

Denver Fire Department



Post Incident Analysis

18-01

Single Family Residential Structure Fire

03MAR2018

3720 E. Martin Luther King Blvd.

Post Incident Analysis Description

The main purpose of a Post Incident Analysis (PIA) is learning. When an incident occurs, regardless of type or outcome, a PIA may be initiated. Facts are gathered through dispatch transcripts, FD707 written reports, available video, and individual interviews. Every effort is made to ensure the analysis is accurate. The PIA committee, composed of members of the Denver Fire Department representing ranks from Firefighter to Assistant Chief, will review all information and begin building the PIA. The report will include background information, incident overview, a final analysis, and recommendations. The success of the PIA Team is dependent upon the cooperation of all members. The process will provide an enhanced method to disseminate critical lessons learned during an incident, thus allowing us to learn from actions taken and improve our current strategy and tactics.

Fraternally,

The Denver Fire Department PIA Committee

General Incident Overview

- Report of a single-family structure fire at 3720 E. Martin Luther King Jr. Blvd.
- Dispatch aired the long tone and dispatched the following units: Engine 9, Engine 15, Engine 26, Tower 15, Tower 9, Chief 4, Chief 5, Truck 26 (RIT), Ops 2, and Rescue 2.
- Engine 10 became available from a medical call and notified dispatch, they were added.
- Engine 10 was first on scene and reports heavy fire and smoke from delta side basement.
- Engine 10 went in off the tank and asked for the second due engine to complete the water supply.
- Chief 5 arrived on scene and assumed command of the scene.
- Chief 5 confirmed with Engine 10 that all occupants were out of the house.
- Engine 10 stretched a 200' 1 3/4" cross-lay into the front of the house.
- Rescue 2 arrived on scene and was assigned primary search.
- Engine 26 caught the hydrant at 31st and Richard Allen Court forward layed with 5-inch hose and nosed to Engine 10.
- Tower 15 arrived on scene and was assigned to assist with primary search.
- R-02 reports that access to the basement is difficult (due to hoarding conditions).
- Chief 4 states there is alley access and prompted for a rig to the alley.
- Engine 9 pulled the 300' 1 3/4" from the rear of Engine 10 to the Charlie side.
- Command assigned Engine 9 to hit the basement fire from the outside.
- Engine 10 A and C requested more pressure on their line, then reported they lost pressure.
- Engine 15 reported that they lost water pressure in the basement as well.
- Safety reported heavy fire pushing out of the window and wanted Truck 26 to hit it with a hose line from outside the structure.
- Command issued the order to back out and dispatch asked if he wanted the tone.
- Dispatch transmitted the backout order but utilized the medical tone.
- PAR was completed and dispatch stated that the scene had just passed the 15 minute mark.
- Crews hit the fire from the outside so interior crews can re-enter the structure.
- Engine 10 and Engine 26 re-entered the structure on the Charlie side.
- It was reported that hose lines lost pressure again and the engine crews backed out.
- Engine 9 entered the basement and reported conditions were hot and zero visibility and that the door to the fire room was chained and locked with a padlock.
- Crews were able to punch holes in the door to apply water to fire room.
- Engine 15 reported that they were getting a knock on the fire.
- Engine 15 discovered there was fire in the interior walls.
- Truck 26 A reports that there is fire in a new room on the A/D corner.
- Command calls for the 2nd backout tone.
- Second PAR is completed and defensive operations are resumed to extinguish the fire.
- Chief 4 reports fire through the floor on C/D corner.
- Tower 15 A cautions the crews stating floor in C/D side is spongy.
- At one hour, the scene turns into cautious recon and extinguishment of hot spots until the scene is deemed safe.

Site Review



On March 3, 2018 at approximately 14:41 Denver Fire Department was dispatched to a single-family structure fire, map page H 23, at 3720 E. Martin Luther King Jr. Blvd. The structure was a 751 square foot, type III construction, single family residence with a basement. The house was built in 1951 and was located upon a 5,250 square foot lot that had an alley in the rear. It is important to note that this section of Martin Luther King Blvd. is a divided street that has a substantial median between the east and west bound lanes. The initial response included Engine 10, Engine 26, Engine 9, Engine 15, Truck 26 (RIT), Tower 15, Tower 9, Rescue 2, Chief 5, Chief 4, and OPS 2; companies were assigned to TAC 4. Engine 10 became available from an EMS call and was the first unit to arrive on scene. Engine 10 reported smoke and fire from the delta side basement. Engine 10 also communicated that, due to the lack of hydrants in the area, they would go in off the tank and requested the second engine to complete the water supply. Crews encountered hoarding conditions throughout the house, as well as a door locked with a padlock at the entrance to the fire room. The fire was extinguished utilizing defensive and transitional strategies and was brought under control with companies returning to service at approximately 16:25.

911 Call

Call Taker: Transferring 3720 MLK Boulevard, caller go ahead.

Dispatcher: Hi, this is the fire department, what's going on over there?

Caller: Hi, this is Paramedic Damion English. Uh, my next door neighbor's house is on fire.

Dispatcher: Ok

Caller: It look like it's coming from the basement.

Dispatcher: Can you tell if everybody's out?

Caller: It looks like everyone is out.

Dispatcher: Ok, we're on the way, um, 3720 East MLK.

Caller: Sounds good.

Dispatcher: Thank you very much, bye-bye

Operations

Dispatcher: All units on the air, stand by for a structure fire. [Long ring]

Dispatcher: Attention: map page Hotel 25. Report of a single-family structure fire, 3720 East MLK Boulevard for Engine 9, Engine 15, Engine 26, Tower 15, Tower 9, Chief 4, Chief 5, Truck 26 is the RIT. Ops 2 and Rescue 2 operate on Tac 4.

E10: (in background) (with sirens) Dispatch, Engine 10's clear we're heading out.

Dispatcher: Copy that Engine 10, I'll put you on it.

Dispatch: (Map page repeated twice more) Time is 1442.

Engine 10: All units responding, we have smoke in the air.

Ops 2: Fire dispatch, from Ops 2

Dispatcher: Go ahead Ops 2.

Ops 2: Yeah, what channel's that going to?

Dispatcher: That's, uh, Channel 4.

Ops 2: Copy, thanks

E10: Engine 10's on scene. I've got a one story, single family residence with heavy fire and smoke pushing from the...uh, looks like Delta corner, basement, uh...we don't have any plug that's close to us. We're going off the tank. First due, or, second due engine, there's one off of Richard Allen Court in front of the church, on MLK.

Engine 10 went in off the tank because laying in would have required them to lay across 4 lanes of traffic. It should be noted that Martin Luther King Blvd. is a major thoroughfare with a substantial median. In addition, the Junior member of Engine 10 would have had to cross four lanes of traffic while trying to unkink the supply line. Denver Police were not on scene yet, so Engine 10 wouldn't have had hose protection. Engine 10 spotted in front of the house facing east. The crew of Engine 10 deployed a 200' 1 3/4" cross lay.

D05: Chief 4's on scene, 3720 East, Correction, Chief 5's on scene, 3720 East MLK. Chief 5 will be MLK Command. Heavy fire showing from the Delta corner.

Command: Engine 10 from command.

E10: Ten.

Command: Could you confirm that all parties are out?

E10: Confirm.

Command: Copy.

R2: Rescue 2's on scene.

Command: Rescue 2, complete a primary search to verify everybody's out.

All four members of Rescue 2 assisted with primary search.

R2: Copy.

T26: And, Engine 26 and Truck 26

Command: Engine 26, make sure Engine 10 gets a water supply.

E26: Engine 26, copy, water supply.

TR15: 15's a pair on scene.

Operations

E26: Engine 26 is gonna be grabbing a plug of 31st and Richard Allen Court, laying in to Engine 10.

Engine 26 is the 5-inch hose company for District 5. Engine 26 forward layed 5-inch hose from the hydrant at 31st and Richard Allen Court and nose-in to Engine 10. This utilized approximately 600' of 5-inch hose.

Command: Copy that Engine 26, laying in.

Chief 4: Chief 4 on scene.

T26: Chief 5, Truck 26, do you want us to remain RIT?

Command: That's affirm. This is an active fire. Remain RIT at the front of the building.

T26: Copy that.

E09: And Engine 9's on scene. Engine 15, what plug did you hit? We'll help you out.

E15: Engine 15, we're catching the plug, uh... we are westbound MLK, right in front of the address.

Command: Engine 9 from command, just level 1 stage right now.

E09: Engine 15, I see the plug here. We're actually on that plug. We'll, uh, assist your engine.

Engine 9 was ordered to level 1 stage. Engine 15 and Engine 9 ended up on the same plug which was located on the north side of MLK Blvd. in the westbound lanes. There is a large median between the east and west bound lanes of MLK. Engine 15 was west of Engine 9 so Engine 9 decided to hook up 5 inch to the hydrant and hand stretch supply lines to Engine 15. When Engine 9 B went to make his connections to the hydrant, he saw that Engine 15 B brought one 3" line to Engine 10. This line was coming off Engine 9's discharge and running to the siamese on the officer's side of Engine 10. Also, Engine 26 was running an additional two 3" lines to Engine 10. At this point all supply lines are dry. Engine 15 did not secure a water supply throughout the incident.

TR15: Command from Tower 15, do you want us to go in and assist on the search?

Command: That's affirmative Engine 15, correction Truck 15.

TR09: (sirens) Command from Tower 9, we're about a minute out, do you have an assignment for us?

Command: Last unit calling, repeat.

TR09: (sirens) Command from Tower 9, we're about a minute out, do you have an assignment for us?

Command: Tower 9, level 1 staging right now, we've got plenty units on scene.

TR09: Tower 9, copies, level 1 stage.

R2A: Command, Rescue 2.

Command: Command by.

R2A: Yeah Chief, we're having trouble getting to the basement. We're probably gonna need a line stretched around to that Delta side, start getting, uh, some water down to the basement.

Operations

Engine 10 and Rescue 2 entered through the Alpha side and encountered numerous items blocking access to the basement. Rescue 2 and Engine 10 A, C, and D moved items prior advancing the primary attack line to the basement.

Command: Copy that, break, Engine 26, can you pull another line off Engine 10?

Command requested Engine 26 to pull another line from Engine 10. Engine 26 was still in the process of laying in 5-inch hose, Engine 15 pulled the second line off Engine 10 which was the 200' 1 3/4" rear pre-connect. The water-supply has not been completed at this time. Engine 15 started going into the alpha side and then backed out and went to the rear of the structure based on the report that a hose-line was needed on the Charlie side.

Chief 4: Command from Charlie

Charlie division has not been created by command. Chief 4 begins to refer to himself as Charlie.

Command: Command standing by

Chief 4: Alley's open, we can get a rig down here.

This was the first prompt that an engine is needed in the alley.

Ops2: (channel 1) Fire dispatch, Ops2 on 1

Dispatch: (channel 1) Go ahead Ops2.

Ops2: (channel 1): Yeah, can you tell which line uh, or, which radio keeps keying up on that fire?

Ops2: (channel 1): Fire dispatch, Ops2 on 1.

TR15A: Engine 15 from Tower 15, we're at the back door waiting for your line.

Tower 15 A & B went to the rear of the structure, shut-off power at the meter, waited for a hose line, and forced the back door where the basement stairs were located.

Dispatch: (channel 1): Go ahead Ops 2.

Engine 26A: Engine 26 Delta, charge the 5 inch, charge the 5 inch.

Dispatch: (channel 1) Stand by Ops2, we're checking.

R2A: [on air] Command, Rescue 2.

Dispatch: (channel 1) Ops 2, we think it's 26 Delta

Ops2: (channel 1) Okay, copy, thanks.

Dispatch: (channel 1) No problem, 1450.

Operations

Command: Command by

Unknown: [on air, weak transmission] Yeah Chief, pretty charged in here [becomes indiscernible]

Chief 4: Command from Charlie side. We need a line back on the Charlie side. Alley is open if an engine company want to bring something down this way.

This is the second prompt that an engine is needed in the alley.

E09A: Engine 9, we'll bring that line over to the Charlie side.

Command: Copy that

Command: Engine 9, do you have a water supply?

E09A: Yeah, we're assisting Engine 15 at the water supply. We pulled a third line off of Engine 10. We've got the line going right to the...right to the Charlie side right now.

Engine 9 pulls a third line which is a 300' 1 3/4" pre-connect off Engine 10 which still does not have a charged water supply.

Command: Copy that. When you...when you get in position, uh, hit that fire. Hit the basement fire. And Engine 10, be advised, we're gonna hit it from the outside.

E26A: Command, Engine 26, we have 5-inch supplying 2-3 inch into Engine 10. Waiting for another assignment.

This is the first announcement that the water supply has been established for Engine 10 which is being supplied by both Engine 26 and Engine 9.

Operations



This is Engine 10 in front of the address of the fire. As can be seen, several lines are in service as the Engineer from Engine 26 is bringing the second supply line to the Officer side. The other supply line that is dry was from Engine 9. The line on the Engineer side is charged at this time.

E10A: [on air] we have a hose line in the basement.

Command: Engine 10...Rescue 2 from Command. Did they make the basement?

R2A: [on air] we have a line in the basement.

Command: Copy that. All unit be advised, Engine 10 is in the basement. Do not hit it from the outside.

Chief 4: Command Truck fifteen...or, uh...Command from Charlie side, Truck 15 is making entry from the Charlie side.

Command: Command copy and Charlie side, just to verify, nobody hit that from the outside.

Chief 4: Copy do not hit from the outside.

E26: Command, Engine 26, we want to assist Engine 15 getting this line into the Delta side.

Command: Keep that backup line at the back door, just keep that backup line at the back door.

E09A: [on air] Engine 9 is [becomes indiscernible]

Dispatch: Command from dispatch

Operations

Command: Truck 15 from Command

TR15A: [on air] Standing by

Command: Can you give me an update on your position and status?

TR15A: [on air] Tower 15 is, uh, made entry Charlie side, with Engine 15's line. We're sitting at the top of the stairs, trying to make out way to the basement.

T26A: Command Truck 26

Command: Copy that, it looks like, uh, the smoke is being knocked down. It looks like the fire's being knocked.

TR26A: Command, Truck 26

Unknown: [on air] [feedback] Yeah, copy that Chief, conditions in here high heat, heavy smoke.

Chief 4: Command from Charlie side it's just we have two doors open, one on the backside where crews are entering.

E10A: [on air] Command from Engine 10.

Command: Command standing by.

E10A: [on air] I need a thermal imager in the basement. I'm here with Rescue 2. We don't have a tic and we're trying to find this basement seat of the fire.

Command: Copy, you need a thermal imager. I copy. Tower 15, do you have a thermal imager?

TR15A: [on air] [feedback] That's affirmative

E10C: [on air] Engine 10 Bravo, we need more pressure on the line

E10A: [on air] Engine 10, I need more pressure on this line!

Unknown: [on air, weak] Engine 10 Bravo we need more on this line.

Command: Ops2 is going to bring a thermal imager to the Delta side.

Command: Correction, Charlie side.

E10A: Engine 10, we have lost pressure to our line.

Both Engine 10 and Engine 15 reported losing pressure in their lines in an alternating fashion. Engine 10 was in a reserve apparatus (E-73) which is equipped with electronic gate valves. At this incident it was reported the initial attack line that E-10 pulled would shut down at 130 psi. even though the valve itself indicated "throttled".

Command: Charlie side from command

Chief 4: Charlie

Command: I think Engine 10 just said they lost their pressure; is that back up line in position?

Chief 4: Back up line is in position

Chief 4: Engine 9, Engine 9's on the line.

T26A: Command, Truck 26.

Command: Command by

T26A: Confirmation with the home owner, no one in the basement, but, we need a line on this delta side. The basement egress, we can see fire. If we can get a line we can shoot from here.

Operations

At this time in the incident Truck 26 was assigned R.I.T. and was confirmed R.I.T. on arrival by command.

Command: Stand by, I don't want to hit it while people are down in the basement. Standby.

Command: Truck 26, where do you see that fire? What corner?

T26A: We're on the Delta side of the structure.

Ops2: Command from Safety

Command: Command by

Safety: You do have a handline coming in from the Charlie side. We'll just have Truck 26 standing by.

Safety continually updates command on task related issues. Command decided to keep companies as a single-resource.

Command: That's affirm.

Air-light: (channel 1) Dispatch from Air-light

Dispatch: (channel 1) Go ahead Air-light

Air-light: (channel 1) Yeah, can you go ahead and drop me on that call at 3720 MLK Boulevard for that structure fire?

Dispatcher: (channel 1) Copy that Air-light. We'll drop you on it. They're operating on Tac 4.

Air-light: (channel 1) Copy, Tac 4, thanks.

Dispatcher: (channel 1) Thank you; time is 14:57.

E15(?): [on air] [weak] We don't have any water either

TR15A: [on air] Command, Tower 15

Air-light: Dispatch from Air-light

Command: Tower 15

Safety: Command from Safety Urgent Traffic

Command: Safety

Safety: Yeah, I got Truck 26 right here. We got some pretty good fire pushing out of this, uh, Charlie/Delta corner where we can hit it real quick.

The Safety Officer re-assigns the R.I.T. company to fire suppression duties.

Command: Copy, let's back everybody out of the basement real quick.

Command: Engine 10 from Command, can you back out?

E09A: [on air] We're going to back them out right now Chief.

Command: All units, back out of the basement. We're gonna hit it from the outside.

Command: Rescue 2 from Command

Dispatch: Command from Dispatch; do you want a backout tone?

Command: Yeah, that's affirmative dispatch. Thank you.

Operations

Dispatch: [Medical tone] All units back out. All units back out of the residence. All units backing out.

Dispatch: [Medical tone] All units back out. All units back out.

Dispatch: [Medical tone] Again all units back out per command, all units back out.

Instead of the back-out tone, dispatch transmitted the medical tone. Also, only one rig sounded their air-horn to alert crews inside to exit the structure.

Command: Rescue 2 from Command.

R2A: [on air] [Vibralert] Rescue 2, we're exiting the basement

Command: Rescue 2, we're gonna hit this from the outside as soon as you give me the all clear signal.

R2A: [on air] We're exiting the basement now.

T26A: Command, Truck 26, we're getting a line on the Delta side. We need a PAR so RIT can check everybody's out.

Truck 26 is still the R.I.T. team while operating a hand-line on the exterior separated from their R.I.T. equipment.

Command: Engine 10 from Command, do you have a PAR?

Command: Engine 10 from Command

E10A: [on air] Engine 10.

Command: Engine 10, do you have PAR and have you backed out?

E10A: [on air] Command from Engine 10..[becomes broken with static]..member's name used.

Command: Last unit calling, repeat.

Dispatch: Command, that was Engine 10 we did not hear what they said.

TR09A: Command from Tower 9, Truck 26 is on the attack line, do you want Tower 9 to bump up to RIT?

Command: That's affirmative, thanks Tower 9.

TR9A: Okay, Tower 9's moving to RIT.

Safety: Command from Safety, we have a PAR from Rescue 2. Looking for 1 member from Engine 10.

Command: Copy that.

TR15A: Command from Tower 15, we have PAR.

R2B: Rescue 2 Alpha, Rescue 2 Bravo, with Charlie in the back [becomes broken]

E10A: 10 Charlie, 10 Charlie

R2A: Command, Rescue 2, PAR.

Safety: Command from Safety, I have that last member of Engine 10 with me. He's accounted for.

E10A: [on air] Copy, 10 has PAR.

Operations

Command: Command copy. Engine 10 has PAR. Break, Engine 15, do you have PAR?

E15A: Engine 15's PAR.

Command: Engine 26, do you have PAR?

E26A: [weak, with feedback] Engine 26, we have PAR.

Command: Last unit calling repeat.

E26A: [weak] Engine 26 PAR.

Safety: [PASS device in background] Command from Safety I got a PAR from Engine 9 and Engine 26. Truck 26, you gotta PAR?

T26A: [on air] Truck 26 PAR.

Safety: Command, did you copy that? 26's a pair, Engine 9 PAR also.

Command: Copy that. And Rescue 2, do you have PAR?

R2A: Rescue 2, PAR.

Command: Copy. Charlie side from Command.

Chief 4: Charlie

Command: As soon as we get a knock on this fire, we'll have another hose crew go in on the Charlie side, see if they can make the basement.



Crews applying water to the Delta/Charlie basement window.

Operations

Chief 4: Looks like we got pressure back to the hose lines, going through the Charlie side door.

Command: Copy that.

Dispatch: Dispatch to Command, copy that good PAR, and Command you are over 15 minutes on your scene.

Command: Copy that, that's Dispatch.

Chief 4: Command from Charlie side, Engine 15 is going in on the Charlie side through the door.

Command: Copy that, break, Truck 26 from Command

T26A: [on air] Go ahead

Command: Truck 26, did you get the main body of that fire knocked down?

T26A: Yeah, Engine 26 on the handline from the exterior gotta decent knock on it, but we're gonna have to take a look from the basement.

Command: Copy, we have crews going in the Charlie side now. Trying to make the basement again so don't hit it again.

T26A: Copy, hold exterior crews.

Safety: Charlie side from Safety

Safety: Hey, hold off those lines there, let us hit it one more time before we send guys in.

Unknown: [on air] [broken]...we got no pressure again

E10A(?): Charlie hose-line limp again, backing out, [becomes broken]

Safety: C side from Safety, all members are out?

E15A: [PASS Pre-alert] [on air] Negative, Engine 15's in the basement.

Safety: Engine 15, are you backing out?

Safety: Charlie side from Safety, is Engine 15 out?

Chief 4: They're coming out

Command: Charlie side, just verify when they are out.

Chief 4: Copy

Dispatch: Command, you want another back out tone to try and notify everybody?

Command: That's negative, thank you.

TR15A: Command from Tower 15

Command: Last unit calling?

TR15A: Command, this is Tower 15. We're right on the Alpha side. This front room is cleared of smoke pretty good. We were unable to complete primary search in these two front rooms. Did you want us to go ahead and finish that real quick?

Chief 4: Command, Engine 15 is out.

Command: Tower 15, stand by, break. Truck 26 you can go ahead hit that fire again.

T26A: [on air] Copy

Safety: Command from Safety, I copy that. All companies are out with the exception of Engine 26. Hitting it from the Delta side. That the only company inside the structure now.

Command: Safety, can you confirm? They're inside the house?

Operations

Safety: They're right inside that basement window. It's an actual full basement window, where they can step right inside, hit it, then we can send an engine company in from the Charlie side.

Command: Copy that. Just let me know when they got it done. When they got it knocked.

Safety: Copy that. I just talked to Charlie side. Engine 9 heading in the basement with Truck 26 pulling out.

Command: Safety, I copy Engine 9 is gonna take that attack line now...in the Delta side?

Safety: That's affirmative from Safety. Let me work with Charlie side. Get them a backup line.

Command: Copy

Safety: Charlie side from Safety, can we get a backup line to Engine 9 also?

Safety: Charlie side from Safety, can you have a company come with a backup line to follow Engine 9?

Chief 4: Yeah, I need one.

Command: Rescue 2 from Command

R2A: Standing by

Command: Were you able to complete much of a primary?

R2A: Negative, Chief.

Command: Copy, all parties are reported out.

R2A: Copy, and Chief, we're on the Alpha side.

Command: Copy

Chief 4: Command from Charlie

Command: Command by

Chief 4: Engine 26 is going to pull us a backup line to the Charlie side. I just need a company.

Command: Engine...15. Engine 15 back there with you Charlie?

E15A: Engine 15, we're headed back there now to pull...to have a backup line for 9's.

E09A: [weak, on air] Command, Engine 9 We found the fire. We're gonna need some bolt cutters down here, looks like we have some doors that are padlocked shut.

Command: Last unit calling, you were unreadable.

E09A: Engine 9.

Command: Safety from Command

Safety: Go ahead for Safety

Command: You have a visual on Engine 9? They doing alright?

Safety: Can you repeat Chief?

Command: I thought I heard a PASS device going off when Engine 9 was on the radio. Do you hear anything?

E09A: [broken; heavy static] ... Fire

Safety: Tower 9 from Safety, can you confirm Engine 9 is good downstairs with you?

T09A: Command from Tower 9, we're standing by out front as the RIT.

Command: Copy that Tower 9.

Safety: Command from Safety

Command: Command by

Operations

Safety: You got Engine 9, Tower 9 in the basement. They'll coordinate with Charlie side. You also got Engine 10 coordinating with the Charlie side.

Command: Tower 9 is the RIT out front. I think Truck 26 is in there, is that correct?

TR26A: Truck 26 is outside of the structure

E09A: [on air, weak transmission] Bolt cutters to the basement. Bolt cutters to the basement.

Command: Last unit, you were unreadable.

E15A: Command, Engine 15.

Command: Command standing by.

E15A: [on air] Engine 9 member just came out, stated they need bolt cutter down in the basement. Fire is behind a locked door with a bolt.

Command: Engine 15, can you repeat?

Chief 4: Need bolt cutters to the rear. Bolt cutters to the rear.

TR09A: Charlie side from Tower 9, bolt cutters are enroute.

Chief 4: Charlie side copy. Bolt cutters enroute.

Command: Tower 9 from Command

TR09A: Tower 9 standing by.

Command: Confirming, you're out front as RIT?

TR09A: That is affirmative. Tower 9 is out front as the RIT.

Command: Engine 9 from Command.

TR09A: Command from Tower 9 Engine 9 was in the basement as the attack line.

Command: Their radio was unreadable. Their radio traffic is unreadable.

Command: Charlie side from Command. Can you give me an update? What's going on back there?

Chief 4: I got Engine 9 on the first line in there. Engine 26 is on the backup line.

Command: And they both went in the Delta side, correct?

Chief 4: Charlie, Charlie side.

Command: Copy that. Just let me know when it looks like we got this thing knocked.

Chief 4: Charlie side copies, I'll let you know. [vibralert in background] Engine 26 coming out. Engine 15, take that backup line.

E15A: [on air] Engine 15 copies, looks like we have a good knock on the fire at this time.

Command: Last unit calling you're unreadable.

Dispatch: Command Engine 15 said fire knocked.

Command: Copy that, thanks

R2A: Rescue 2 Bravo.

Safety: Command from Safety

Command: Command standing by

Safety: Yeah, Truck 26 on this Charlie/Delta corner says there's still fire in that room. That must be the room they can't get to.

Command: Yeah, I'm sure that's right. Can they hit it with a line again if we back everybody out again?

Operations

Safety: That's affirmative Chief. They got good eyes.

Command: Okay, standby. Don't hit it yet.

Chief 4: And Command from Charlie, Engine 15 took bolt cutters to get into a door there. I don't know if that's the same room we're looking at with the fire.

Command: Copy, I'm assuming it is. I'll give them a minute to see what they can do.

E15A: [on air] Engine 15, we got that door open. It appears the majority of the fire is knocked. We just need a thermal imager.

T26A: [on air] Copy, Truck 26 has a thermal imager from the exterior window.

Command: Unreadable radio traffic. Somebody needs a thermal imager.

T26A: [on air] Truck 26 has a thermal imager in exterior window.

Command: Safety, can you copy that radio traffic?

T26A: [on air] Truck 26 has a thermal imager, in the exterior window of that room.

T26A: Did you copy that?

R2A: Rescue 2 Bravo, what's your location?

Command: Engine 9 from Command.

E09A: [on air] Standing by.

Command: Engine 9, your radio is unreadable. Can you tell me if you've located the fire yet?

E09A: [on air] Command, that's affirmative.

Command: Copy, and, break, Truck 26 is somebody hitting that fire that you can see?

E09A: Hey, Command, Engine 9. I had to switch radios. My radio got waterlogged. We were hitting fire in the room that was bolted with a chain. We had to come out though because we were low on air. Engine 26 I believe took over that line. I let Safety and Charlie Command know.

Command: Command copy.

Chief 4: Command from Charlie side, right now we have Engine 15, Engine one-five on the primary line going to the basement from the Charlie side.

Command: Copy that. Are they the only crew in there right now?

Chief 4: Affirmative.

Dispatch: Command, 30 minutes on scene.

R2A: Command, Rescue 2.

Command: Command by.

R2A: Yeah, I'm trying to locate my Bravo member. He went around the back briefly and I haven't seen him.

R2B: This is Rescue 2 Bravo.

Command: Rescue 2 Bravo, what's your location?

T26A: Command, Command, Truck 26 on the Delta side. We have heavy fire from the Alpha/Delta corner. Different window well than that other engine company is in. We need another hose line for that right now.

R2B: [heavy static] [on air] Rescue 2 Bravo, helping with the hose line.

Operations

T26A: [on air] Truck 26 to Engine 15 or Engine 9 in the basement, we do have fire in the Delta/Alpha corner.

Command: Charlie side from Command, can you make sure there's a backup line. Is there a backup line in the basement?

Chief 4: That's a negative. Engine 15 was the only one there. Engine 15 is back out. Engine 15 is back out.

E15A: [on air] Engine 15 is backing out.

Dispatch: Command, you want the alert again?

Command: That's affirmative. Let's everybody back out and let's see if we can get a hit on this from the outside.

Dispatch: [Backout tone] All units, back out of the residence. All unit back out of the house. [Backout tones]

Safety: Charlie side from Safety. Let's get a PAR on your side. Have everybody remain on the Charlie side.

Chief 4: Copy that.

Safety: Command from Safety. I have a PAR from Truck 26. They're on the Delta side.

Command: Copy that and break. Engine 9 do you have PAR?

E09A: Engine 9 PAR.

Command: Engine 10, are you still outside? Do you have PAR?

E10A: 10 PAR.

Command: Truck 26 from Command. You gonna be able to hit this fire when Engine 15 gets out?

Command: Last unit calling?

T15A: Command, everybody's out. You can hit it.

E26A: [on air] We're hitting the fire right now.

Command: Copy, I think this basement is fully involved.

T26B: Command from Truck 26 Bravo.

Command: Command standing by.

T26B: I don't believe we have the gas shut off, it was not on the exterior.

Command: Copy that, break. Tower 15 from Command, can you double check if there's a meter.

TR15A: Copy

TR09B: Command, Tower 9 Bravo. I found the meter. I'm shutting it down.

Command: Copy that. That's outside the house?

TR09B: Affirm, on the Alpha side.

Command: Copy.

Safety: Command from Safety

Command: Command by.

Operations

Safety: Yeah, just to update you, Rescue 2 has a PAR. They're on the Bravo side. They're assigned to the Bravo side. Truck 26 is on the Delta side. Charlie side will give you his companies in a minute.

Command: Copy that.

Chief 4: Charlie side, I got a PAR Engine 9, Engine 10, Engine 26, Engine 15, Tower 15. All PAR.

Command: Copy that. All units have PAR.

TR09B: Command, gas is shut down.

Command: Last unit calling.

TR09B: Gas has been shut down, Tower 9 Bravo.

Command: Copy

Dispatch: Dispatch copies. All units PAR. Time is 1523.

Command: And, Truck 26, give me an update when you're hitting that fire.

T26A: [on air, weak] Heavy fire, Charlie/Delta side.

TR15A: Command, from Tower 5, that message from 26's, they got 2 lines hitting it from the outside, Delta side. We got 2 lines on the Charlie side also hitting fire.

Command: Copy that, are you hitting it through windows on the Charlie side?

TR15A: That's affirmative.

Command: Engine 10 from Command.

Chief 4: This is Charlie division.

TR15A: Tower 15 is with Engine 10 Chief, if you want me to relay a message.

Command: No that's okay, as long as they're outside the building.

Chief 4: Everybody's out Chief.

Chief 4: Command from Charlie side, we got water flowing from the outside on Charlie and Delta side.

Command: Copy

R2A: Command Rescue 2.

R2A: Command Rescue 2.

Command: Rescue 2.

R2A: Yeah, Chief, do you want a roof report?

Command: Yeah, that's affirmative, thanks.

R2A: Copy, we'll take a look.

Chief 4: Command from Charlie side.

Command: Command standing by.

Chief 4: Yeah, I got a report, fire coming through the floor on the first floor, on this Charlie/Delta side.

Command: Copy, is there a way to hit it from the back door?

Safety: Command from Safety

Command: Command by

Operations

Safety: Chief I recommend holding off on the Rescue 2 going to the roof. I can use them to go just basically, barely inside, this Alpha side. Get the hose line. They can contain from there, the Alpha side.

Command: Rescue 2 Command.

R2A: [on air] Standing by

Command: Did you copy? There's an attack line at the front door. Can you give me a report from inside the first floor?

R2A: [on air] Copy

Command: Dispatch from Command, can you give me a time stamp please?

Dispatch: Command, 1527, coming up on 45 minutes.

Command: Copy that

Chief 4: Command from Charlie side

Command: Command by

Chief 4: So I'm getting multiple reports that fire's in the wall. Center of the structure and on the Delta side of the structure.

Command: Copy that. I'm gonna have Rescue 2 give me a report from inside.

R2A: [on air] Chief, we're in the process of getting this hand line out. We do have smoke coming from the basement. We'll be out in a minute.

Command: Copy

TR15A: Command from Tower 15

Command: Command standing by

TR15A: Just to be aware, that back bedroom, first floor, Charlie/Delta corner, floor is spongy.

Command: Command copy. Rescue 2 proceed with caution. This fire has been going for 45 minutes now or more.

Safety: Command from Safety, I'm here with Rescue. They're just inside the front door. That's the furthest they're going in. We're not going inside.

Command: Yeah, that's affirmative. I concur.

Command: Truck 26 from Command. Can you give me an update?

Safety: Command, Safety, I'm with Truck 26. Standby for an update.

T26A: Chief, we don't have any more smoke pushing out. TIC shows no active fire on the Delta side from the room towards the front of the house.

Command: Command copy, TIC shows no active fire.

Command: Safety from Command

Command: Charlie side from Command

Chief 4: Charlie

Command: Do you have a fresh crew back there that can relieve Truck 26 on the Delta side?

Chief 4: Yeah, let me throw Engine 9 on it.

Command: Charlie side from Command.

Chief 4: Charlie

Operations

Command: You said Engine 9's going to relieve Truck 26. Do you have another fresh crew back there?

Chief 4: I got Engine 26.

Command: Copy. I'm just concerned this is gonna take off. Just standing by, see have many fresh crews we have.

Chief 4: I've got four back here now.

Command: Copy

Command: Truck 26 from Command

T26A: Go ahead

T26A: Go for Truck 26

Safety: Command from Safety. Engine 26 is now assigned with Rescue 2 to the Alpha side.

Command: Copy that. I just face to faced with Rescue. No heat signatures on the floor yet. Let's keep hitting it from the outside, wherever we can.

Safety: Copy that and that'll be from that Charlie/Delta corner. We got companies there. We got Engine 15 who needs an assignment. We could probably put them on that Delta side with Truck 26.

Command: Copy. Truck 26 is taking a break right now. Break. Charlie side is there another line going in on that side, on Charlie?

Chief 4: I've got two lines on the Charlie side. Two inch and three-quarter lines on the Charlie.

Command: Copy. Let's just flood it best we can until it cools down.

Chief 4: Copy that

Safety: Command from Safety, Engine 5 is coming to the Delta side where most of the fire is. They'll work with Engine 9.

Command: Copy that. There's significantly less smoke pushing now.

Safety: Can you repeat?

Command: There's significantly less smoke pushing out of the house right now. It looks like we're cooling it down quite a bit.

Safety: That's affirmative. Another 5 to 10 minutes, then we can re-evaluate.

Command: Copy that. As soon as some crews rest up, we'll see if we can get some crews down in the basement again.

Safety: Okay, copy. That'll probably be Rescue 2 and Engine 26. I'll have them stand by for a little.

Command: Copy

Dispatch: Command from Dispatch.

Command: Command standing by.

Dispatch: Command, you got a couple rigs not far out. You need anyone to come in for some relief?

Command: That's a negative right now. We're starting to rehab some crews and we're hitting it from the outside.

Dispatch: Copy that. We also added Arson and Airlight to your call.

Operations

Command: Copy that. Thanks Dispatch.

Command: Charlie side from Command

Command: We're gonna wait 5 more minutes here as we cool it down. Then I'll send in Rescue 2 and Engine 15. I believe in the front door to see if they can make the basement.

Chief 4: Okay, about 5 minutes.

Chief 4: Command from Charlie

Command: Command standing by

Chief 4: Yeah, I need some fresh bottles back here.

Command: Copy the Airlight is out front if you want to rotate crews to the Airlight.

Chief 4: Copy that Airlight here.

Command: Rescue 2 from Command.

R2A: Rescue 2 standing by

Command: Rescue if there's good visibility on the first floor, why don't you guys mask up and get ready to go in.

R2A: Copy, we do have visibility. We're going to head in.

Command: Charlie side from Command.

Chief 4: Charlie

Command: Let's shut down all the outside lines. Two crews going in the Alpha side to try to make the basement.

Chief 4: Copy, shutting down.

Chief 4: Command from Charlie. Engine 10 is coming out to rehab. I got Truck 15 back here.

R2A: Command, Rescue 2.

Safety: Command from Safety. Engine 9 is leaving the Delta side to rehab. The only one on the Delta side is Engine 15.

R2A: Command, Rescue 2.

Command: Standing by

R2A: Are we ready to go in?

Command: Yeah, that's affirmative.

R2A: Copy, us and Engine 26 are heading in.

Safety: Fire Dispatch from Safety

Dispatch: Go ahead sir.

Safety: Can you give us a time stamp in 10 minutes?

Dispatch: Affirm, just hit the one-hour mark. I'll give one more in 10 minutes.

Safety: Safety copy.

TR09A: Command from Tower 9.

Command: Command by

TR09A: Yessir, for your information RIT is repositioning to the Charlie side.

Command: Copy that.

R2A: [on air] Command, Rescue 2

R2A: [on air, weak] Command, Rescue 2

Operations

R2A: [on air, weak] Command, Rescue 2

Command: Rescue 2 from Command

R2A: [on air, weak] It's clear down in the basement. We're gonna back out right now.

Command: Copy, the basement is clear of active fire?

R2A: Copy

Safety: Command from Safety.

Command: Standing by

Safety: Yeah Chief, I was just talking to Engine 15 on the Delta side. They can advance on 1 ¾" line through this window well just to clean up anything Rescue 2 and Engine 26 might of missed.

Command: Copy that. Stand by one.

Command: Tower 15's going to go in the back door and check the Charlie/Delta bedroom on the first floor.

Safety: Copy that.

E26A: Command, Engine 26.

Command: Standing by

E26A: Yeah, we were just in the basement with Rescue. Hit some hot spots with the TIC and the water. There was about 3 feet of water in there. I recommend nobody go down there.

Command: Copy that, thanks.

TR15A: Charlie Command from Tower 15.

Chief 4: This is Charlie.

TR15A: [on air] Yeah Chief, we have floor collapse in this back bedroom.

Chief 4: Floor collapse Charlie/Delta corner. Command you copy?

Command: Copy. All units copy floor collapse Charlie/Delta corner, first floor.

Dispatch: Command from Dispatch.

Safety: Go ahead Dispatch from Safety.

Dispatch: Safety from Dispatch that is your 10 minute ticker right there.

Safety: Okay copy. We pulled those companies out. Thank you.

Command: Charlie side from Command.

Chief 4: Charlie side.

Command: I think I copied Tower 15 is back out right now, right?

Chief 4: Coming out the door.

Command: Okay, copy. Break. All units, all units on MLK- stand down. We're gonna rehab here for about 15 minutes. We got the fire knocked. All units we'll rehab for 15 minutes and come up with an overhaul plan.

Rig Placement Map



Observations and Recommendations

Observation 1: Incident Command

Reference: Denver Fire Department Standard Operating Guidelines 2110.01, 2110.2, 2111.01, 2111.02, National Incident Management System, Department of Homeland Security, 2008 Edition

Analysis:

Strategy:

Chief 5 was the 1st Chief on scene and assumed Command. Although a strategy was not stated by Command or Engine 10, it was understood by all that this was an offensive interior attack.

ICS Terminology:

The IC had asked Chief 4 to go to the Charlie side. The IC had meant for Chief 4 to recon that side for him and had not meant to create a Division. Chief 4 understood the IC's request to mean that he was assigned the Charlie side (Division) but did not have any companies assigned to him at this time. Chief 4 referred to himself as "Charlie" multiple times and also "Charlie Division". This practice of having the 2nd arriving Chief go to the Charlie side has become common on the Denver Fire Department. Chief 4 should have retained his designation of Chief 4 throughout the incident as he was a single resource completing a task (keeping the IC updated on conditions from his viewpoint on the Charlie side of the structure). Chief 4 was not assigned a supervisory capacity by the IC nor was he assigned any Companies. Furthermore, the term "Division" designates a specific geographical area where resources are working.

Recommendation:

Strategy:

The type of strategy being used at a fire incident should be stated by the initial IC.

ICS Terminology:

Review ICS definitions of single resources and Divisions. Assign 2nd arriving Chief according to the needs of the incident and use terminology that correctly reflects the assignment. In ICS terminology, single resources retain their company designation unless the IC specifically designates them as to a higher title (example: Charlie Division Supervisor).

Observations and Recommendations

Observation 2: Level 1 Staging

Reference: Denver Fire Department Standard Operating Guideline 2111.06

Analysis:

After the IC had an adequate amount of resources assigned to cover the immediate needs of the incident, all unassigned companies were assigned to Level 1 stage. Instead of Level 1 staging, 2 companies actively worked on a water supply for Engine 10 even though Engine 26 had been assigned this task. Later in the incident, an Engine was needed to spot in the alley and there was not one available due to the lack of staging as requested.

Recommendation:

All personnel should review and adhere to the Standard Operating Guideline 2111.06 regarding Level 1 and 2 Staging.

Observations and Recommendations

Observation 3: RIT Operations

Reference: Denver Fire Department Standard Operating Guideline 2110.01

Analysis:

Truck 26 was assigned at the time of dispatch as the RIT. Due to traffic delays encountered by the 2 other Truck Companies assigned to the incident, Truck 26 was the first Truck on scene. As the IC had already assigned R02 to complete a search and Engine 10 was already working in the interior of the structure, the IC chose to keep T26 as the RIT for firefighter safety. As the incident progressed, the IC, Incident Safety Officer, and T26 saw a need for the tactic of hitting the fire from outside the structure from a basement window on the CD corner (after evacuation of the basement). The Safety Officer and Truck 26 had the intention of using an existing, unstaffed handline near that location and quickly knocking the fire and returning Truck 26 to their RIT duties. This was relayed to and agreed upon by the IC. However, that handline was taken and put into use by another company on the Charlie side. This necessitated the crew of Truck 26 going to Engine 26, pulling an additional line, stretching it back to the CD corner, and beginning extinguishment from the exterior. Thus, a quick task became a long, drawn out task and left the incident without a RIT until Tower 9 assumed those duties.

Recommendation:

Companies assigned to RIT duties should not take on or be assigned involved tasks at an incident. If the RIT sees a need at an incident, they should inform the IC but still maintain their RIT duties. The IC can then assign an appropriate company to complete the needed task.

Observations and Recommendations

Observation 4: Communications

Reference: Interviews and radio transmissions, Denver Fire Department Standard Operating Guideline 2111.05

Analysis:

Radio Transmission:

Personnel had difficulty transmitting out of the basement.

Radio Malfunction:

One radio became wet which resulted in unintelligible transmissions.

Recommendation:

Radio Transmission:

Use of Radio to Radio Channels in areas where the normal, repeated channels do not function well. Downsides of the R to R Channels are that the emergency button does not function on this channel and that Dispatch cannot monitor and communicate with personnel operating on a Radio to Radio Channel.

Radio Malfunction:

Continue to wear radios by utilizing the radio belts and donning the radio and belt beneath bunking coats.

Observations and Recommendations

Observation 5: Evacuation of a Structure Procedure

Reference: Standard Operating Guideline 2111.05 Evacuation of A Structure or Area during an Operating Incident.

Analysis:

The IC implemented two strategy changes that resulted in the implementation of the backout procedure. On the first backout, the tones were not correct. On both backouts, only one apparatus sounded their airhorn.

Recommendation:

All personnel should review Standard Operating Guideline 2111.05. The S.O.G. specifically states: “All fire apparatus operators on scene, upon hearing the Incident Commander’s order and/or the evacuation alert tone, will sound their air horns for 30 seconds. The 30-second horn blasts can be repeated when the complexity of the structure and/or incident warrant. Pump operators who are managing active lines should not leave their pump panel to activate their air horns.”

Observations and Recommendations

Observation 6: Incident Safety Officer Roles and Responsibilities

Reference: Denver Fire Department Standard Operating Guideline 2110.05

Analysis:

On arrival, OPS-2 assumed the position of the Incident Safety Officer (ISO). The ISO donned all his safety gear before beginning work at the incident and after checking to see that the IC had a good accountability of all crews (the IC was using Tablet Command to track Companies and assignments) the ISO completed a 360. The notable hazards encountered were hoarding conditions in the yard as well as the interior and heavy fire venting in the CD corner of the basement. The ISO took a very active role in ensuring that all PAR's were complete during the transitions to Defensive Attacks. The ISO assigned the R.I.T. company an operational task in addition to their R.I.T. duties. Several times during the incident the ISO took a direct role in assigning/reassigning companies within the incident.

Recommendation:

Incident Safety Officers should only directly assign/reassign companies when urgent safety issues arise and time is of the essence in order to provide for the safety of personnel at the incident. Non-urgent observations can be relayed to the IC. The IC, in turn, can manage any needed assignments/reassignments.

Observations and Recommendations

Observation 7: First Due Engine Company Operations

Reference: Denver Fire Department Standard Operating Guideline 2112.01

Analysis:

Based on their direction of travel and availability of hydrants, Engine 10 decided to attack the fire off the tank. The intentions were clearly communicated by the Officer of Engine 10 and an assignment was given to the second due engine to complete the water supply. Engine 10 spotted in front of the house and pulled the 200' 1 3/4" cross-lay and entered the house through the front door. Subsequent companies (Engine 15, Engine 9, and Engine 26) pulled attack lines off Engine 10. There were at least two attack lines charged prior to the completion of the water supply.

Recommendation:

The Denver Fire Department generally operates with the first-due engine performing a forward-lay from the hydrant to the address with a Humat brand hydrant valve. This allows for the second or third due engine to work the first in engine's hydrant to boost the pressure or water volume to meet the demands of the incident. In certain circumstances it is generally accepted that a crew can attack a fire from the tank as long as it is communicated by the first due Officer. However, if Engine 10 had the ability to reverse lay by utilizing a pre-loaded attack bundle of 1 3/4", it would still have kept the crew safely out of traffic, kept 3 firefighters at the object house, and would have had an engine physically at the hydrant where it can operate with greater efficacy. Many engine companies throughout the Denver Fire Department are designing and training with pre-loaded reverse-lay or court-yard bundles of hose. This allows for quick water application with the smaller attack line while allowing for the first-due engine to secure their own water supply while leaving the front of the structure open for the first arriving truck. All engine companies should assess their apparatus and the needs of their district and investigate if a reverse-lay bundle would be beneficial.

Observations and Recommendations

Observation 8: Water Supply and Relay Pumping Operations

Reference: Denver Fire Department Standard Operating Guideline 2112.02

Analysis:

Water Supply (5-inch):

Engine 26 was tasked with providing a water supply for Engine 10. Engine 26, being the 5-inch hose company for District 5, opted to forward lay 5-inch to Engine 10. This lay was approximately 600 feet in length and required Engine 26 to make one turn. This also put two engines proximal to the front of the house that was on fire, not allowing close access for a truck company. 5-inch hose provides many positives to a fire scene, however, there are two negatives that were observed at this incident. The first negative is the decision to forward lay 5-inch. Once the 5-inch is charged without an engine on the hydrant it renders that fire hydrant “maxed out” for lack of a better term. If the hydrant had the necessity to be boosted, the entire water supply would have to be shut down and substantially drained before another engine could connect and work that hydrant. The Denver Fire Department does not have 5-inch hose clamps or 5-inch hydrant valves as standard engine equipment, therefore, sending an engine company to that hydrant to boost pressure would be a major undertaking at a working fire. Secondly, not having an engine on the hydrant took away the nearest water supply to the rear of this structure. If the decision to reverse-lay was made, the third due engine could have easily performed a forward lay from Engine 26 to the alley, which was a task that was requested during the scene but not accomplished.

Relay Pumping:

Engine 9 and Engine 15 collectively stretched one 3-inch line to Engine 10. Engine 9 was connected to a hydrant which put two engines (26 and 9) pumping into one engine (10). There is no SOG that addresses this issue, however, two engines from two different water sources pumping into one attack engine can create concerns. The main concern is the possibility for the attack engine to back-feed pressure towards the supply engine that is providing the lower pressure. This scenario can divert available water away from the attack lines jeopardizing interior firefighting. There is no way to prove whether this happened or not at this incident, but it should be a situation that is avoided in the future.

Recommendation:

Water Supply (5-inch):

5-inch engine officers should ensure that any driver/operator (trade, overtime, actors, and rovers) of a 5-inch engine should understand the duties and expectations of 5-inch water

Observations and Recommendations

supply operations. Because it is so important to deploy 5-inch supply efficiently there should be a check-list for driver/operators who do not normally occupy that position.

Relay Pumping:

The Denver Fire Department should plan extensive relay pump training that involves multiple engines. This should be on-going training for all engine companies.

Observations and Recommendations

Observation 9: Reserve engines with electronic valves

Reference: Interviews and observations

Analysis:

Engine 10 was utilizing a reserve apparatus Unit E-73 which is the Pierce Enforcer Engine equipped with gate valves that are controlled electronically. During the offensive fire attack crews of Engine 10 and 15 reported intermittent losses of pressure that alternated between hose-lines. This, coupled with the fact that the seat of the fire was behind a padlocked door, prompted the first of two back-out orders. It was also reported that after the incident, the shop diagnosed the valve to be faulty causing it to shut down at approximately 130 psi. and ended up repairing the valve. The Engineer of Engine 10 also reported that the flow meter on cross-lay #1 was not working.

Recommendation:

When assigned to a reserve apparatus it is imperative that all systems on the apparatus are inspected and are road and fireground ready. This should include exercising all electronic valves every day, which includes transfer valve, intake valves (large diameter), and all discharge valves. Exercising the discharge valves can easily be accomplished in the firehouse with the rig turned off. Once you position at the pump panel, close the tank to pump and open the proper discharge valve drain, run the valve from closed to all the way open. You should see a gradual transition of the light from closed, to throttled, to open, then in reverse when closing. In addition, you should also see residual water releasing from the drain. A valve that sticks will cause the light to immediately go from closed to open with no audible indication that the valve is opening. A normal operating valve will create noise indicating that it is opening and closing properly. Also, it is important to train while water is flowing from at least two hose-lines so the driver/operator can get a feel of the electronic valves when trying to fine-tune the discharge pressures. If there are any problems with the valve shutting off too early, open the valve until it is fully open and utilize the throttle and pressure relief valve to fine-tune the discharge pressure. This may cause pressures in the line to be higher than desired but will prevent the valve from prematurely shutting down while gating down. Any problems discovered should be reported to the company officer and the repair shop immediately.