

# Denver Fire Department



## Post Incident Analysis

16-01

Residential Structure Fire

16 Jan 2016

9752 West Stanford Avenue

## **Post Incident Analysis Description**

The main purpose of a Post Incident Analysis (PIA) is to learn from incident operations, including personnel actions and departmental procedures, and to give management recommendations into how department operations may be improved. When an incident occurs, regardless of type or outcome, a PIA may be initiated. As part of the PIA process, objective facts will be gathered through dispatch transcripts, FD707 written reports, and interviews. Every effort will be made to ensure the analysis is objective and accurate.

The PIA committee, composed of members of the Denver Fire Department representing ranks from Firefighter to Assistant Chief, will review all available information and draft 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 providing an educational tool for all employees allowing us to learn from actions taken and improve our current strategy and tactics, when determined necessary and appropriate.

Fraternally,

The Denver Fire Department PIA Committee

## General Incident Overview

1. A report of a single-family structure fire received at 18:55 hours on 1/16/16.
2. Dispatch relayed to incoming companies there were parties trapped.
3. First arriving companies (Engine 30, Truck 28, Engine 28) reported smoke showing and no visible flame.
4. Engine 30 secured water supply, Engine 28 went to work at Engine 30's plug and Truck 28 took command.
5. Engine 30 pulled an attack line, Engine 28 pulled a back-up line, Truck 28 secured utilities and attempted a primary search.
6. First arriving crews were driven back by the intense heat.
7. Truck 28 reported heavy fire on the Charlie side.
8. Access to the Charlie and Delta sides was difficult due to debris and parked cars.
9. Truck 28 located two parties on the Charlie side who had self-extricated from the second floor. The parties were handed off to EMS.
10. Multiple Personal Alert Safety System (PASS) devices were going off, resulting in a lack of communication.
11. Tower 23 Alpha had radio issues.
12. Engine 36 and Engine 23 secured secondary water supplies.
13. Rescue 1 vented the roof.
14. Tower 23 conducted primary search, assisted by Truck 38, Truck 28, and Rescue 1.
15. Truck 16 arrived on scene as the Rapid Intervention Team (RIT).
16. Tower 23 Charlie sustained a knee injury and is transported by EMS.
17. Crews on scene located one deceased party.
18. Duration of initial fire attack approximately 48 minutes.
19. The cause of the fire remains under investigation.

## Site Review



On January 16, 2016 at 1855 hours, The Denver Fire Department was dispatched to a structure fire, Map Page Q-17, at 9752 West Stanford Avenue. The structure was a Type V constructed Tri-level style home that was 1761 square feet and built in 1980. The home is situated in Southwest Denver and is bordered to the South and West by The West Metro Fire Protection District. The initial response was Engine 30, Engine 28, Truck 28, Engine 37, Tower 23, Rescue 1, Chief 7, and Chief 3. As apparatus were responding, dispatch announced there were parties trapped. Three parties were trapped ; two self-extricated from a second story window with one of those dying two days later. The third party was non-ambulatory and perished in the fire. At 1948 hours all companies were ordered out of the structure and sent to rehab – the scene was left for Fire Investigators.

## 911 Call

**911 Call Taker:** Denver 911 what is the address?

**Neighbor:** Yes, we live at 9771 West Stanford Avenue. They have oxygen in there; they have one who is in a hospital bed.

**Call Taker:** Hold on, hold on, hold on, slow down. Say the address again

**Neighbor:** 9772 West uh... Stanford Avenue

**Call Taker:** 9772?

**Neighbor:** West Stanford Avenue

**Call Taker:** Hold on just a moment, are you at that address?

**Neighbor:** Um, uh, we're across the street. I live at 9751 west Stanford Avenue [neighbor pauses]. Th...they have uh [call taker and neighbor interrupt each other] they have uh... they have a grandson who has MS; he's in a hospital bed. One of em has...a...a...the grandfather has diabetes, he's on oxygen.

**Call Taker:** K...what is [call taker interrupted by neighbor] ma'am....

**Neighbor:** The house is totally on fire

**Call Taker:** Okay, you're reporting a fire there? [noises in back]

**Neighbor:** Yes, there's a fire at 9752.

**Call Taker:** Okay, ma'am, okay. You told me 9772. Are we changing?

**Neighbor:** 97 [pause] 9752. I'm sorry, my husband [call taker and neighbor talk over each other]

**Call Taker:** 9772?

**Neighbor:** 52 West Stanford Avenue

**Call Taker:** Okay, hold on for the fire department ma'am. They've got the call, just a moment.

ENDTRANSCRIPT

## Resident's 911 Call

*Assuming call was after neighbor's 911 call because dispatcher already knew address*

**Fire Dispatch:** Denver Fire Dispatch [Indiscernible woman's voice in background]

**Resident:** Ya, we need a...I've got a fire at my house [Woman hollering in background] [Call Taker in Background: Jeffco 9752 West Stanford]

**Fire Dispatch:** A fire?

**Resident:** West Stanford Avenue, yes.

**Fire Dispatch:** K...[takes breath]

**Resident:** Hurry we got a...my son

**Fire Dispatch:** What's your address?

**Resident:** 9752 West Stanford Avenue, Littleton Colorado. It's actually Denver. [Woman yells "hurry, hurry" in background] [Woman wailing in background]

**Resident:** We need help...fast...hurry

**Fire Dispatch:** Ok, do you see...uh...active flames? [Woman speaking in background; conversation indiscernible]

**Resident:** Oh...shhh...my wife, I'm on dialysis. She's trying to get me off dialysis right now. [Woman yelling in background, "hurry, house is full of smoke"]

**Resident:** Hurry up, the house is full of smoke. [Woman screams, smoke alarms beeping]

**Resident:** Hurry [Takes long breath]

**Fire Dispatch:** Ok, is this a home?

**Resident:** Yes [smoke alarm beeping]

**Fire Dispatch:** Uh...

**Resident:** Hurry.

**Resident:** And I got my son downstairs [Dispatcher in background: ok, so we got, I need that address again (simultaneously)] [Call Taker in background: Denver it 9752 West Stanford Avenue]

**Resident:** 9...9752 West Stanford Avenue Littleton, Colorado

**Fire Dispatch:** 9752

**Resident:** Yes, I'ma...I'ma having a hell of a time breathing

**Fire Dispatch:** (while resident is finishing sentence) I'm...I'm sorry. I have 9752 West (resident repeats "West Stanford Avenue" simultaneously with dispatcher) [Smoke alarm beeping] [Resident gasping]

**Resident:** Ahh...ahh...come on babe [Talking in background, woman's voice]

**Fire Dispatch:** That's gonna be just east of Kipling and Stanford

**Resident:** Yeah

**Fire Dispatch:** We are dispatching rigs right now

**Resident:** Yeah hurry. [sighs] Hurry up please.

**Fire Dispatch:** Ok

**Resident:** Let me down [mumbling]

**Fire Dispatch:** What's on fire sir?

**Resident:** I don't know. Something downstairs. I'm upstairs. I'm being dialyzed.

**Fire Dispatch:** Ok, ok, and your...and you're on [pause] dialysis?

**Resident:** [wheezing, other breathing noise] Yes.

**Resident:** Hurry up, and I gotta son that's got uh...

**Fire Dispatch:** How many?

**Resident:** Uhh...

**Fire Dispatch:** How many people are in the house?

**Resident:** [woman talking indiscernible] 1, 2, 3, 4, 5 [woman wails] Oh I need a blood, hurry up.

**Fire Dispatch:** [woman still speaking, indiscernible] Ok sir, I'm just trying to get, we got rigs on the way right now.

**Resident:** [groans] Ok. Ok.

## Resident's 911 Call

**Fire Dispatch:** There's 5 people in the house?

**Resident:** Yes

**Fire Dispatch:** Can you get out of the house?

**Resident:** Uhh... I can't; I'm on dialysis. I want to try, and we gotta son, my [coughing]

**Fire Dispatch:** Ok, you need to try and get whoever you can out.

**Fire Dispatch:** Sir, what's your name?

**Resident:** [coughs] Ralph Androtti

**Fire Dispatch:** Can you spell that sir?

**Resident:** My...my son...my son is handicapped [pause] I gotta get him outta here.

**Fire Dispatch:** What is your name sir?

**Resident:** Ralph Androtti

**Fire Dispatch:** Ralph Androtti?

**Resident:** Yes

**Fire Dispatch:** Ok [interrupted]

**Resident:** Hurry up, hurry up

**Fire Dispatch:** Ok, what is your phone number sir?

**Resident:** 303-973-7968

**Resident:** Hurry up, hurry up [Woman wailing]

**Fire Dispatch:** [resident gaps] Ok, are...are you getting a lot of smoke?

**Resident:** Yes [woman's voice "the wires are going even"] The wires are going even now.

**Resident:** [coughing, choking] What?

**Resident:** Oh shit, I can't see. What?

**Resident:** [gasps, yells] Hurry, please.

**Fire Dispatch:** [caller audibly breathing] Sir, we have people coming right now, but you need to try and get out of the house.

**Resident:** Ok, I'm gonna try. We gotta try to get out of the house.

**Resident:** It's full of smoke. Hold on, flip this, flip this. [Resident and woman have muffled conversation]

**Fire Dispatch:** Where are you at [Woman yelling]

**Resident:** I'm upstairs

**Fire Dispatch:** Ok, you're in a bedroom?

**Resident:** Yes

**Fire Dispatch:** Ok, what, what, uh... If you, if we show up at the front door [woman yelling, indiscernible in background] where would we

**Resident:** [woman wailing in background] the wires are going [pause and popping sound] the wires are going.

**Fire Dispatch:** Where would we find you if we come into the house? [pause] Are you in a back bedroom? A front bedroom? Where are you at?

**Fire Dispatch:** Sir?

**Resident:** [coughs]

**Fire Dispatch:** Sir? [metallic sound in background] Are you there? [Woman hollering ][Indiscernible voice]

**Fire Dispatch:** Hello? Sir?

[Resident's voice heard in background; woman wails]

**Fire Dispatch:** Sir if we're coming in the front door, where are you at? [Woman's voice inaudible]

**Fire Dispatch:** Sir, are you there?

END TRANSCRIPT

## Operations

**Dispatcher:** Map page Quebec one seven report of a structure fire, 9752 West Stanford Avenue for Engine 30, 28's a Pair, Engine 37, Tower 23, Rescue 1, Chief 7, Chief 3, and Truck 38 is the RIT. All companies operate on district channel 7, time is 1855.

**Engine 36:** Copy, Engine 36, we're responding.

**Dispatcher:** All companies responding to 9752 West Stanford Avenue, we might also have parties trapped in this fire.

**Ambulance 50:** Ambulance 50 enroute (18:57:31)

**Dispatcher:** All companies responding to 9752 West Stanford Avenue, we do have parties trapped in this house fire. (18:58:42)

[Two key ups (sirens)]

**Tower 23:** Engine 30 from Tower 23, help guide us in there when you get a chance please.

**Engine 30:** Copy, we're coming in off of [pause] Stanford and Kipling

**Chief 7:** Tower 23, Chief 7, let's go all the way to Hampden to Kipling.

**Tower 23:** Copy (18:59:06)

**Engine 30:** Two please, Engine 30 laying two lines with the humat from Julian, on Stanford.

*Engine 30 using Ready Reserve Unit E-05 lays in traveling West to East on Stanford Ave. from the plug at Jellison and Stanford Ave. with two 3" supply lines and the Humat Valve. Engine 30 is spotted on the Alpha/Bravo corner. Engine 30-C puts a Sampson on one line only. Engine 30-D attaches line one and charges the line. The charged line floods Engine 30's hose bed. Engine 30-B resolves the problem.*



**Engine 36:** Tower 23, Engine 36, we're coming up right behind you on Hampden.

**Engine 30:** We do have smoke showing guys. (19:00:01)

**Engine 28:** Engine 28 going to work at 30's Humat. (19:00:53)

**Truck 28:** Truck 28, 9752 West Stanford, we have a bi-level home, smoke showing, Truck 28's in command. Command post is in the front of the building. Engine 28 go with a backup line.

*Truck 28 arrives on scene coming from West to East on Stanford Ave. and takes command on the address side. Truck 28 spots apparatus across the street to leave room for a Tower in front of the structure. Truck 28-B begins shutting down utilities.*

## Operations

**Engine 30:** Truck 28, we have two elderly people upstairs in this building and we have one right inside the door.

*Engine 30-A asks for the 200' pre connect and Engine 30-C pulls the line to the front door. Engine 28 arrives on scene and spots at Engine 30's plug. Engine 28-B and Engine 30-D finishes the connection to Engine 28. Engine 28-A, C, and D walk up to Engine 30 and assist Engine 30-A and D pulling the 200' 1 3/4" preconnect. After the fire it was determined that the nozzle was a 95gpm fog and during the fire it was in a fixed position. Engine 30 was unable to adjust the pattern on the 95gpm nozzle*

**Engine 28:** Engine 28 copy, a backup line. (19:01:24)

**Dispatch:** Command from dispatch, second ambulance is en-route

*Engine 28 pulls a 300' 1 3/4" backup line.*

**Engine 30:** Dispatch could you send a second ambulance to this location

**Dispatch:** We copy that, we'll get em going. (19:02:46)

**Chief 7:** [sirens] We got lots a smoke over there Tower 23.

**Tower 23:** I copy.

*Engine 30 and Truck 28 make entry and find high heat conditions. Truck 28-C and D begin right hand search through the main door on the Alpha side that was open prior to DFD arrival. Engine 28 is right behind Engine 30. Engine 30-D makes his way to front door with his crew and grabs the hose then feels it is soft. Engine 30-D then follows the hose back to the engine removing many kinks and pulls remaining hose in the hose-bed that is jammed under a backboard.*

**Ambulance 50:** Ambulance 50, we're six, on green two (1903:18)

**Engine 30 D:** Command 30 Delta

**Command (TRUCK 28A):** All companies, utilities are shut down. (1903:33)

**Dispatch:** Command from dispatch, second ambulance is en-route

*CONDITIONS UPDATE: Crews stated that up to this point there was no fire visible and smoke was light but at this time was black and getting thicker.*

**Engine 30:** [on air] Command, we need some ventilation (1904:28)

**Engine 30:** [on air] Command, we're gonna need ventilation of this building. (1904:45)

**Command (TRUCK 28A):** Repeat (1904:54)

**Engine 30:** [on air] Command, this's Engine 30, we need ventilation in here now. (1905:01)

*Engine 30 made in approximately 10' inside that Alpha door. Truck 28's search is stalled due to high heat. Truck 28 C and D exit the structure and they begin to look for another way to enter the structure.*

**Engine 30:** [on air] This first room is fully engulfed (1905:12)

**Command (TRUCK 28A):** Command copies.

**Command (TRUCK 28A):** Truck 28, Truck 28 from Command. (1905:30)

**Chief 7:** [sirens] Truck 28 command, uh...Chief 7, where do you want Tower 23? We're coming on scene in about one minute (1905:43)

**Command (TRUCK 28A):** Tower 23 can position in front of the house. Truck 28 should beyond it. We do have the street cleared.

**Chief 7:** [sirens] Ok, we got those people out?

**Command (TRUCK 28A):** That's negative. We're, uhh, in the middle of the fire right now. Trying to reach Truck 28 right now, see where they are in their search.

*Truck 28 gets to the backyard by climbing over a car and jumping a fence on the Delta side. The Bravo side was their first choice but was more cluttered and less accessible than the Delta side. Truck 28 finds heavy fire on the Charlie side and two victims. Victims had self-extricated out the Charlie side windows via non fire department ladders placed by civilians. They move the victims away from the structure. Truck 28-C and D attempt entry through a man door on the Delta side into the garage and are confronted with more clutter. Soon after entry they think they hear air horns sounded for a back out and exit the structure. Truck 28 then returns to the Delta side to remove a section of fence to assist with patient extrication.*

## Operations



**Truck 28C:** Truck 28 Charlie, command, we're at the backyard. We just got here. There is supposedly one more inside.

**Command (TRUCK 28A):** Copy, do you have anybody back there right now or any victims?

**Truck 28C:** We have 2, repeat 2.

**Command (TRUCK 28A):** Command copy. You have two victims in the back. We'll have a...um...paramedics around the back. (1906:40)

**Truck 28C:** That's affirmative. We have heavy fire in back.

**Chief 7:** Chief 7 on scene, Chief 7 will assume command after a face-to-face with Truck 28. (1906:54)

**Tower 23:** [siren] Tower 23 is on scene. I'm sending two members in to assist with the primary.

**Engine 30:** [siren] [on air] Engine 30, command. We still have a high heat in this building.

**Truck 38:** Truck 38 on scene. Need ventilation, chief? (1907:21)

*Due to tremendous heat and an entryway congested with firefighters, Engine 28 cannot get into the structure. Engine 28 checks to see if they can get a line to the Charlie side, but due to the clutter on the Bravo and Delta sides, they move back to the front. Engine 28 attacks the fire through the garden level windows after confirming no firefighters were on the garden level. Also heavy smoke was coming out of the garage door so Engine 28 removed a panel, checked conditions, and determined the garage was not a priority at this time.*

## Operations



**Chief 7:** Come up to the command post; I'll give you an assignment.

**Truck 38:** Copy, on our way.

[1907.41 Two second indecipherable transmission]

**Engine 36:** Command, Engine 36. You want a secondary water supply? (1907:49)

**(TRUCK 28A):** That's affirmative. Second water supply.

**Engine 30:** Command, can you open the roof?

**Chief 7:** Tower 23, ya, I want to second floor with your imagers.

**Chief 7:** Stanford command, dispatch, Chief 7 now in command. Two story, bi-level, heavy smoke, heavy fire conditions on all four sides. (1909:01)

*Truck 38 arrives coming West to East on Stanford Ave. and through a face to face with D-07 is given the task to assist on the Charlie side. All members of Truck 38 go to the Charlie side via the delta side (Truck 38-B was delayed due to a secondary assignment that was changed and was quickly reassigned back to Truck 38) by crawling over the car and going through the section of fence removed by Truck 28.*

**Engine 30:** [on air] Command [short pause], Engine 30, we need to open the roof [radio interference] to dissipate the heat inside the building.

**Command (Chief 7):** Truck 38, is there any way you can get your, uh, come out here and operate Truck 28 and get the stick to the roof, so we can get some ventilation? (1909:29)

**Truck 38:** Copy, Truck 38 Bravo, you copy that?

**Command (Chief 7):** Dispatch, go ahead start me an additional engine and truck [short transmission with several voices]

**Chief 3:** Chief 3 on scene (1909:55)

**Engine 36:** Command, Engine 36, you got a assignment for us?

## Operations



Section of fence removed by

*Engine 36 arrives on scene coming West to East on Stanford Ave. and establishes a secondary water source from a plug on the North side of the street in a new construction area. Consideration was given to finding a plug coming from East to West on Stanford Ave. before finding the plug that was used. The crew makes the water connection and Engine 36-A is given a face to face assignment of RIT. Engine 36 assembles proper equipment and reports to the command post.*

**Truck 28:** Command from Truck 28, heavy fire backside, heavy fire backside.

**Command (Chief 7):** Copy, heavy fire, Charlie side...Chief 3, I want you Charlie Division.

**Chief 3:** Chief 3 copies, Charlie division.

**Rescue 1:** Command, this is Rescue 1, we'll be on scene in about 1 minute

**Command (Chief 7):** Rescue, I want you to go up...uh...Tower 23's bucket and, uh, start ventilation on the roof.

**Rescue 1:** Rescue 1 copy, roof ventilation.

*Rescue 1 arrives on scene and begins vertical ventilation from Tower 23's bucket. Three holes placed on two levels (2nd story and main level) of the structure.*

**Truck 28:** [on air] Command from Truck 28, Charlie side [takes breath], we have 1 burn victim, back side, out of the building, 1 son unaccounted for. (1910:47)

**Command (Chief 7):** Copy, one person still unaccounted for. Dispatch did you copy an extra engine, truck?

**Dispatcher:** Dispatch copies. You're getting Engine 25 and Truck 16 Chief.

**Command (Chief 7):** Ok, I'm gonna need air light, and also start fire investigations.

**Dispatcher:** Copy that sir. [Short transmission, sirens]

**Truck 28:** Command, we could use a line back here.

*Truck 38 begins first-aid on the two victims after moving them away from the radiant heat of structure. Truck 38 then removes a section of the fence on the Bravo exposure side (East side) so EMS has access.*

*Engine 36 does a 360 of the structure and notes heavy fire on the Charlie side. D-07 assigns Engine 36 to take a line to the Charlie side. Engine 36 confirms with D-07 face to face. Engine 36 checks with Engine 30-B to make sure they have enough water and pressure to supply an additional 2 1/2 line. Engine 36 then pulls the line to the Charlie side via the opening in the fence of the neighbors yard established by Truck 38.*

## Operations

*Truck 38, after getting the two victims handed off to DH&H, returns to the Charlie side and removes the bars from the garden level windows. Through the Alpha door Tower 23-C and D make their way just inside the structure. Using the thermal imaging camera Tower 23-C informs Engine 30 of the heat path (no visible fire at this time). At this time Tower 23-C hears a PASS device in full activation, sees a firefighter with it on, and determines they are not in distress. The firefighter is made aware and a request to shut it off is made. Unable to move forward, Tower 23 exits and after hearing another call for ventilation Tower 23-A and C take the garden level windows. Tower 23-C puts their face piece and helmet back on after having them knocked off by a hose stream. They then makes their way to the Charlie side and removes the garden level windows. Tower 23-D, still on the Alpha side, does a garden level search by hanging halfway in the window and reaching as far as possible with his tool.*

**Engine 36 D:** Command Engine 36 water coming. (1911:36)

**Command (Chief 7):** Engine 36, ummm...I'm gonna have to have you take an additional line to the rear for truck 28, and then, uhh, my next in, specialized in rigs, I'll put them up as RIT.

**Charlie Div (Chief 3):** Command from Charlie side, we have heavy fire on the Charlie side here. We're gonna need to protect the, uh, Bravo exposure, and we are evacuating one victim through a hole in the fence to the house, uh, immediately to the East.

**Command (Chief 7):** You got paramedics back there?

**Charlie Div (Chief 3):** That's negative sir. We'll need them, uh, limited access, so we're gonna try to get this patient to, uh, the backyard of the house to the East.

**Charlie Div (Chief 3):** Charlie Sector to Command, we're gonna be evacuating this patient to Stanford and Iris, if they want to have the paramedics meet there. (1912:54)

**Command (Chief 7):** Copy, I think they just, uh, copied that.

**Charlie Div (Chief 3):** We also have a heavy body of fire on the entire Charlie side if we coulda' get a line back here.

**Command (Chief 7):** Yeah, we gotta go in to, uh, Rescue, you're in the bucket, uh, be very careful, work off the bucket, work off the bucket.

**Rescue 1:** Copy, workin off the bucket.

*Tower 23-D climbs a ladder to the second-floor window, enters, and begins a primary search. Tower 23-A makes his way to Engine 30's line and begins assisting them in an attempt to reach the stairs to protect firefighters on the 2nd floor. Engine 30-A runs low on air and leaves the structure. Soon after Engine 30-C runs low on air and sets the nozzle down and leaves the structure. Tower 23-A moves up on the line and is backed up by Engine 30-D and pushes forward towards the stairway. Tower 23-C is now making his way back into the structure through the Charlie side garage man door.*



## Operations

**Tower 23 C:** [on air] Tower 23 Charlie to Command [interference, speaker barely audible]... I need a line back here

**Command (Chief 7):** Unable to copy, Tower 23 Charlie

**Truck 28 B:** [heavy breathing] Command, Truck 28 Bravo

**Command (Chief 7):** Ok, guys, we got heavy fire in the basement, heavy fire coming in the basement.

**Truck 28 B:** We have an access to the backyard here on the, uh, Delta side.

**Truck 28 B:** Command, Truck 28 Bravo

**Command (Chief 7):** Go Bravo

**Truck 28 B:** We have access to the backyard for hose lines on the house on the Delta side.

**Charlie Div (Chief 3):** Charlie to Command, uh, we're gonna try to bring a line in if we can through that garage  
(1914:29)

**Charlie Div (Chief 3):** Command from Charlie, we might need to go, uh, with a transitional to darken this down from the outside on the Charlie side. [short pause] Companies on the interior; I don't know how stable that is right now.  
(1915:06)

**Command (Chief 7):** I agree. Right now we're still trying to find one victim, one victim. We'll go, uh, defensive here as soon as we get done with the rescue operation.

**Charlie Div (Chief 3):** Copy. I've got the report the neighbor, that victim is in a hospital bed in the upstairs.

**Command (Chief 7):** Yeah, we're trying to make that right now.

**Command (Chief 7):** [chainsaw in background] Got it, Tower 23 Alpha Charlie what's your status? (1916:01)

**Tower 23:** [on air] Command from Tower 23 Alpha [takes breath]. Still on the first floor. [takes breath] High heat [takes breath] Heavy fire, trying to make the second floor.

**Command (Chief 7):** Copy, still trying to make the second floor.

**Command (Chief 7):** [chainsaw in background] Command to Engine 23. On your arrival I'm gonna need you to get a secondary water supply, hopefully from the West, or, from the East to this location, and, uh, we're gonna start supplying some more handlines, and probably, the aerial. (1916:41)

**Truck 28 B:** Engine 30 [short pause], charge that, uh line to the rear.

**Command (Chief 7):** Truck 16 on arrival, I need you a RIT. (1917:06)

**Truck 16:** [sirens] Truck 16 copy, RIT.

**Engine 36:** Engine 36 Engineer, Engine 36, charge that two and a half.

**Charlie Div (Chief 3):** Command from Charlie, 36 is gonna try to darken it down a little bit from the exterior Charlie side.

*Engine 36 gets water to the structure with a 2 1/2" line and puts out most of the fire on the Charlie side. There was trouble with pressure on the line due to issues with the electronic valves on Engine 30's reserve*

**Command (Chief 7):** Copy [siren]

**Engine 23:** [siren] Command, Engine 23. I'm not seeing any plugs to the East, uh, they're a couple blocks away. See if we could find something to the West and lay in from there.

**Command (Chief 7):** I, Ya won't be able to get to the West uhh... we got that all blocked off almost to the shopette to the West.

**Engine 23:** Copy, I'll see if we can get around from the East then.

**Tower 23 D:** [on air] Command from Tower 23 Delta, I'm gonna make entry through the window and check this first room.

**Command (Chief 7):** Unable to copy. [Radio keys, muffled sound] (1918:12)

**Rescue 1 D:** [on air] Command, Rescue Delta

**Command (Chief 7):** Command by

**Rescue 1 D:** [on air] We have heavy fire through the vent hole, we've cut up [takes breath] we're getting off the roof at this time.

**Charlie Div (Chief 3):** Command from Charlie, we are gettin' it darkened down in the rear of the building with remaining fire through the vent hole on the roof. (1918:39)

**Unknown:** Rescue En [digital tone interrupts transmission] (1918:59)

**Rescue 1 D:** [on air] Command, Rescue Delta (1919:26)

**Command (Chief 7):** Go Rescue Delta

**Rescue 1 D:** [on air] Command, does look darkened down, we still have fire shooting out a the vent hole.

**Command (Chief 7):** I was unable to copy.

**Rescue 1 D:** [on air] You still have heavy fire; heavy fire shooting out of the vent hole.

**Command (Chief 7):** Heavy fire coming outta vent.

*Tower 23-C and D meet up on the 2nd floor and Tower 23-C falls through burnt out stairs going to the 2nd floor. At this time they realize that neither have had contact with Tower 23-A. They look for him without success then contact command.*

## Operations

**Tower 23 C:** [on air] Tower 23 [static interference] (1920:00)

**Command (Chief 7):** Go Tower 23

**Tower 23 C:** [on air] Tower 23 C, Charlie and Delta are together. We're looking for Alpha.

**Command (Chief 7):** Unable to copy.

**Tower 23 C:** [on air] Tower 23 to [large amount of static and feedback] Charlie and Delta are together. We are looking for our Alpha.

**Command (Chief 7):** You're looking for Tower 23 Alpha? [Undecipherable transmission with feedback]

*Truck 23-A realizes that crews are looking for him and attempts multiple times to radio command that they are ok with no success. (Note: Engine 28-D also was never able to get their radio to work properly during the incident.)*

**Rescue 1 A:** Command this is Rescue. We got a hole cut. We're on our way down; we can have a reassignment

**Command (Chief 7):** Ok, uh..., come over here meet me, and uh... and we'll redirect ya.

**Rescue 1 A:** Copy

**Charlie Div (Chief 3):** Command from Charlie, we're gonna try to get a little bit of that roof through the leave on the Charlie side.

**Tower 23 B:** [on air][feedback] Tower 23 A, Come in.

**Engine 23 A:** Engine 23, go ahead and lay in from there, from that position.

**Dispatcher:** Chief 7, are we missing Tower 23 Alpha?

**Command (Chief 7):** I'm trying to establish that right now.

**Charlie Div (Chief 3):** Charlie side to, to Command. We do have a PASS activated. I'm gonna get a crew right in here, to their Charlie side to see if we can locate that.

*Tower 23-C and D are exiting the structure via 2nd floor windows due to low air alerts when a PASS alarm is heard. Tower 23-D begins a search for the active PASS device. Truck 38 finishes taking the bars off the Charlie side windows, hears a PASS device in full alarm, and enters the structure from the Charlie side to look for the active PASS device. While searching for the PASS alarm, Truck 38 notes the PASS alarm is moving. Tower 23-C begins exiting the structure on the Alpha side ladder. Truck 23-C hears a PASS alarm outside of the structure and requests that firefighters shut it off. Truck 38 also finds a firefighter with a PASS device in full alarm and shuts it down near the Alpha side door. Truck 38 regroups at the Alpha door then goes back in to start a primary search on the 2nd floor. Two members of Truck 38 partially fall through the stairs going to the 2nd floor. Tower 23-D runs out of air upon reaching the 2nd floor window and immediately exits via the same ladder Tower 23-C came out on.*



## Operations

**Command (Chief 7):** I got Rescue going in as a RIT team right now. Rescue's going in from the Alpha side. All members we've got, uh, a device activated. device activated.

**Command (Chief 7):** Dispatch go 'head and start me a RIT reassignment

**Dispatcher:** Copy that sir.

*Rescue 1, after completing ventilation, is on their way to the command post for reassignment. As they reach D-07, they are assigned to RIT operations and told to find the active PASS device. They enter the Alpha door of the structure and a firefighter exits the Alpha side door with his PASS device in full alarm. Since Rescue 1 found the active PASS device they proceed into the structure and begin to pull ceiling on the 2nd floor. Truck 38 soon joins them to help pull ceiling.*

**Engine 36 A:** Engine 30 Engineer, Engine 36, knock our pressure down a little bit.

**Engine 23 B:** 23's layin two lines Derrick

*Engine 23 lays in with two lines from the plug at the strip mall on the West side of the incident and prepares for large water operations. Engine 23-A does a face-to-face with D-07. Engine 23 is assigned and performs a search on a bedroom. Engine 23 enters the 2nd floor from a ladder at the Alpha/Bravo corner*

**Engine 23 A:** Copy, thank you

**Engine 23 A:** Command from Engine 23, you gonna want us to pull lines to the front or the rear of the structure? (1922:24)

**Engine 36 D:** Command from Engine 36 Delta. This is [interference] device going off, [short pause] in the [short pause] driveway. (1922:37)

*Engine 30 returns to their line. Tower 23-A makes his way to the Alpha door and gets a visual with D-07 and lets him know they are ok. Tower 23's full crew regroup then returns to their rig to change air bottles.*

**Tower 23 C:** Tower 23 to Command, Charlie/Delta [interference] on the second [interference]. [Transmission becomes indecipherable]

**Command (Chief 7):** Unable to copy.

**Engine 23 A:** [sirens] Engine 23 Plug catcher hang off for just a second on charging these lines. West Metro's gonna move out first.

**Command (Chief 7):** Alright, I got Tower 23 Alpha accounted for; Tower 23 Alpha accounted for.

**Truck 16:** [siren] Truck 16 is on scene.

*Truck 16 is assigned RIT. They gather equipment and perform a RIT recon.*

**Command (Chief 7):** Truck 16 come up the Alpha side of the building.

**Engine 23 A:** [siren] Engine 23, go head charge the line.

**Rescue 1 D:** Command, Rescue Delta

**Engine 23 A:** [siren] Command from Engine 23, we laid in from the West, uh, we're on, uh, Jellison. We could pull a line to the rear through the backyard of this adjacent house.

**Rescue 1 D:** Command, Rescue Delta. We need a line upstairs.

**Command (Chief 7):** Rescue Delta, can you get it through the window here on the Alpha side? [Short transmission with heavy breathing]

**Charlie Div (Chief 3):** Command from Charlie, uh, we don't need a second line to the rear sir.

**Engine 23 A:** Command, Engine 23. Do you have an assignment for us? (1924:34)

**Command (Chief 7):** Yeah, why don't you come up here...and uh...Alpha side, and dispatch you can cancel that, uh, RIT response, um, we found our firefighter.

**Engine 25:** [sirens] Copy that Chief; you still need us comin' in?

**Charlie Div (Chief 3):** Command from Charlie, do we have anybody on the interior of that building?

**Engine 23 A:** Command, Engine 23. Do you want us to bring a line to the front? (1925:07)

**Command (Chief 7):** That's negative. I got one ya can handle up here.

*Engine 23 begins to put out hot spots on the exterior of the Alpha side.*

**Rescue 1 B:** [on air] Rescue Delta from Bravo. I'm on the line in the window.

**Rescue 1 D:** [on air] Are you comin' on the Alpha side

**Dispatcher:** Tower 4 Fire Dispatch (1925:25)

**Truck 4:** [sirens] Go 'head

## Operations

**Dispatcher:** Sorry, Truck 4, [short pause] RIT response has been cancelled if you can head back to 28's.

**Truck 4:** That's affirmative. [Radio transmission with voice, chopped by interference] (1925:19)

*RIT operations are no longer needed and all Companies return to fire fighting. Rescue 1, Truck 38, Engine 30 and Engine 36 begin working on the second floor to pull ceiling and extinguish fire in the attic.*

**Rescue 1 D:** [on air][feedback] Command from Rescue Delta

**Rescue 1 A:** [on air]Command, Rescue. (1926:32)

**Tower 23?:** Tower two [interference] Command (1926:47)

**Rescue 1 A:** [on air] Rescue Delta, this is Alpha. Your location? (1926:59)

**Rescue 1 D:** [on air] Second floor [takes breath] [indiscernible] and fire in the attic.

**Rescue 1 A:** [on air] Copy that. [Mic key up]

**Rescue 1 D:** [on air] Rescue, Rescue Delta (1927:44)

**Rescue 1 A:** [on air] Go 'head

**Rescue 1 D:** [on air] We could use another company upstairs; help us pull ceiling.

**Rescue 1 A:** [on air] Repeat. I couldn't understand.

**Rescue 1 D:** [on air] We could use another [interference] company upstairs [interference]; help with pulling ceiling.

**Rescue 1 A:** [on air] Copy that.

[Short transmission, interference only]

**Rescue 1 D:** [on air][Feedback] Command, Rescue Delta. (1928:24)

**Rescue 1 B:** [on air] All units from Rescue Bravo coming to second floor, be advised, there are some holes on the stairs and on the second floor landing. (1928:38)

**Rescue 1 A:** [on air] Copy that.

**Engine 36A:** Engine 30 Engineer, Engine 36. Can you cut our pressure on the, uh, two and a half [short pause] 'bout 40 pounds. (1930:12)

[Short transmission with no speech] (1930:40)

**Command (Chief 7):** Truck 38, watch out. You got heavy fire above ya.

**Truck 38 A:** [indiscernible] [on air] Copy, we're tryin' to hit it now.

**Truck 28A:** [on air] [heavy static] First two stairs are the two stairs that are out goin' to the second floor, just be aware. [interference] stairs. (1931:18)

**Engine 36A:** Engine 30 Engineer, Engine 36. We're gonna need a little bit more pressure now. [Short transmission, no speech]

**Engine 30B:** Ok, Cap

**Rescue 1 A:** [interference] Go 'head for Rescue

**Dispatcher:** Sir, we're getting' emergency signal from Alpha and Delta

**Rescue 1 A:** Copy that was a inadvertent act...

**Dispatcher:** [beeping in background] Copy, 1936

**Rescue 1 D:** Fire dispatch, Rescue Delta, I'm good (1936:12)

**Dispatcher:** Copy that sir 1936. [Key up with feedback]

**Command (Chief 7):** Command, uh..., Stanford. Dispatch Comma...Stanford Command

**Dispatcher:** Go 'head Chief

**Command (Chief 7):** We've got the majority of this fire knocked down right now. It's not under control; we're still in the process of a primary search. Hold all companies.

**Dispatcher:** Copy that 1936.

**Command (Chief 7):** A,a, and, looks like we got 6 lines in operation.

**Dispatcher:** Copy that, 6 lines in operation. 1936.

**Truck 38 A:** [on air] Command from Truck 38. [Takes breath] Search of the second floor negative. Second floor is clear. (1937:16)

**Truck 38 A:** [Heavy static] [on air] Command, Truck 38. (1937:33)

**Truck 38 A:** [on air] [takes breath] Command from Truck 38. [takes breath] Parts of the second floor [indiscernible]. Second floor is clear.

**Command (Chief 7):** Ok, I think I copy. Primary search second floor negative.

**Truck 38 A:** [on air] That's affirmative. Companies beware; we do have a hole on the floor [takes breath] in the room [takes breath] in the Delta or Charlie/Bravo corner.

**Command (Chief 7):** Ok, hole in the second floor, flooring, Delta/Charlie corner.

**Engine 23 A:** [on air] Command, Engine 23. We've held off [garbled]

**Truck 38A:** [on air] We don't need anyone else on the second floor. No one else on the second floor. (1939:21)

**Rescue 1 A:** Rescue Bravo this is Alpha.

**Command (Chief 7):** Command by

## Operations

**Rescue 1 B:** [vibrant] Bravo, I'm on my way out.

**Rescue 1 A:** Copy Rescue Bravo. I'll meet you at the rig. [Transmission, heavy static only] (1940:46)

**Truck 38 A:** [on air] Truck 38 [pause] Engine 30 from Truck 38. PASS us one of those lines in the basement. We have hot spots. (1940:53)

**Truck 38 A:** [on air] Engine 30 from Truck 38. Can you PASS one those lines downstairs? [Takes breath]

**Truck 38 A:** [indecipherable] Engine 30 [indecipherable] (1941:53)

**Tower 23 D:** [on air] Command from Tower 23 Delta.

**Command (Chief 7):** Go, Tower 23 A

**Tower 23 D:** [indiscernible]

**Command (Chief 7):** Tower 23 Alpha, couldn't copy. (1942:18)

**Tower 23 A:** [on air] We are in the [static]

**Truck 38 A:** [on air] Command from Truck 38. [heavy static] [heavy breathing] [indiscernible] Burnt floor [indecipherable] Primary of the basement's negative. (1942:43)

**Tower 23 A:** [on air] Command [interference] From Tower 23 Alpha (1943:33)

**Command (Chief 7):** Go tower 23 Alpha. [Mic Key Up]

**Tower 23 A:** [on air] Primary in the basement is negative. Primary's negative [takes breath]. We also have a hole in [interference] in the second floor [takes breath] [feedback].

**Command (Chief 7):** Ok, copy. A hole in the second floor. That should be the, uh, Charlie/Delta corner.

**Charlie Div (Chief 3):** Charlie to Command, could we, uh, send EMS in the back. We've got an injured firefighter back here. We might need some wheels if we can.

**Command (Chief 7):** EMS is on the way. Injured Firefighter. Dispatch, you copy? I'll get you updates when I can [feedback]. Go 'head start a page.

**Tower 23 A:** [on air] Bravo/Charlie, Chief. Bravo/Charlie corner [takes breath]. Second floor, [takes breath] floor has a hole.

**Command (Chief 7):** Copy that.

**Dispatcher:** Dispatch copies Chief.

*Tower 23 enters the structure and begins a primary search of the garden level. During the search Tower 23-A determines that Tower 23 C and D should leave the structure. At some point during the search or while exiting, Tower 23-C falls and feels a sharp pain in his knee. Tower 23-C exits the structure via the first floor on the Charlie side. Tower 23-C finds a large nail penetrating his bunking pants and entering his knee. EMS responds and takes Tower 23-C to the hospital. Tower 23-A hears the report of an injured firefighter and makes his way to the Charlie side just in time to see his firefighter being loaded onto the pram and being taken away.*

**Tower 23 A:** Command from Tower 23 Alpha (1946:31)

**Command (Chief 7):** Go Tower 23 Alpha

**Tower 23 A:** I'm on the Charlie side, [short pause] with the injured firefighter. That's gonna be Tower 23 Charlie, with a small puncture wound.

**Command (Chief 7):** Copy, uh, Dispatch you copy? Tower 23 Charlie, and, uh, I'll be, uh, lettin' you know what the, uh, disposition, of him is

**Dispatcher:** Copy that sir.

**Tower 23 A:** And Command, he's being loaded on the pram right now. We'll be evacuating shortly.

**Command (Chief 7):** Copy

*Engine 23 and Rescue 1 are assigned primary search on the main level (the last victim has not been accounted for yet) and within one minute find the victim in their hospital bed covered in debris. Engine 23 reports this to D-07 face-to-face and Rescue 1 goes in to pull more ceiling.*

**Command (Chief 7):** Uh, all units in the inside the building, let's come on out and rehab. Come on out and rehab, and uh, that way we can uh, leave the scene for fire investigators. (1948:00)

**Rescue 1C:** Charlie/Delta Rescue, copy.

*The scene is under control at this time. There is an extended investigation by arson due to the fatality. Crews on scene perform various post incident overhaul duties for the next 4 hours.*

**Command (Chief 7):** Truck 16 watch that hole in the roof on the second floor as you're exitin'. Should be in the Bravo/Charlie corner [takes breath] Also watch the stairs, stairs are burnt out.

**Truck 16A:** [on air] [interference] Truck 16 copies. [3 second Mic key up, no speech] (1949:16)

**Dispatcher:** Rescue Delta from Dispatch. [beeping in background] Emergency [short pause] Activation [Mic key up, indiscernible speech]

## Operations

**Rescue 1A:** Rescue Alpha, we copy.

**Command (Chief 7):** Ok, all units on that second floor, let's go 'head, and uh, exit the building, and rehab. (1951:03)

**Truck 16A:** [on air] Truck 16 copy and our [takes breath] secondary on the second floor is complete. It's negative.

**Command (Chief 7):** Second floor, complete. Negative secondary. Copy that. Also, all units, all units when you, uh, report over to, uh, Airlight to fill bottles, or if you're already filled bottles please check in with EMS supervisor for, uh, medical evaluation. [2 second mic key up, voice saying uh-oh] (1952:53)

**Command (Chief 7):** Yeah, just for the notifications, Tower 23 Charlie was transported by Denver Health Ambulance Paramedics to, uh, Denver Health and Hospitals for evaluation.

**Dispatcher:** Copy that sir. I'll put it in the notes.

**Command (Chief 7):** Dispatch, Stanford Command on Seven. (2038:47)

**Dispatcher:** Go 'head sir.

**Command (Chief 7):** Yeah, for your information, uh, we're gonna go ahead go under control at this time. We do still have a few hot spots, uh, I'm gonna be releasing a few of the first in companies, holding, uh, several other companies, for, uh, a, uh, good amount of time.

**Dispatcher:** [beeping in background] Rescue, your emergency Delta radio's going off.

**Rescue 1A:** Copy, that's a wet radio, we're gonna go 'head and shut it down and we'll replace that with, uh, our E radio E.

**Dispatcher:** [beeping in background] message received.

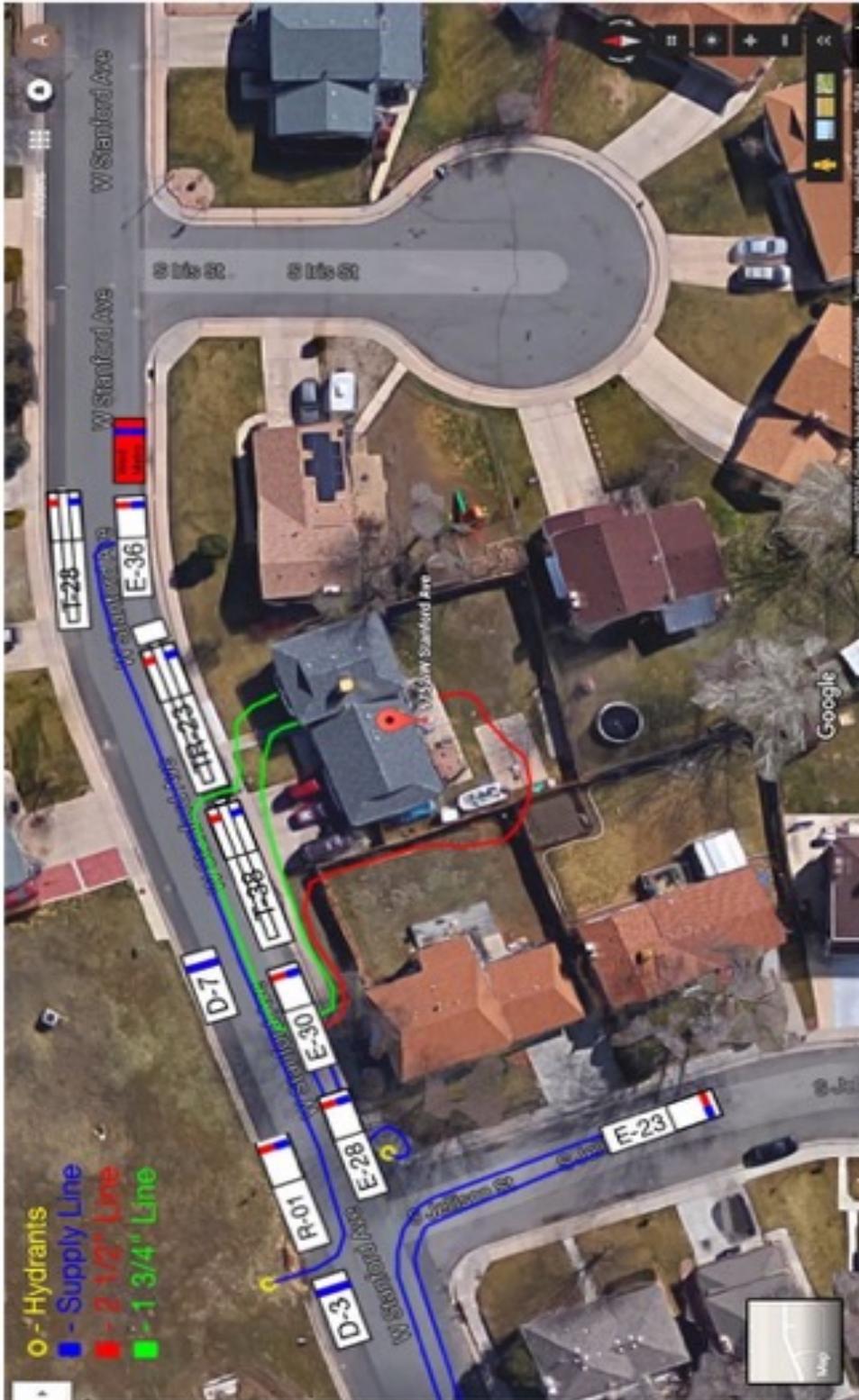
**Command:** And also Chief 7 will be in service, and Stanford command is terminated.

**Dispatch:** Thank you for the update. END

TRANSCRIPT

This is a partial account of radio communications. The entire audio version of the event can be obtained through the Denver Fire Dispatch for a limited time.

# Rig Placement Map



## Recommendations

### Observation 1:

Communications demonstrate that Incident Commander assignments were not clear.

Denver Fire Department Standard Operating Guidelines 2110.01, 2110.02, 2111.01, 2111.02 National Incident Management System, Department of Homeland Security 2008 edition.

### Analysis:

Incident command should ensure appropriate coordination of the actions of on-scene companies by providing well-defined assignments based upon the specific conditions encountered. .

### Recommendations:

1. After conducting a Risk versus Benefit Analysis to formulate an incident action plan, Incident Commander assignments should be made in order of tactical priorities associated with first – life safety, and second – property conservation.
2. Each assignment made should have clear objectives relayed to company officers. Orders should be repeated back to ensure understanding and to minimize freelancing and self-assignment.
3. Only one tactical assignment at a time should be given to a unit.
4. To ensure appropriate coordination of actions and clear assignments, consideration should be given to:
  1. a. Providing an intense training program for Incident Command that includes defining terminology, appropriate tactics, command system usage (IPADS?) and tactical benchmarks.
  2. b. Assigning Field Incident Technicians/Chief's Aids to be utilized as aides inside the Incident Command Post.
  3. c. The development of a stand-alone Standard Operating Guideline for Incident Command.

### Observation 2:

Lack of timely RIT team assignment

### Reference:

DFD Standard Operating Guideline 2110.01

Rapid Intervention Team NFPA 171 OPS 136-2011 PIA 15-1

### Analysis:

A RIT team should be on scene, assigned, and in place within 8 minutes of initial 911 call to ensure the team is in a state of readiness until the Incident Commander determines that the RIT is no longer needed. If the Incident Commander uses the assigned RIT team for another assignment, a new on-scene RIT team should be immediately assigned to ensure a RIT is always available for immediate search and rescue.

### Recommendations:

1. The incident commander should be required to establish a clear, on scene, RIT team within eight minutes of the initial 911 call. Reassignment of RIT companies should continue to be discouraged.
2. The reported loss of a firefighter should trigger a May Day, and tactics should immediately include assignment of the RIT team.
3. To ensure the objective of having a fully equipped rescue team on scene and in a ready state to deploy, consideration should be given to:
  - a. Providing in service training for all companies and District Chiefs, emphasizing RIT discipline, tools, and considerations
  - b. Providing training at the command level regarding the purpose and importance of having a clearly defined RIT company ready to respond.

### Observation 3:

Multiple uncontrolled PASS devices sounded in full alarm at various times and locations throughout operations.

### Reference:

FD707 report Member interviews

Audible in dispatch recordings

### Analysis: Inadvertent PASS activation (manual or timeout) could:

1. Potentially mask an actual firefighter in a distress situation.
2. Cause RIT team activation and unnecessarily place personnel in an IDLH environment.
3. Misallocate resources.

### Recommendations:

1. Conduct a department wide refresher class on SCBA/PASS function and proper utilization, which includes CMCB FF1 P-07, P-08, SR-04, and SR-05.

## Recommendations

### **Observation 4:**

95 GPM Nozzle used as pre-connected interior attack line.

**Reference:** FD707 report

Member interviews

### **Analysis:**

Several Ready-Reserve apparatus have been equipped with 95 GPM nozzles and in-line foam educators. These nozzles were intended to be used for Class-B foam operations. Due to a lack of standardization, the hose loads of various ready-reserves may be inconsistent. Without a thorough inventory of an apparatus, it is possible that these nozzles may be used in a role for which they were not intended.

### **Recommendations:**

1. Ensure all 95 GPM nozzles are removed from all apparatus per OPS-003-2016
2. Ensure standardization of Ready-Reserve apparatus, i.e.... hose loads, tool layouts, etc...
3. Create Department wide formalization of checkout/check-in procedures for Ready-Reserve apparatus, including inventory and documentation.
4. Evaluate the Ready Reserve fleet to assess readiness for emergency recall applications where equipment from front line apparatus is unavailable to supplement equipment not found on Ready Reserve apparatus.
5. Provide additional training to members so that all members understand the purpose of Ready Reserves and that Ready Reserves do not have the full complement of front line equipment.

### **Observation 5:**

A member of Tower 23 was transported by ambulance to DHMC after sustaining an injury during fire ground operations and the rest of the crew remained on-scene and continued to work.

**Reference:** FD707 reports

DFD SOG 1014.0 Section V. Executive Order #65.

### **Analysis:**

An injured member of a crew may also negatively impact other crew members.

### **Recommendations:**

1. Create a policy which provides that when a member is transported by ambulance with an injury while on duty, that member's company should go out of service and be permitted to accompany the member to the hospital.
2. Consider creating a Standard Operating Procedure to address how notification, transportation, and assistance to the family of the injured member will be addressed.
3. Ensure that when a member is transported to the hospital, a page is sent to the Union Health and Benefits Director and the Appointed Member of Administration as soon as reasonably possible.
4. Consider whether updates should be given to the members of Operations through dispatch concerning the member's condition after receiving permission through the Chain of Command via Vocal Alarm.

### **Observation 6:**

Helmet Camera Technology is not available for use on the Denver Fire Department

### **Reference:**

Fire Ground Operations

**Analysis:** Helmet camera technology allows for small, high-resolution units to be readily available. High-resolution video and audio could be extremely helpful in post incident analysis, arson investigation, and training purposes.

### **Recommendations:**

1. Consider a Standard Operating Guideline that authorizes the use of helmet cameras for the purposes of post incident analysis, arson investigation, and future training as determined appropriate by the Operations Division and Safety and Training Division.

## Recommendations

### **Observation 7:**

Current online radios are not water and shock resistant.

#### **Reference:**

Harris Radio Manual

#### **Analysis:**

After being exposed to water during fire ground activities, several members reported radio issues, including an inability to transmit. This led to erroneous activation of the RIT team to find a potentially lost member.

#### **Recommendations:**

1. To ensure consistent and accurate communications, we recommend consideration be given to purchasing radios which are water, heat and shock resistant. Harris and other manufacturers have models available that meet Mil-STD-810G (military shock and heat resistance ratings) and also IP68 (full water immersion) standards.
2. We note that DFD currently uses an intrinsically safe Harris radio system for their companies at Denver International Airport

### **Observation 8:**

MDT Maps and Display of Incident Notes were not displaying an accurate street level map of the incident. Also, the

#### **Reference:**

Denver Fire Department Dispatch

#### **Analysis:**

Inaccurate map display resulted in responding apparatus to inaccurately determine there was only one access point into the neighborhood. Additionally, the rapidly updating notes make it extremely difficult to scroll through all pertinent notes that have been entered.

#### **Recommendations:**

1. A system should be put in place to allow members to enter MDT map updates quickly and efficiently as they are discovered similar to our current "Safety Concern" system on the NFIR.
2. The issue of the way the notes are displayed on the MDT should be reviewed to determine if a solution could be implemented that allows responding companies to more easily read through all the notes on rapidly evolving incidents.
3. Consideration should be given to beta testing the new Tablet Command software on various apparatus throughout the city.

### **Observation 9:**

Limited number of thermal imaging cameras (TIC) available.

#### **Reference:**

Denver Fire Department Operations

#### **Analysis:**

Due to the limited number to TIC available, engine crews operating inside the structure were turned back by high heat levels and were unable to immediately determine the main body of fire without assistance from truck crews operating interior.

#### **Recommendations:**

1. Consideration should be given to issuing a TIC to each engine crew. This would help with determining fire size and location and to support assist with crew safety.
2. To further promote crew safety, each truck crew should be issued a total of two TICs since many initial truck crew operations involve dividing tasks between two teams of firefighters.

**Observation 10:** A West Metro ambulance and chief were on-scene prior to the arrival of any Denver Fire Department units at the scene.

#### **Reference:**

Denver Fire Department Operations

#### **Analysis:**

Communication with agencies could be improved by creating mutual aid training, procedures and communications.,

#### **Recommendations:**

1. A committee could be formed to reach out to surrounding departments including, but not limited to, West Metro, South Metro, Aurora, and Cunningham in order to create mutual aid training, procedures, and communications for incidents involving multiple agencies – especially in boundary areas.

## Recommendations

**Observation 11:** Dispatch could operate in a more uniform manner to assist on scene companies

**Reference:**

Dispatch interviews, NFPA 1061, dispatch recordings, outside agency research

**Analysis:**

DFD Dispatch Manual needs updating due to outdated and missing material in current manual.

Consistent, periodic training needs to be provide to ensure effective communication. There appears to be a need for promoting scripts and/or flow charts for consistent information being received and given by dispatchers.

**Recommendations:**

1. certifications that go along with NFPA 1061 and use of a JPR system. This may enable all employees to keep current on skills which are not regularly used.
2. Newly assigned personnel should go to the shift they will be working on upon transfer to Dispatch to ensure that such personnel and shift members work and train together and build crew cohesiveness.
3. Consider creating flow charts and line of questions for calls such those created by International Academics of Emergency Dispatch (IAED) for the purpose of call taking as well as dispatching appropriate resources to incidents.
4. When a Mayday or back out order is given Dispatch should clear the air with the "tone" and then repeat the back out or mayday over the given channel.
5. Training and use of the hold order should be updated and implemented when needed, such as placing the hold ordered in effect when a fire or incident surpasses a first alarm.
6. Dispatch should be required to contact the Shift Commander or District Chief of the company or companies the Move Up Module suggests for movement before moving these companies.
7. To ensure effective communication, company officers should remain in their first in areas when fires or large incidents are working in the city and should be ordered not to move into other areas unless directed to do so by the Shift Commander, District Chief, or Dispatch.
8. Consideration should be given to changing the schedule for the Captain in Dispatch to allow the Captain to attend meetings and provide more administrative oversight. A Lieutenant should replace the Captain on the shift schedule.

**Observation 12:** On scene operations could benefit from continued education.

**Reference:**

PIA 15-1

PIA 16-1

**Analysis:** An incumbent training program including standards and documentation needs to be put into place to insure safe operating conditions and continued incident stability.

**Recommendation:**

1. The Denver Fire Department should strongly consider staffing a full-time, dedicated, incumbent focused arm of the Training Division, with a focus on topics such as : RIT teams, decision making, strategy, and other hands on fire fighting classes.