENT PROCEDURE:

1. Upon activation of the "**Emergency Traffic**" signal, the Incident Commander (or Operations Chief if assigned) shall deploy the RIC to the last known location of the distressed firefighter(s).

2. The RIC will proceed to the assigned "point of entry" and utilize either the attack hose line or a safety line to establish a positive physical connection to the entry point.

3. The RIC will then make entry and initiate a search and rescue with their RIC equipment.

4. The RIC shall maintain positive physical connection to point of entry at all times.

5. The RIC Leader shall be in command of any search/rescue operation.

6. The Incident Commander will announce to all fireground resources that the RIC has been deployed, and the tactical frequency they are assigned. RIC operations will have priority on the assigned tactical and command frequencies.

7. The Incident Commander, or Operations Chief if assigned, should consider re-assignment of other resources to support the RIC effort.

8. The incident Commander should consider the need for additional resources, including EMS, to support the RIC operation and/or the shift in suppression strategy.

VI.   SCBA Rope Bags

A.   PURPOSE

In an effort to improve the overall effectiveness of our fire ground operations and enhance the safety of all fire ground personnel, the Monterey County Fire Chiefs have adopted a standard for SCBA Rope Drop Bags.

B. PROCEDURE

The SCBA Rope Drop Bag is a lightweight, waterproof bag carrying 100 ft. of 7mm Nylon rope (2300 lbs. Tensile Strength). It has a Carson Trigger Lock attached to both ends of the rope. The SCBA shall have a 2" Key ring to attach the bag. The SCBA Rope Drop Bag weighs approximately 3/5 lbs.

Each SCBA unit will have a Rope Drop Bag attached to it, uses include:
- o   Hoisting hose lines and equipment
- o   Tying off portable monitor
- o   Rescue throw bag

It is the responsibility of the crewmember assigned the SCBA Rope Drop Bag to ensure its readiness, and place it in service ready for use. To clean, use warm water, no soap, air dry.

WARNING: The SCBA Rope Drop Bags are not intended to be used as an emergency decent device.