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TRAINING BULLETIN NO. 39

LESSONS LEARNED 1979 THROUGH 1981

The following is a summary of some of the more important "Lessons Learned" from 1979 through 1981.

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1. Helispots are sometimes not being wet down soon enough or well enough. The use of a wagon battery has been recommended for a quick, thorough application of water. However, members should use caution to prevent a muddy situation.
2. Problems have been encountered with UHF radios in hilly areas. You may have to change locations to get through or relay messages. Portable repeaters should alleviate some of these problems when they become operational.
3. When field officers are communicating requests for help, they should remember that the IC, and the people responding to assist may not have the same perspective of the fire or possibly of the area involved as they do. Directions should be clear and concise. Use streets, cadastrals or compass point where appropriate or helpful.
4. More in-depth training of the support functions of the ICS Brush Procedure is needed.
5. During critical periods of firefighting, resources should be shared with other strike teams or divisions. This is particularly important when attempting to keep ahead of a fast-moving brush fire it is not necessary or mandatory to stick to the concept of 5-company strike teams. On some occasions, strike team leaders have been unwilling to release uncommitted companies even though they were not needed in their sector. Reassignment of resources must be coordinated through the command post and all affected positions notified.
6. In some instances relief of companies should be made on the fire lines or at a convenient location in a division or sector. This would eliminate confusion in the staging area where feeding and refueling of companies may be taking place simultaneously with fire assignments.

7. Police should be notified of the direction of fire travel so they can notify homeowners of approaching fire. This would relieve fire personnel of this task and allow them to concentrate on fire suppression activities. Evacuation is a police responsibility, often based on information received from fire personnel.

8. Strike teams must "knock down, pickup and move on" leaving a single engine company or a 2-man patrol with the responsibility for fire watch.

9. Large fires may require more than one staging area. Additionally, a change in the location of the command post may be necessary due to poor radio reception or other unforeseen problems. Careful initial selection may alleviate the need for this change.

10. Early dispatch of staff personnel to build logistics and staff support in the IC System is important to successful operations.

11. Reconnaissance and familiarity with the geography and fire history of the area as well as the fire's potential are important to proper resource deployment.

Lessons learned from problems at "Structure Fires".

1. Hotel Fire - 1979

Due to heavy radio traffic on the fire ground channel, R/A's were communicating with each other on the R/A frequency and requesting additional ambulances on their own instead of through the IC. This caused OCD to verify with the IC the request for additional resources which were subsequently cancelled by the IC. The importance of proper procedures is again stressed.

2. Five-Story Office Building

The following is a summary of the problems encountered:

a. Taking 1-1/2" hose line up aerial ladder while rescue of occupants was still taking place.

b. Companies failed to shut off utilities soon enough causing a massive salvage problem (broken water line).

c. Toilet drains were used for water removal - drains plugged up due to debris. Plans and action are needed to prevent this.

d. B/A's shall be worn during overhaul until air samples can be taken to determine if it is safe to work without B/A's. Toxic gases from plastics and residual carbon monoxide mandates this practice. Thorough ventilation is essential. Several firefighters were transported to hospitals because of dizziness, nausea, etc.

3. Commercial Building

At this incident, a two-story, 100' x 100', vacant building heavy streams were needed immediately. Command officers should anticipate needs for water and request companies such as TF-17 with large hose and large pumps to supplement the supply early in the fire.

4. Five-Story Office Building

During firefighting operations approximately 20 offices had to be opened to effect cross ventilation. Many firefighters were unaware that rooms could be entered by cutting drywall adjacent to the office door. Numerous expensive doors were damaged because of this lack of knowledge of forcible entry procedures and building construction. Additionally, the need to open walls up to the ceiling around duct work was pointed out.

5. Tanker Fire on Freeway

During this fire, civilian personnel of Cal-Trans were asked to shut off the electrical power to a pumping station. They quickly responded and said the job had been done. Later on in the incident it was determined that the pumps had not been shut down and were responsible for ignition of gasoline vapors. The power was subsequently cut by DWP personnel. It should be standard procedure to double check on actions taken by non-fire personnel and not place them in a hazardous location without protection.

When fighting fires on freeways where bridges are involved, consideration should be given to the possibility of pipelines carrying flammables being built into the bridge structure. High pressure gasoline, natural gas, and crude oil pipelines run through various parts of the City and pass over freeways in some areas. The Mobile Lab carries maps of all pipelines and drainage maps of the entire City. The request for the Mobile Lab should be initiated when this type of problem is suspected.

6. Hotel Fire

At a major emergency fire in a four-story hotel, the fireground channel was changed during the fire causing a major communication problem. It has been suggested that a fireground channel change should be announced on the P.A. system as well as the radio.

7. High Rise Fire

At a fire in a 17-story high rise building, a Captain and one firefighter, along with the building manager took an elevator to the fire floor (5th floor), even though there was light smoke showing upon arrival, when the elevator doors opened, heat and smoke entered. The firefighters forced the doors closed, but were trapped in the elevator for 10-15 minutes. They were forced to buddy breathe with the civilian to supply him with air. Several lessons can be learned from the incident:

- a. Don't rely on civilian information to be correct and refrain from taking them with an attack team because their lack of protection can compound the problem.
- b. Don't rely on elevators for access, particularly if smoke is showing and the fire is on lower floors.
- c. Elevators are not to be used until determined to be safe. If elevators must be used, always stop on lower floors to check on progress and then stop two floors below the fire to assess the floor for staging. Continue on to fire floor via stairwell.
- d. Always inform the IC of attack plans. In this case a Captain and one firefighter took the elevator to investigate and three other company members took the stairwell to attack the fire. The IC thought the whole company was in the elevator, when in reality they were working on the fire floor. This caused confusion and concern for three unaccounted for firefighters.

8. Apartment House

Recently a small fire in the kitchen of one unit in a three-story apartment house was extinguished by one task force. The fire had started from an overheated motor in a stove vent. One hour later, fire companies were called back to the scene and found fire in the walls on all floors. Obviously, inadequate overhaul procedures had been followed, allowing the fire to spread through the building.

9. Storage Yard

At a fire in a large open storage yard, a single engine company laid a long suction consisting of two 2-1/2" lines from a 4-way valve with the thought of supplying their wagon battery. Additionally, a 2-1/2" protection line was also put in service. The supply proved to be inadequate which caused firefighting problem. Company Commanders must understand limitations of long suctions and water supplies. When necessary to use long suctions, request incoming companies to pump their lines and notify the IC of the condition as soon as possible.

10. Apartment House

At a recent fire, a section of 1-1/2" hose became wedged under a Ponet door prior to being loaded. This resulted in a restriction in the water flow and an ineffective hose stream. Subsequently, the door had to be removed, which took valuable resources away from actual fire attack.

11. Commercial Building

At a fire in a large industrial occupancy (150' x 250') two firefighters operating a wagon battery were hospitalized because of exposure to toxic gases. This incident emphasizes the need for B/A for anyone operating in smoky conditions, regardless of their proximity to the structure. The wearing of B/A's would have obviously prevented this problem.

12. High Rise Fire

At a fire in a 43-story office building, the first in company made an investigation and notified the IC of light smoke on the 10th floor with no visible fire. The IC then called for two additional task forces and two additional engine companies. The fire attack team then reported a "burnout" and called a knockdown. The IC returned the additional companies and held the original assignment.

Sometime later, more fire was reported in another part of the hallway causing the IC to again ask for more companies. The original "knockdown" call caused the IC system to be relaxed to a point where it was difficult to reinstate the command functions, thus causing considerable confusion. A more thorough investigation by the attack team and the holding of additional companies in their IC positions until positive verification of the "knockdown" would have prevented this problem.

13. Commercial

At a fire in a two-story building, the IC ordered all personnel off the roof because of a slippery condition that was considered hazardous (rain slick asbestos roof shingles). The officers on the roof assumed the order was given due to imminent danger of collapse and ordered swift evaluation of firefighting personnel. Subsequently, a firefighter fell from the roof incurring injuries. Had the order to abandon the roof been clarified "because of slippery conditions" this accident might have been prevented.

14. Multi-Casualty Incident

At an incident involving a bus accident with multiple injuries, many important issues were raised concerning EMS procedures at large scale emergencies. The following are problems that must be addressed in future training with R/A personnel:

- a. The first in ambulance must request sufficient resources as early as possible (both EMS and fire suppression). EMS personnel have tendency to under-request resources at large scale incidents.
- b. H.E.A.R. radios must be checked to insure their operating capabilities on a daily basis.
- c. All rescue ambulances that are transporting patients shall do so under the direction of the ambulance control officer.
- d. Staging must be set up early, in the incident. It is vitally important that ambulances be as close as possible to the incident, without impeding traffic flow. Members must be close to radios so as to be able to secure apparatus and transport at once.

- e. When it is determined that a large scale incident is in progress that involves EMS personnel, they must be directed to switch to either, the Division fireground channel or to a designated operating frequency. This will prevent overloading of the already busy R/A frequency.
- f. EMS personnel shall not request to be dispatched to an incident. This practice results in unnecessary radio traffic and compounds the communication problem.

The following is a compilation of general comments concerning firefighting and command functions in general:

1. At several fires the importance of early notification of the railroad when lines are laid across tracks has been stressed (in one instance a train was stopped one block away).
2. The value of requesting the "closest engine companies" has been mentioned several times. Officers often request task forces when engine companies would suffice.
3. The importance of communications has been stressed over and over. At several fires, problems have been encountered with handi-talkies assigned to Chief Officers being on the wrong frequency. It has been suggested that radios be checked for operation of tire ground frequency at the command post before going to work on the fire.
4. The importance of prefire planning has been mentioned after many fires, particularly in old buildings of questionable construction of roofs, facias and multiple ceilings. The occurrence of roof collapse has been all too frequent and points out the importance of preplanning and training in these areas.
5. The importance of pulling ceilings in an attic fire is continually being mentioned. Obviously, this is not being done properly in all cases. The importance of this basic firefighting tactic should be stressed by all field officers in their training of members.
6. At several incidents the need to take a 1-1/2" protection line to the roof was emphasized. This line was badly needed to protect the ventilation team from heat and direct smoke and flame away from them. This line is strictly for protection and should not be used to attack the fire.

7. Many officers have pointed out that ICS terminology could have been used to advantage earlier in the sequence of events at many major fires.
8. A need to call enough companies early in the incident and not "piece meal" has been mentioned repeatedly.
9. Updated status reports to the IC are very important, and are not being given often enough or not at all.
10. Officers must stress the importance of keeping task forces intact when possible. Task forces should complete their assignment and then report status to the IC.
11. The value of 3-1/2" supply lines being carried by single engine companies was mentioned several times.
12. Field officers are reminded to ask for P.D. assistance early at major emergencies, possibly by the first in officer. Many problems can be prevented by initial dispatch of P.D. units.
13. Members are reminded to back up 2-1/2" handlines with 1-1/2" protection lines.
14. Engineers are having problems in two areas:
 - a. Unnecessarily blocking streets.
 - b. Not notifying the IC of water problems soon enough.
15. It has been pointed out that the use of a lobby control officer (mandatory in high rise ICS) or similar control point such as staging, can be beneficial any time large numbers of resources are committed to an incident.
16. When companies from more than one Division are sent to an incident they should be advised of OCD and fireground channels being used. If company, commanders are unsure, they should request clarification from OCD.
17. On freeway incidents where traffic congestion can cause delays, a helicopter can provide assistance on best response routes. Ask for them early!

The preceding incidents are some of the problems encountered by field personnel. Obviously, the ongoing training of personnel must be reemphasized and the importance of practicing established firefighting procedures and continual prefire planning is of utmost importance.