



**Oakland Fire Department
Origin and Cause Report**

Incident # 2016-085231

December 2, 2016

1315 31st Avenue

March 18, 2017 edited May 11 2017

Fire/ Arson Investigation Unit
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SUMMARY:

On Friday, December 2, 2016, at approximately 11:24 PM, Oakland firefighters responded to a reported fire at 1315 31st Avenue (commonly known as the Ghost Ship Warehouse). Upon arrival, fire crews found heavy smoke coming from the two-story warehouse. The building was an occupied structure divided into live/work spaces. The space was also used that evening for a music event being held on the second floor. The fire progressed to a third alarm assignment requiring approximately 52 firefighters to bring it under control. The estimated dollar loss of the structure is \$ 1,235,000. ¹ The fire resulted in 36 fatalities.

PARTICIPATING FIRE INVESTIGATORS:

Weldon Clemons	Oakland Fire Department
Maria Sabatini	Oakland Fire Department
Javan Smith	Oakland Fire Department
Cynthia Chang	Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF)
Brian Parker	Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF)
Barbara Maxwell	Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF)
Jeremy Neagle	Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF)
Michael Abraham	Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF)
Adam St. John	Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF)
Michael Marquardt	Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF)
Jeffery Laverman	Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF)
Melvin Robin	Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF)
Wayne Dutchover	Alameda County Arson Task Force
Nick Bartlett	Alameda County Arson Task Force
Gina Stewart	Alameda County Arson Task Force
Greg Hughes	Alameda County Arson Task Force
Paul Balzouman	Alameda County Arson Task Force

¹ \$125 per square foot replacement cost, total square footage: 9,880

Note: In addition to Oakland Fire Department personnel, mutual response firefighters from neighboring agencies, and members of the Alameda County Coroner's Bureau assisted with debris removal.

WEATHER CONDITIONS:

www.wunderground.com reported the following weather conditions in Oakland, California on December 2, 2016, at approximately 10:53 PM: the temperature was 48.9 degrees Fahrenheit, the dew point was 46 degrees Fahrenheit, humidity was 59%. Visibility was 10 miles and the winds were variable at 3.5 miles per hour.

PROPERTY OWNER:

The Alameda County Assessor lists the Chor N. Ng Trust as owner of 1315 31st Avenue Oakland, CA 94601. Parcel # (APN): 025-0690-010-00. The property is managed by Kai Ng. Mr. Ng can be reached at [REDACTED].

The warehouse leaseholder [REDACTED] Mr. Derrick Ion Almena: [REDACTED].

SCENE SECURITY:

The integrity of the scene was maintained by the Oakland Fire Department, The Bureau of Alcohol, Tobacco, Firearms and Explosives, the Oakland Police Department and the Alameda County Sheriff's Office throughout the scene investigation.

LEGAL PRESENCE:

The fire scene investigation was conducted under the authority of the Oakland Fire Department. A search warrant was obtained and signed on December 4, 2016, by Alameda County Superior Court Judge Kimberly Colwell.

INSURANCE:

Commercial Industrial Buildings Owners Alliance (CIBA) Insurance Company insured the building. Their business address is 655 North Central Avenue, Suite 2100, Glendale, CA 91203. The phone number is (818) 638-8525. The policy number is P00028927.

FIRE PROTECTION SYSTEMS:

The building was not equipped with an automatic fire suppression system (sprinklers) or an automatic fire detection system. Several fire extinguishers were located throughout the warehouse. One battery operated smoke detector was found in the debris.

FIRE DISCOVERY:

The first 911 call was from an occupant of 1315 31st Avenue, Carmen Brito, using cellular phone number [REDACTED]. People fleeing the warehouse also ran to Oakland Fire Department Station #13, located at 1225 Derby Avenue, which is one block, approximately 472 feet according to Google maps, from the fire building. According to firefighters, people were knocking on the fire station doors when the firefighters were getting ready to respond to the fire, having received notification from Oakland Fire Dispatch. Carmen Brito told investigators she was in her living space, as she had gone to bed around 10:00 PM. Brito stated around 11:20 PM. she woke up and noticed her space was filled with smoke and she could see an orange glow outside of her living space. Brito stated she got up and put on her shoes and coat but felt like her movements were sluggish. Brito stated she walked down her steps and noticed the living space of “Swan” (Leah Vega) and “Dragon” (David Calvera) was on fire. She believed the flames were approximately 8 feet high. Brito stated she went to the front of the warehouse and called 911. (See “Witness Interviews” for additional information)

FIREFIGHTER OBSERVATIONS:

(The front elevation of the building faces south and was denoted the “A-side.” Further reference to B- C- and D- sides is clockwise from that cardinal point.)

On Thursday, December 8, 2016, Oakland Fire Department (OFD) Firefighter (FF) Brooke Meredith and OFD Paramedic Brian Hicks, met with fire investigators to discuss their observations as the first-in firefighters at 1315 31st Avenue.

In summary, their observations are as follows:

- They heard dispatch announcing a fire at a warehouse on 31st Avenue. As they were getting ready, they also heard people knocking on their doors, yelling about a fire. Upon pulling out of the bay, they could see smoke coming from the area of the warehouse one block away.
- Engine 13 pulled directly in front of the rollup door at the front of the warehouse, into which a smaller man-door had been cut (only the man-door was open, left side of rollup door, and partially ajar/not fully open). Some people were outside the warehouse, stating there were still people inside. However, nobody seemed overly excited or distraught.
- They saw thick dark grey smoke coming out the first-level windows, as well as from the top of the rollup door. A small amount of smoke was coming out of the 2nd level window at the A/B corner (top-left). They called into the man-door for a response from people possibly inside but got no answer. They then closed the man-door to prevent oxygen from further fueling the fire. Paramedic Hicks said he never heard anything but crackling from the fire (he was in front of FF Meredith).

- Upon entering down low on the ground through the man-door, they encountered flames and sprayed a narrow stream of water upward. They noted when the water droplets descended, they weren't too hot. Smoke was at about face level as they crawled in on their hands and knees. They saw a glow behind, and to the right of, a large statue located just in front of the man-door.
- They got to what they described as a wall in front of them, then made a left turn, encountering a hallway on their right lined by pianos. There was thick smoke down the hallway and they could see flames in front of them to the right, behind what they made out to be a piano. This was past the front stairs along the east wall.
- They were flowing water intermittently. They felt they were knocking down the flames, but not the seat of the fire because the ceiling kept igniting. The fire was also getting behind them [meaning it was getting up and over them heading toward the front of the building].
- They then lost some pressure, thought to have been when they switched from engine-supplied water, to hydrant-supplied. They then got low-air alarms, and had to withdraw. Both recalled having to follow the hose out, as visibility was poor due to smoke conditions.
- When they went back in, they chocked the man-door open because it had been swinging freely. They entered with the crew from Engine 17, focusing on the kitchen area along the left side immediately after entering the man-door. At that time, they were operating a 2.5" hose line.
- The Chief then gave an evacuation order.

Battalion Chief James Bowron's observations:

- He had a view from the A/B corner (southwest). There was heavy smoke from the A-side (south) and B-side (west), and he saw no doorways along the B-side. He thought victim survivability was low due to the smoke conditions he observed, which he further described as heavy pressurized grey smoke pumping out of the structure. The crews were utilizing large diameter hose at this point, and then he saw the B/C corner (northwest) start to take off. He said the majority of working fire was initially occurring at the A/B area, and that the 2nd floor had a tremendous amount of smoke, but no fire visible. He recalled the fire quickly reaching a 2nd alarm, and then a 3rd alarm.
- Engine 23 had 2.5" lines on the B-side where a large lot was located. The lot was full of cars, trees, junk, a makeshift RV "house," etc. He said they focused on limiting the exposures along this side. They also found a "chipped out/carved out" door along the mid-way point of the B-side wall.
- Truck 2 and Truck 6 worked the roof and were the "vent group." He recalled a large truss along the roofline, and that they cut large holes to serve as ventilation points. The fire had not vented through the roof at that point.

- The next thing he recalled was the fire flashed out the A-side (south), and 3 windows blew out from around the A/B (southwest) corner, from what he called a small smoke explosion. There was then heavy pressurized smoke venting through the roof, and he saw the second floor light off.
- At this point they all pulled out and went defensive. They set up two ladder pipes flowing approximately 1,000 gpm each. They also fought the D-side (east) exposure, which shared an adjoining wall with the fire building, for about 30-40 minutes, because they realized a mezzanine of sorts connected the two spaces, and they wanted to prevent further extension.

SYNOPSIS OF INITIAL SCENE INTERVIEWS:

Mr. Kai Ng [REDACTED] stated his family has owned the building where the fire occurred and the adjoining structures for about 25 years. He stated the warehouse is solely leased to Derrick Ion (Almena), who has sublet spaces to several artists for the purpose of working and hanging out. He stated Ion was informed no one he sublets to is supposed to live there. He stated Ion has leased the space from him for a period of about 2 ½ years. Ng stated about 3 years ago he invested about \$30,000 on electrical upgrades in the warehouse and was unaware of any current electrical problems. He stated he has not physically been inside the structure for at least 1 ½ years. Ng stated his mother is the listed owner but he manages the property due to language barriers.

Anthony Penrault [REDACTED] stated he was next to the patio door (west side) when he began to hear raised voices. He stated he heard people yelling “fire” and when he investigated, he saw flames touching the ceiling of the first floor. He stated he tried to use an extinguisher but it was no use. He stated “Bob” told him to get out and he evacuated. He stated he had been familiar with the building having electrical problems like power outages for a while. He thought the fire may have been associated with that.

Nikki Kelber, DOB: [REDACTED], [REDACTED] stated after hearing the sound of the fire, she observed flames coming from the rear of the building, walking across the ceiling. Kelber stated she saw heavy black smoke as well and she opened some of the windows in her space, which is located on the lower level of the building in the front. She stated she hoped that was the right thing to do. She stated the power immediately went out as she was evacuating. Kelber stated 25 people lived in the building.

Bob Mulé, DOB: [REDACTED], [REDACTED] stated he and others were having a party, which started at about 9:00 PM but started slowly. He stated the party started to pick up at about 10:30 - 11:00 PM. He stated while he was at the front door he believed he had let in at least 40 to 50 people. He stated he was notified about smoke at about 11:35 PM. He stated he smelled smoke near a light outlet with an adapter connected to the lamp. No fire was detected. He stated he and “Farris” (Aaron Marin) began disconnecting plugged in appliances from electrical outlets. He

stated due to previous electrical issues, like power outages, they began to disconnect things that were energized in that area. He stated they began to look for the source of the smoke. He stated in the left rear corner (northwest) of the structure, he saw flames. He started yelling for people to get out of the building. He stated an occupant in the rear, Pete Wadsworth, had broken his ankle and he was trying to help him get out but he (Wadsworth) was too heavy. He stated he was not sure if Pete was able to get out.

Chris Nechodom, DOB: [REDACTED] stated he was sitting on a couch when he heard people yelling fire and he evacuated the building. Nechodom offered nothing further.

Carmen Brito, DOB: [REDACTED], [REDACTED] stated she lived in a space on the lower level in the rear of the warehouse (northwest). She stated she woke up to thick black smoke. She said she shouted for help and saw flames in the space next to hers. She stated the flames were in the area where a refrigerator was recently installed, against the wishes of many of the tenants, due to the many electrical problems in the building. She stated when she saw the glow, and then the flames, she put on her shoes and began to evacuate. She stated seconds after she started to leave the power cut off. She stated all of the different spaces were partitioned with wood that is treated with anti-aging stain. She stated each space had a lot of electronics and power outages. She stated after the refrigerator was added two power outages occurred. She stated the fire started right where the refrigerator would have been.

SYNOPSIS OF FORMAL WITNESS INTERVIEWS:

On December 3, 2016, Bob Mulé, who lived at 1315 31st Avenue in Oakland, California and was at the location when the fire started, provided the following:

Mulé stated he had just returned to his living space after being in Zach (Zachary Pinto) and Lilo's (Liona Tuuhetoka) space when Ferin (Aaron Marin) came in and said he thought he smelled smoke. Ferin and Mulé went to a light fixture on the landing of the northeast stairwell. Mulé unplugged some lights that were plugged into the light fixture. Mulé then noticed a haze and went to check the different levels of his living space and found smoke in the second level. Mulé then went to the first level and saw a glow coming from the area between the back of Swan's (Leah Vega) trailer and the north wall of the structure.

Mulé obtained a fire extinguisher from Zach and Lilo's space but was unable to work it. Mulé then heard another resident, Pete (Peter Wadsworth), and attempted to help him from the building because Pete's ankle was broken. Mulé stated the fire was intense and he was forced to leave Pete. Mulé showed investigators the back of his jacket, which was burned.

On December 12, 2016, investigators interviewed Aaron Marin. Marin was at 1315 31st Avenue visiting Derick Ion Almena and had been staying there for about two weeks prior to the fire. Marin stated he had been upstairs, in the back studio, when he smelled smoke, and went

downstairs (using the back stairwell) where he met up with Mulé. Marin and Mulé checked out the light fixture on the landing of the back stairwell and it felt hotter than normal. Mulé took out the light bulb, and while using the light from his phone, they could see “light” smoke. Marin stated he ran upstairs and Mulé ran downstairs. Marin stated there was smoke in the upstairs, rear studio, and when he went into the area where the party was located, he noticed flames by the DJ’s turntable. Marin stated he then noticed that the flames were coming from under the floor. Marin stated he tried to use a water bottle to put out the flames but realized it wasn’t going to help. Marin stated people were then starting to realize there was a fire and started making their way to the front staircase. Marin stated he also started to go to the staircase and noticed people coming back up stating that the staircase wasn’t good. Marin stated he knew the kitchen had windows and he started to yell, “Kitchen, Kitchen!” Marin stated at that point the lights went out. Marin stated the smoke was much thicker and it was getting harder to breathe. Marin stated the kitchen was blocked by a blow up screen, but he knew the kitchen was located in that area, so he just felt his way to the window. Marin stated he got the window opened and yelled for a ladder. Marin stated Mulé and another person were attempting to get in the locked gate and get a ladder to him but he decided to just hang and drop. Marin stated he told the people on the outside there were more people inside and they did put up the ladder by the window, but no one else came through the window. Marin stated if a person hadn’t been in the space before they would not have known there were windows because there were items in front of the windows so the windows weren’t visible.

On December 7, 2016, investigators interviewed Max Harris. Harris resided at 1315 31st Avenue in Oakland, CA for over two years. Harris stated he was kind of seen as the “creative director” for the tenants. Harris stated he would collect rents and handle any disagreements between tenants. Harris also stated if something didn’t work, he would be the person the tenants came to for help. Harris stated they didn’t allow smoking, candles, incense, or space heaters in the warehouse. Harris stated they did have electrical problems and had complained to the landlord about the issue. Harris stated the warehouse was supplied electricity from the body shop next door so if one of the fuses blew, they would have to wait for the body shop to open to restore power. Harris stated the breaker and the fuses “popped” a few days prior to the fire.

On December 9, 2016, investigators interviewed Carmen Brito, who resided at 1315 31st Avenue in Oakland, CA. Brito was at home on the night of the fire. Brito stated she went to bed around 10:00 PM and awoke at around 11:20 PM. Brito stated she thought she woke herself up coughing. Brito stated she noticed her space was filled with smoke and she could see an orange glow. Brito stated she got up and put on her shoes and coat but felt like her movements were sluggish. Brito stated she walked down her steps and noticed the front wall of “Swan” (Leah Vega) and “Dragon” (David Calvera’s) living space was on fire. She believed the flames were approximately 8 feet high. Brito stated she went to the front of the warehouse and called 911. Brito believed about a minute after she exited the building the lights went off. Brito also confirmed they had lost power a day or two prior to the fire.

On December 4, 2016, investigators interviewed Adam Kennon, who resided at 1315 31st Avenue in Oakland, CA. Kennon stated he was on the patio when he heard someone yell, “fire.” Kennon stated he ran into the warehouse to see what was going on. Kennon stated he was standing by Hunter’s space and looked down towards Swan (Leah Vega) and Dragon’s (David Calvera) space. Kennon stated he could see a large orange glow with occasional flames coming out of it. Kennon stated he could see the door to their space and knew they were not at home because it was locked on the outside. Kennon stated he and a few other people left through the west door and then squeezed through the fence gate to get out to the street. Kennon stated he then ran to the fire station to let them know about the fire.

On December 13, 2016, Leah Vega (Swan) came to the scene to meet with investigators. Vega and her boyfriend, David Calvera (Dragon) had also met with investigators at the scene location on the evening of December 5, 2016. Vega and Calvera both resided at 1315 31st Avenue in Oakland, California.

Both Vega and Calvera were not at home at the time of the fire. They work for [REDACTED] and were at an event that evening. Vega estimated they left their space at approximately 2:00 PM on the afternoon of the fire. Vega stated because of the electrical issues the warehouse had been having, they unplugged most things in their living space when they leave. They had two refrigerators, one small and one larger, plugged in when they left. There was also an extension cord that went into their trailer and was connected to a second extension cord that had two lights plugged into it. Vega believed the lights were off. In their “office” space, Vega said there might have been a battery pack charger for a new drill she had recently purchased.

Vega and Calvera explained how they had their living space set up and what was plugged in. They explained there was one receptacle mounted on a wooden post in the kitchen area (west side of the space) and another receptacle hanging down from the ceiling (east side of the space). Vega stated they tried to unplug anything that wasn’t being used and had purposely bought power strips that contained a switch, so if something went wrong, it would turn off. Vega and Calvera stated they were not sure where the power for their living space came from because previous tenants constructed the spaces prior to their occupancy. They didn’t know if some extension cords were plugged directly into a receptacle or daisy chained from another extension cord. Calvera stated most people didn’t know what was behind the walls of their spaces.

BUILDING CONSTRUCTION:

The affected structure was a 2-story, concrete block warehouse built in 1930. According to public record, the combined square footage of both floors is 9,880 sq. ft. The front of the building faced 31st Avenue and was denoted the south direction, or the “A-side.” All reference to direction is clockwise from that cardinal point. It should be noted that the exterior dimensions did not form a complete rectangle. Those dimensions were as follows:

A-side (south), approximately 59'1"
B-side (west), approximately 99'2"
C-side (north), approximately 48'8"
D-side (east), approximately 94'1"

The roof was a wooden gable, built upon steel trusses, with the ridgeline running in a north-south orientation, covered in composite rolled roofing material. A large garage-type metal roll-up door was situated on the ground floor just east of the midline on the front (south) of the structure, approximately 9'8" in width. Within the roll-up door (positioned on the left side) was a single man-door that functioned as the entrance to the warehouse. A single man-door was also situated approximately midway along the B-side (west) wall. It allowed occupants to access an empty lot where a smoking area had been designated.

The interior of the structure consisted of steel frame and wooden structural members. The ground level flooring was concrete. The second level flooring was constructed of wood. The interior dimensions were as follows:

- ground floor to bottom of truss supporting 2nd-floor, approximately 11'6"
- truss itself, approximately 13"
- ground floor to peak height of the roof, approximately 20'6"

ELECTRIC SERVICE:

On December 9, 2016, investigators performed an examination in conjunction with Electrical Engineers of the Bureau of Alcohol, Tobacco, Firearms and Explosives. The summary follows:

Fixed Electrical Components Supplying the Structure:

Electrical service to the building was provided via an overhead service drop from a pole (#23480) near the intersection of International Boulevard and 31st Avenue. From the pole, conductors supplied a main electric service panel, protected by 400 amp fuses, inside a meter room on the second floor of 3071 International Boulevard - the Boost Mobile Store. In this room were two meters. Meter # 1009481008 served 1315 31st Avenue and an adjacent auto shop marked "1309" 31st Avenue. A second meter, # 1009657850, served 3071 International Boulevard.

From the main electric panel in the meter room of the Boost Mobile Store, electric supply traveled through conduit and subpanels to 1315 31st Avenue. The main subpanel for 1315 31st Avenue was located in a rear room on the ground floor of the auto shop marked as 1309 31st Avenue. In this main electric subpanel, engineers identified two-2 pole 50 amp circuit breakers in the tripped, or center position. Handwriting on the inside of the panel door identified these as,

Satya Yuga Main s [sic] and *Satya Yuga Upstairs*. The service continued from this main subpanel through conduit to the west interior wall of the auto shop, at which point service entered the fire building (1315 31st Avenue); each of the two floors of the fire building was served by an additional subpanel. The first floor and second floor subpanels were located on the east wall of the fire building at the northeast corner of the building. These panels were both heavily fire-damaged.

Following are observations of the aforementioned electrical service:

- The events that tripped the two-2 pole 50 amp circuit breakers in the main subpanel resulted in the loss of electric supply to the entire fire building.
- The visual examination of the entire configuration revealed modifications to the electrical systems, completed at mostly unknown dates between original construction and the time of the investigation. Within the main electric subpanel for the fire building, located on the ground floor of the auto shop next door, conductors in the subpanel were dated November 2014.
- In a second floor room above the auto shop, in a portion of the electric service not related to the fire building, investigators observed a former electric feed not currently in use and not connected to a meter. Statements from some occupants who spoke of a former “pirated” electric supply for an alleged marijuana grow were probably referring to this illicit configuration. Its presence was determined to be of no consequence in this event.

Interior Fixed Electrical Systems of Building of Origin:

On the first floor of the fire building, electrical conduit containing insulated conductors and outlets were found along the masonry walls of the building. The occupant who lived in the area of origin (the northwest area of the first floor) stated the outlets were not in use, and she says she was not even aware of their presence before the fire.

As part of the scene examination, the conductors were removed from the conduit and examined. The portion most heavily affected by heat was located along the west wall near the northwest corner of the building, in an area the occupants described as a small office. In this area, the conductors inside the conduit were exposed to heat sufficient to consume their insulating material. There was no evidence of arc-melting on the conductors.

Non-Fixed Interior Electrical Systems Within Building of Origin:

Instead of using the fixed electrical components of the building, such as outlets, the occupants explained power strips were used to supply electricity to lamps and appliances. The occupants of the area of origin said they used power strips to energize items in their possession. Due to the

crowded, complicated association of the rooms and adjoining rooms, they did not know where all power supplies originated. (See both “Interviews” sections of this report for descriptions of extension cords and power strips in use at the time of the fire.)

In the area of origin, occupants described an overhead light in a small common area just outside their room that was always “on.” The occupants reported they did not know where the power for this light originated. Two heavily damaged temporary power distribution boxes, or “spider boxes,” were found in the fire debris and were observable remains of part of a makeshift system that supplied areas of the building with electricity. Witnesses stated one box was in use upstairs wired directly to the 2nd floor subpanel. The other box was described as a spare, not in use at the time of the fire.

INTERIOR CONDITIONS PRIOR TO FIRE:

Ground Floor:

The main entrance to the ground floor was through the man-door on 31st Avenue. From there, makeshift hallways led erratically deeper into the building. The hallways were not constructed of traditional materials such as drywall-covered, wood-framed walls. Instead, the walls of the hallways were assembled together from aggregates of salvaged and scavenged materials, such as pianos, organs, windows, wood benches, lumber, and innumerable other items stacked next to and on top of each other. (see photo below)



The warehouse was further divided into individual “cubicle” live-work spaces by a conglomeration of makeshift items including but not limited to: wooden studs, steel beams, doors, window frames, bedframes, railings, pianos, benches, chairs, intact motorhomes and trailers, portions of trailers, corrugated metal sheeting, tapestries, plywood, sculptures, tree stumps and tree limbs. Tenants described several live-work units that were constructed of multiple levels to the height of the first floor ceiling. The elevated units were variously described as lofts, perches, and tree forts, constructed of actual tree stumps and large dimensional lumber.

Two rudimentary bathrooms were between the front roll up door and the base of the east wall staircase.

Inside the front door to the west was an area the residents referred to as “the kitchen.” West of the kitchen, in the southwest corner of the building, four people had live-work spaces. (see photo below)



Further into the warehouse, going north along the east wall, there was a tenant whose living space was a small travel camper. To the north of the travel camper, also on the east wall, was another living space. At the approximate middle of the warehouse, there were two recreational vehicles. One was perpendicular to the east wall and the second was perpendicular to the west wall, just to the north of the west door opening. The space between these two vehicles formed another hallway/walkway to the back of the warehouse. A few feet to the north of the vehicles was a raised platform. The platform had been built against the front wall of a travel trailer that extended out, perpendicularly, from the middle of the north wall. The platform divided the

direction of travel to the rear of the warehouse towards more living units at the northeast and northwest areas of the first floor. The northwest area contained four living spaces. The northeast area contained two living spaces and a stairway to the second floor.

Some of the living spaces contained multiple levels. For example, the recreational vehicle along the east wall had a space built on top of the vehicle where the tenant would sleep. The large travel trailer located off of the middle of the north wall had a space above it where an occupant slept. These elevated areas extended to within a couple of feet of the first floor ceiling.

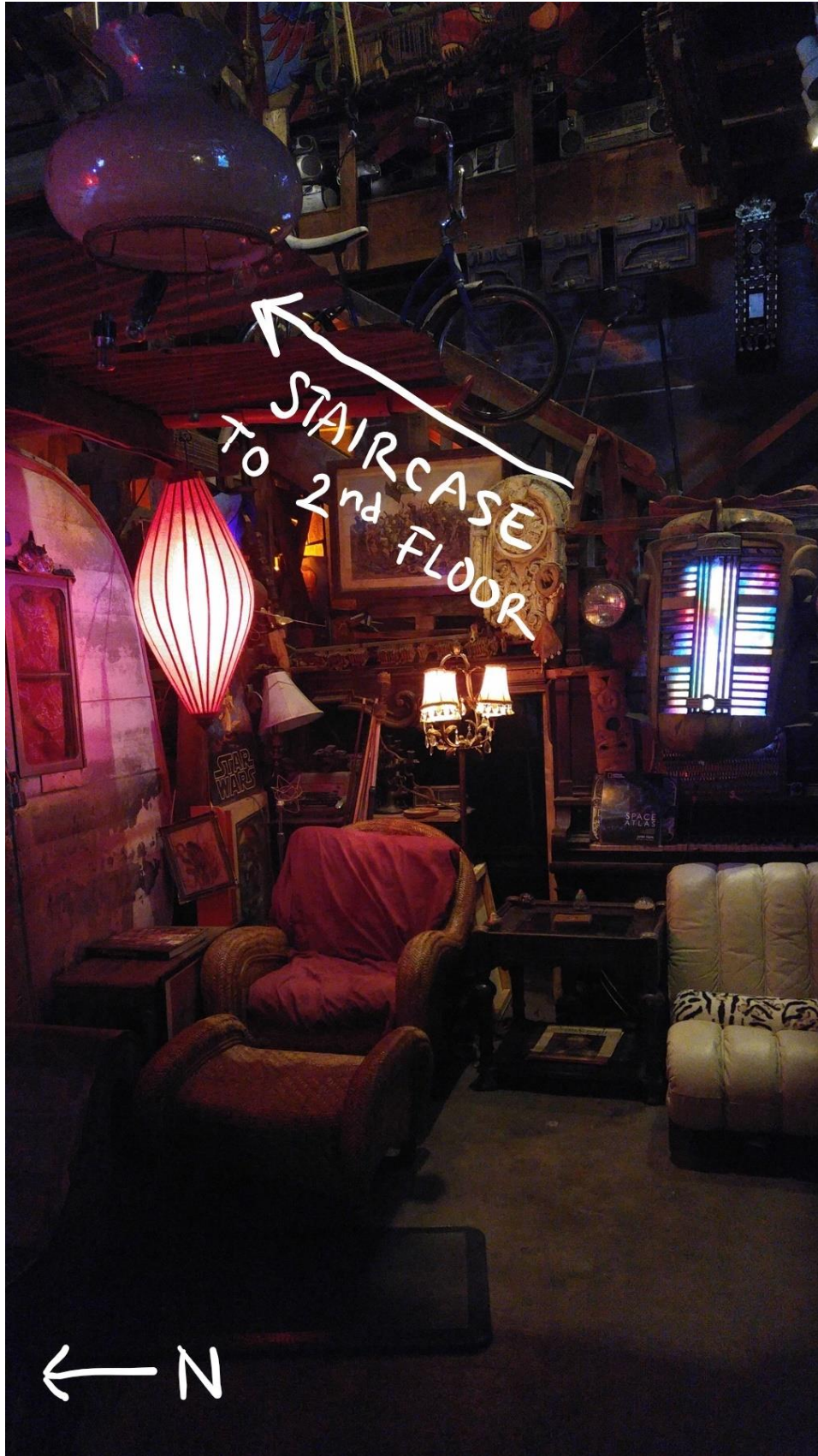
Stairways:

There were two stairways to the second floor.

The front staircase was located along the east wall at the front of the structure. It was constructed of various wooden planks and wooden studs, as well as portions of wooden pallets at its top where it accessed the second floor. One of two bathrooms was elevated slightly off ground level where the lower staircase landing was located. The orientation of the staircase was such that it first led eastward where it bordered the east wall, then turned north (rearward), where it then turned slightly west at the very top of the staircase at the second floor.

(see photos below)





The rear stairway was constructed of wood and located in the northeast corner of the building. A run of stairs ascended the north wall, to a landing against the east wall, and another run of stairs ascended the east wall to a landing on the second floor. Occupants said the second floor access to this stairway was concealed behind contents and furnishings. The electric subpanel serving the second floor was located on the east wall at the top of the stairway.

Neither stairway exited to the exterior of the building.

Second Floor:

The second story contained fewer living spaces and hallways, and an open area for events was the predominant feature. A family lived in a space at the south end and two other tenants were reported to have living spaces on the second floor; one along the east wall and one in the northwest corner. Most of the space was open with areas of couches and chairs for people to socialize. There was an area at the north end of the second floor where musicians or disc jockeys set up when events took place. (See photos below)





EXTERIOR SCENE EXAMINATION:

A systematic approach was used. Examination proceeded from outside to inside and from areas having the least damage to areas with heavier damage with emphasis on recognition, identification and analysis of fire intensity and movement patterns, and in accordance *with NFPA 921 Guide to Fire and Explosion Investigations*.

The exterior scene examination was conducted in a clockwise manner, starting at the front of the building that faced 31st Avenue, denoted the “A-side” (south).

-A-side of Structure/Front (south)

The front of the structure faced 31st Avenue. The exterior wall of 1315 31st Avenue was partitioned into 3 vertical sections, running from top to bottom. Windows were present in each section, on the first and second floors, with the exception of the east section that contained a metal roll-up door, with windows above. The roll-up door contained a man-door. No intact glass was present on either level. There was smoke staining above the windows in the middle section on the first and second floors as well as above the roll-up door. There was minimal smoke

staining above the windows in the east section on the second floor. Minor smoke staining was noted above the windows in the west section of the wall. (See photos below for the layout and location of the openings in the south wall of the structure.)



-B-side of Structure/Left-side (west)

The B-side of the building bordered an open lot containing a large amount of discarded items. A non-permanent structure used as living quarters and fashioned out of various materials was located toward the north (see photo below). Windows were present on the B-side on the first and second levels, along the rear (north) two-thirds of the building. The only window with any glass remaining was the first floor southernmost window. The second floor rear-most (north) window contained metal mesh over the window opening. In the right-most (south) first and second floor windows, the upper pane was in an open position, swung outward from the top hinge.

(Blank Space)



A single door-opening (created by removing concrete blocks from the wall) was present along the ground floor, at approximately the midway point (see below-circled). Fire and smoke damage was heaviest above the middle windows on the 1st and 2nd floors. (see photo below)



Additionally, the fire pattern above the single man-door intersected with fire patterns around the windows above and slightly to the right of the doorway.
(see photo below)



-C-side of Structure/Rear (north)

This was the rear of the building, behind which a parking lot was located. There were no windows or doors on this side of the building. No fire damage was present.

-D-side of Structure/Right-side (east)

This side of the structure was a zero-lot line with the auto shop in the adjacent space and shared a common wall. Some fire extension was observed into the interior of the auto shop, to be discussed in the “Exposure Building” section below.

Fire damage to the exterior surfaces of 1315 31st Avenue is consistent with a fire that originated within the structure. No external causes or heat sources were identified on the exterior of the building of origin.

EXPOSURE BUILDING:

1309 31st Avenue was examined. This is the adjoining structure on the D-side of the building of origin and according to Alameda County records is actually a part of 3073 International Boulevard. Fire damage to this building occurred in an area at its northwest corner, on the second floor. This damage corresponded to an opening between the two buildings. Witness statements indicated at an undetermined date before the fire, a bricked-in window was opened to allow access between the two buildings. Fire patterns around this opening and on the walls of the second floor of the auto shop were consistent with fire and heat originating in 1315 31st Avenue and spreading via normal fire progression to the adjacent building.

INTERIOR SCENE EXAMINATION:

Overview:

The fire in the building of origin was extinguished by firefighters after a prolonged period of free-burning. During the fire, the roof was largely consumed. Parts of the roof that were not consumed were either knocked down into the structure by large quantities of water during the fire attack, or collapsed under their own weight. Fire damage throughout the building was extensive.

Comparative analysis of fire damage to the interior of the structure showed a greater degree of destruction to materials at the north end of the building. Based on fire patterns, fire damage, and witness statements, an area of origin was identified in the northwest area of the building. (“Northwest area of the building” is defined as an area bordered by the east edge of the travel trailer perpendicular to the north wall, the west wall of the building, and then the south edge of the travel trailer.) Access to the northwest area of the building for investigators was only possible with the removal of debris between door openings and this area of interest.

Examination:

On December 3, 2016, Oakland Fire Department Fire Investigators, Deputies with Alameda County Coroner’s Bureau, Alameda County Arson Task Force members and Alcohol, Tobacco Firearms and Explosives Certified Fire Investigators met to discuss how the scene was to be processed, realizing the expediency of victim recovery, while simultaneously maintaining evidence for the origin and cause examination..

The following plan was developed:

Investigators decided scene processing would begin at the 31st Avenue front door and proceed northward for recovery of visible victims on the first and second floors; the victims on an intact section of the second floor would be recovered first, followed by the ground floor victims. Following that, the man-door on the west side of the building would be enlarged to allow

equipment to be brought into the scene as needed. Investigators would then enter the west side opening and process the scene from the west to the east side of the building and then in the direction of the northeast corner, where the back staircase would have been located. Investigators and firefighters would use five gallon buckets to remove debris by hand as victims were recovered and the search for evidence was conducted.

Interior examination started with overhead views of the entire building obtained from the roof of the adjacent structure

On December 3, 2016, entry was made into the 31st Avenue door opening. Directly inside was a large wooden bird-like statue (see photo below.) The statue was intact but sustained heat damage at its top. This statue created an impedance to movement and directed entering occupants to the left. To the left (west) was the room the tenants describe as the kitchen area. This room sustained some heat, soot and water damage but was in relatively good condition. To the west of the kitchen were living spaces.



A portion of the 2nd floor had collapsed into the southwest, first floor living space. Fire patterns in this area indicated the fire traveled from the north end of the building.

To the north of the door opening, left of the statue, was a passageway lined with pianos and other items. These items exhibited some heat damage to upper portions of the contents but the lower level items (pianos, wooden benches, chairs) were intact. To the east was location of the front (south) staircase to the second floor. The bottom steps to the mid -section of the staircase were intact. The upper section of the staircase and the second floor surrounding the staircase had collapsed onto the first floor. (see photo below)



At the base of the staircase was a small sitting area. To the north of the lower steps was a restaurant style booth covered in a leather type material. The booth was in good condition. Next to the booth was a rattan chair. The upper portion of the chair sustained fire damage but the lower area was intact.

To the north of the sitting area was the first living space, a travel trailer. The 2nd floor of the warehouse had collapsed into this area. Fire damage to the trailer was heavy, with only the lower aluminum base and tires intact. Debris was on top of the trailer and around the sides.

The first area of victim recovery was upon an intact portion of the 2nd floor. Access was made by placing a ladder adjacent to the burned travel trailer on the 1st floor. Seven victims were

located in this portion of the 2nd floor. A large wooden couch was just to the south of the victims. The couch was intact and did not sustain any fire damage. The floor in the area of the seven victims was covered in soot and some debris but did not sustain fire damage. Floor surfaces beneath the victims were unburned and clean. The second floor, in the areas to the north, west and east of the area upon which the victims were found, had collapsed onto the first floor creating a platform. The area to the south had been a family's living space and the roof had collapsed into this space at the southwest end.

Two more victims were recovered from an area on the first floor, just to the west of the location where the seven victims were found on the 2nd floor. These two victims were determined to have fallen from above with the collapse of the second floor. In this area, contents of the first floor space did not sustain fire damage; a white leather-like upholstered chair, a wooden headboard, and a wood piano were all completely intact. It was determined that materials in this area had fallen with the collapse of the second floor, protecting the contents of the 1st floor, and exposing the fallen materials to fire damage.

Following the recovery of the visible and accessible victims, an operational decision was made to enlarge the door on the west side of the building to allow the removal of debris into the side lot at 1305 31st Avenue, to bring in equipment as needed and to allow investigators into the area without overhead hazards and obstacles.

On the evening of December 3, investigators began scene excavation into the warehouse from the enlarged door opening on the west side of the building. Debris was carried out by hand and in five-gallon buckets. Investigators observed the debris as it was removed.

A victim was located within 10 feet of the west wall door opening, under a large amount of debris. Fire damage to nearby contents was significant; this was considered a normal effect due to the ventilation opening of the nearby door. Due to the amount of debris beneath the victim, it was undetermined whether this victim was located on the ground floor at the time of the fire.

Debris removal and scene investigation continued to the east. As large debris was removed, one floor-level victim became visible to the north of the area being processed. The overhead presence of large portions of flooring and other debris made recovery of this victim impossible until a path was cleared in that direction. (Recovery of this victim was accomplished on December 4).

As the investigation progressed further east into the warehouse, two victims were located. Their positions at floor level beneath second floor debris indicated they were on the ground floor at the time of second floor collapse. This location was near the travel trailer along the east wall. Fire damage here was extensive.

At approximately 3:00 AM on December 4, the area from the west to the east wall had been cleared of debris so that the floor was visible. The scene processing continued, as investigators started clearing debris in a northerly direction.

A center pathway between two motorhomes was revealed as debris was removed. One motorhome was positioned perpendicular to the west wall. The other motorhome was positioned perpendicular to the east wall. The motorhome on the west wall sustained fire damage to its top portions but the lower portions of the vehicle were intact with paint remaining and the tires intact. Items from the second floor had collapsed into the motorhome; sections of a large carpet and a yellow couch were visible and intact. The rug and couch appeared to have soot damage but were in otherwise good condition.

The motorhome on the east wall was also beneath the collapsed 2nd floor and its contents. The 2nd floor surface of the wood flooring was unburned. However, the sub-surface (ceiling of 1st floor), exposed to the ground floor, was charred. (see photo below) The motorhome aluminum sides were intact with paint present. The rear of the motorhome had the most damage due to collapse of the 2nd floor. The front of the motorhome, which faced the west wall, had a wooden pallet vertically mounted to it and a bike mounted to the pallet. The top of the pallet was charred approximately a third of the way down. The bicycle seat was consumed and there was melting to the top exposed rubber of the tire but the rest of the tire was in good condition. Another bicycle was leaned up against the motorhome; this bicycle was in good condition.



In the space between the two motorhomes a large area rug was suspended among partially collapsed debris from the second floor. Eight victims were recovered from within this rug and next to it.

To the north of the west wall motorhome were two pianos. The second floor had collapsed in this area and some music equipment and furniture from the second story were in this area. The equipment and furniture had some heat damage but were not heavily flame damaged. Roofing material was also found in this area with heavy damage to the wood members. Four victims were recovered from this area.

To the northeast of this area of collapse was a wooden raised platform. Upon it was debris from the 2nd floor collapse. Among the debris, three victims were found. Five victims were found directly south of that location, on the 1st floor. It was determined that all eight victims had fallen from the 2nd floor. The platform base was in good condition with the paint still present. Remaining wood members that would have formed walls for the space were consumed or heavily charred. On top of the platform, items from the second floor were identified, including music equipment and extension cords. The cords were in good condition with insulation intact and the plugs remaining. This indicated to investigators that the fire was above the platform yet below the 2nd floor.

Investigators began to clear the area to the east of the platform making their way to the rear staircase. This area sustained extensive damage. The roof and second floor had collapsed into the area resulting in charring to wood members and furnishings. It was noted that during suppression efforts, this portion of the building was most difficult to access. Investigators cleared the area leading to the rear (north) steps finding the first four steps intact and in good condition. The remaining steps were consumed. (see photo next page)

Along the north wall, to the west of the steps, investigators examined a leather booth and a piano. The top leather of the booth sustained heat damage exposing the cushion material. The seat of the booth sustained some heat damage and was less damaged than the back and top of the booth. The rear of the piano rested against the travel trailer that was perpendicular to the north wall. The piano sustained heat damage with considerably heavier damage to the top than the bottom. (see photo next page)



Once investigators cleared the area to the east of the raised platform the scene processing returned to the contents of the previously mentioned motorhomes in the center of the warehouse. Atop the motorhome on the west wall, a large rug containing a yellow couch and an octagonal coffee table had collapsed from the 2nd floor into the motorhome. These items did not sustain fire damage. Three victims were found within the large rug. The motorhome on the east wall was also examined. The second floor and roof had collapsed into the motorhome. Fire patterns present on the motorhome indicated top-down burning.

Attention next focused on the northwest area of the building, identified as the area of origin based on multiple witness statements, firefighter observations and fire patterns. An area approximately twice as large as the identified potential area of origin was protected for the origin and cause investigation. This began with daylight on December 5. Small debris was collected by hand and placed in buckets for removal from the area of origin. Large debris was visually examined and placed on tarps for removal.

The second floor and roof had collapsed into this area. The top of the wood flooring from the 2nd floor was in good condition. The underside of the flooring exhibited heavy charring. Furniture and music equipment from the 2nd floor were also observed with varying degrees of heat damage.

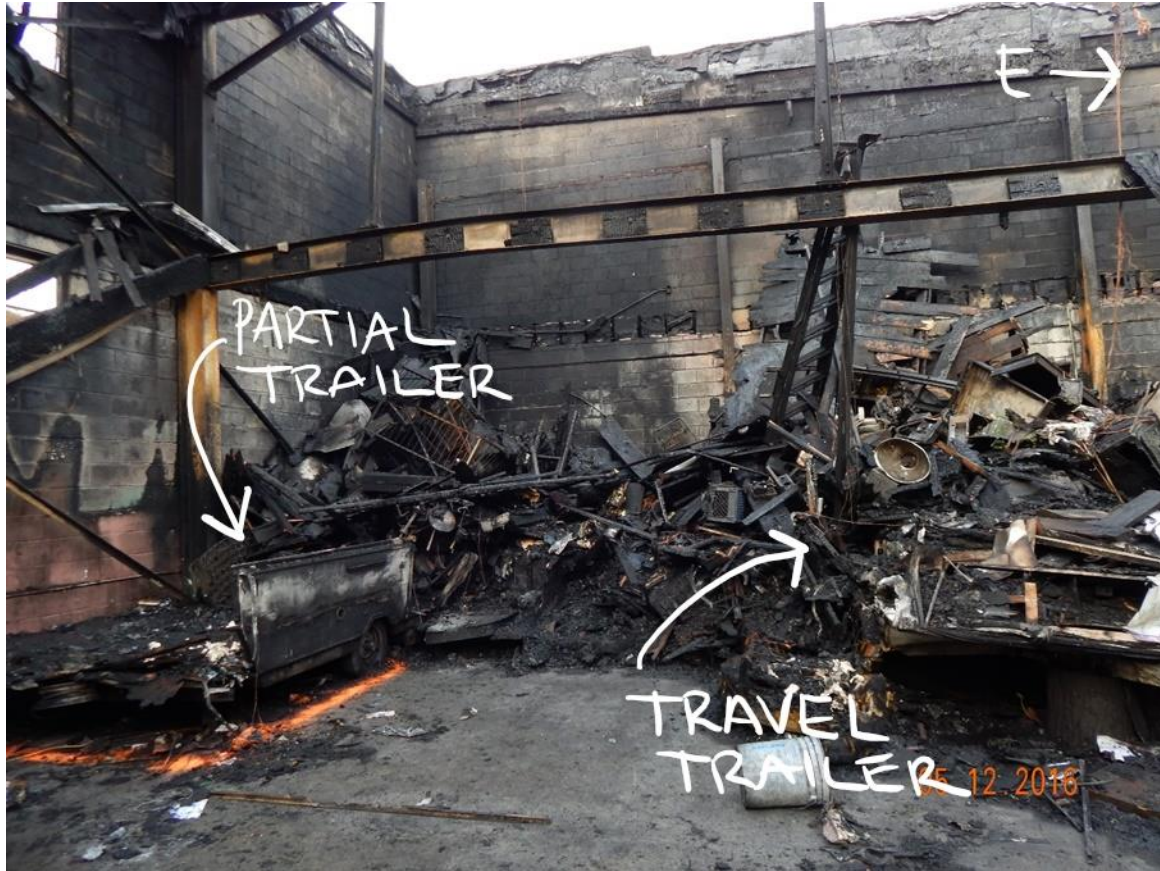
As investigators layered debris out of the northwest area, they relocated discernable electrical items and wiring into grids that had been marked out with green paint in the cleared out northeast

section, to correspond with the areas from which they had been removed. The collapse of the second floor onto the first floor made it difficult to distinguish the floor of origin of many items. Heat damaged items found in the debris were included for possible further examination.

Along the west wall, immediately north of the motorhome, a raised living space was revealed, with wood tree stumps that were the steps to the living space. The wood stumps and the wood platform for the space were in good condition. The upper wood members that would have made up the walls for this space were consumed. Also completely consumed was a sleeping area elevated above the platform toward the north, along the west wall.

Next to this living space was a partial travel trailer, altered by previous tenants to customize the layout of the space. Reportedly, the south wall of the trailer was removed and replaced with a wooden wall that extended to the ceiling of the first story. The partial travel trailer sustained extensive fire damage. In addition, the roof and 2nd floor had collapsed onto it. Investigators identified and processed the space between the partial trailer on the west wall and the travel trailer against the north wall. Previous information from interviews indicated this was a lounge area. Witnesses had reported seeing flames in this area during the early stages of the fire. This space sustained extensive fire damage. Couches found in this area were more heavily damaged on their upper portions compared to lower portions. (see comparative photos below and next page)





(Blank space)

A makeshift wall that reportedly separated the lounge area from a living space located against the north wall of the building was consumed. A section of the door that accessed the living space was located in the debris. The door was heavily charred. (see photo below)

Directly inside the living space along the north wall, investigators removed debris, layer by layer, to uncover a kitchen table and chairs. The table had collapsed onto the metal chairs. The backrests for the chairs were consumed. Wood beneath the chairs' cushions was present but the majority of the cushion material was consumed. (see photo next page)





To the north of the table and chairs were two refrigerators, positioned against the north wall. One refrigerator was full-sized and the other was dorm-room sized. The full-sized refrigerator sustained fire damage, of which the greatest damage was on the west side. The dorm-room sized refrigerator also sustained fire damage. Both refrigerators were examined visually. Fire damage indicated the flames impinged on the appliances but did not originate from within them.

To the left of the refrigerators were several milk crates containing kitchen items. The milk crates were mostly intact. Behind the crates were two wooden storage cabinets placed against the north wall. The tops of the storage cabinets exhibited fire damage that diminished with proximity to the floor. (see photo next page)



Behind the large refrigerator, investigators located a metal duplex receptacle box. Plugged into one socket of the receptacle box was a relocatable power tap. The insulating material of the power tap's cord was consumed. The power tap was slightly warped, sustaining heat damage, but otherwise was in good condition. A melted plug was observed in the other socket. The cord was no longer present. The receptacle was fastened to flexible metal conduit. Due to the destruction of the building, the origin of the conduit could not be determined.

At this time scene examination was suspended to allow investigators to interview occupants of the area of origin. The occupants were asked to describe the location of their belongings and to describe their actions on the day of the fire.

Scene examination resumed in the area west of the kitchen. The tenants referred to this area as an office. The building's second floor and roof had collapsed into this area. The area was examined layer by layer. Investigators found the remains of a makeshift wall, which separated the kitchen area from the office area. In the debris in front of the kitchen side of the wall, a metal duplex receptacle was found. The receptacle box had sustained extensive fire damage leaving only the metal components remaining. The occupants stated that electronics from the office were supplied by this receptacle. On the office side of the wall was a small futon couch. The couch was in good condition with the cloth and cushion present. (see photo below)



According to the occupant, there was a desk and a chair along the west wall, toward the south end of the office space. The metal frame of the chair was located. The backrest and seat were consumed. The only remains of the desk were heavily charred pieces of wood.

The tenant indicated that a laptop computer, a desk lamp and a charger for a cordless drill were on top of the desk. Remains of the lamp and laptop were located. There was also a metal bookshelf on the west wall, just north of the desk. A second desk was located in the northwest corner along the north wall. This desk was in good condition. The top surface of the desk was protected from heat by household items. The top portions of the desk exhibited minor char which lessened toward the ground.

Electrical engineers removed the conductors from conduit along west and north wall in the northwest corner. Investigators noticed that the wiring's insulation was more damaged in the area above the desk on the west wall. Beneath the conduit was an area of clean burn on the concrete wall. A wireless computer keyboard was discovered in the debris in this area and left in place, as were other melted electrical items that appeared to have been on the table.

Above the office and kitchen space, but below the second story floor, was another living space once used by former occupants. The current occupants indicated they had stored some

household items, including music equipment, in this upper space. The occupants stated there was a lamp in this upper space but they did not know where the power source for that lamp originated. Investigators did not find any intact portions of the upper living space.

To the east of the kitchen area was the travel trailer positioned perpendicular to the north wall. The occupants used this trailer as a sleeping area. The occupants also stated above the trailer was another sleeping space for a previous tenant. Investigators were not able to find any intact portions of this living space.

The remains of the trailer east of the kitchen area were examined layer by layer. There were numerous pieces of music equipment, furniture, and two temporary power distribution boxes, or “spider boxes,” found in the debris from the second story collapsing onto the trailer. Within the debris inside of the trailer, investigators found the remains of a floor lamp and table lamp and numerous pieces of unburned clothing and rugs.

ANALYSIS OF FIRE PATTERNS/INDICATORS:

Within the structure, fire patterns were examined and evaluated with respect to the burning characteristics of the materials involved. Each pattern was then evaluated in context, and in relation to all of the patterns observed and the mechanisms of heat transfer that led to the formation of the patterns. The conclusion is that the fire originated at the northwest area of the first floor and progressed throughout the building, growing in size and intensity.

The following indicators, as referenced in *2014 NFPA 921, Kirks Fire Investigation 7th Edition*, and *Forensic Fire Scene Reconstruction*, which were documented with photographs, are among those that support the findings in this report:

1. The sequential pattern analysis of the fire effects and patterns, including char analysis, heat and flame vector analysis, and the movement and intensity patterns, indicate the fire originated in the northwest area of the first floor:

The second floor was of wood beam construction; its underside, the ceiling of the ground floor, was open wooden studs, with no drop ceiling or other partition present. (see photo next page) More severe charring was observed to the underside of the second-floor (i.e. ceiling of the first floor.)



The upper wooden surface of the remaining second-floor was not as charred as its underside (see photo next page). Of the remaining intact portions of the second floor, investigators observed burn damage to be from bottom up. Some areas of the second-floor wooden members were minimally fire damaged, having been protected by either large carpets and furniture, or from roof collapse. The second-floor completely collapsed in the rear half of the structure (north). Fire investigators observed less damage to the structure as distance from the rear portion of the building increased.



Overall, less damage was observed within the front (south) half of the warehouse, on both levels. Despite the collapse of the rear half of the second floor, investigators were able to observe burn patterns to be more severe on the undersides of the collapsed floor of the second floor, indicating more flame impingement from below.

2. Clean burning of the concrete walls was visible in the northwest corner of the first floor at multiple elevated locations:

Investigators observed that items in the northwest corner had less fire damage at their lower points that were closest to the ground (see photo next page), and areas of pink paint were still visible on the concrete block walls. A wooden chest and storage cabinet were minimally fire damaged toward ground level, as were plastic crates to the east. All exhibited more fire damage above floor level. This was similarly observed on a dorm-sized refrigerator and a full-sized refrigerator along the north wall and east of the crates. (see right photo next page) Fire damage on the refrigerators was concentrated up high, versus down at floor level. An area of clean burn

was observed along the west wall, several feet from the northwest corner. (see left photo below)



3. No floor level burn patterns were observed in the northeast section. Fire patterns indicate flames burned above floor level.

Once the northeast corner was cleared of debris, investigators observed remnants of a rear wooden staircase ascending the north and east walls. (see photo next page) Soot deposits were observed upon the concrete block north and east walls around the staircase. However, the first four wooden stairs were still in place, and in this same area (to the west of the stairs) a portion of pink paint was still visible on the north wall. Additionally, more fire damage was observed several feet above floor level, and extending upward. Less damage was observed to items down low, including a decorative piano and pieces of wood to the west of the stairwell. Blue paint was still visible on the lower portions of the pieces of wood. Yellow paint was observable on the piano. (see photo below)





EXAMINATION OF POTENTIAL HEAT SOURCES:

Candles/incense: The use of candles and incense was examined as a possible heat source of the fire. Witness statements indicated all the occupants were strongly discouraged from the use of these items. The occupants of the area of origin were aware of the hazards associated with candles and incense and adamantly denied using them. No remains of candles or incense were found in the living areas in general, or in the area of origin. Due to the degree of destruction in the area of origin, the use of candles and/or incense cannot be eliminated.

Smoking materials: The use of smoking materials was considered as a possible heat source of the fire. Witness statements of occupants indicate smoking was strongly discouraged and only allowed outside. No occupants were identified who openly defied this rule and no one was observed using smoking materials in the area of origin before the fire. No remains of smoking materials were found during the scene investigation. The use of carelessly discarded or unattended smoking materials cannot be eliminated.

Natural gas systems: There is no natural gas supply in the building. There were no natural gas appliances in the building. Natural gas systems and appliances can be eliminated as the heat source of the fire.

Propane systems: A portable propane heater was observed on the second floor but it was not within the area of origin. No portions or components of a propane system were found within the area of origin. Propane systems and appliances can be eliminated as a potential heat source.

Intentionally Introduced Heat Source: Criminal activity was considered as a possible cause of the fire. The scene investigation did not reveal any indications of an intentionally set fire. Interviews did not reveal any motives for an intentionally set fire. First floor occupants near the area of origin prior to the discovery of the fire reported that there were no unauthorized persons in that area. However, the introduction of an open flame, either intentionally or carelessly, cannot be eliminated.

Electrical Systems: Throughout the warehouse, extensive use of power taps and extension cords was noted. Occupants indicated that the fixed receptacles on the 1st floor were not operational. It is not known if the fixed receptacles on the 2nd floor were operational. Occupants at the north end of the warehouse used temporary wiring to energize the devices in their living units. Within the area of origin, all remains of extension cords, power taps, electrical conductors, wires, appliances and their associated power cords were placed aside for further examination. Forensic examination of items was performed but did not reveal a fault or failure that resulted in the fire.

Within the area of origin, two receptacles were located and examined. The occupant reported that one receptacle hung from the ceiling. She stated that the other receptacle was fixed to a wood beam at the opposite end of the kitchen area. Both receptacles were attached to flexible conduit yet she was unaware of their origin. These receptacles supplied a series of power taps with which they energized all the devices in their unit. The occupant said that they used the small on/off switches located on the power taps to control their lamps and small appliances.

The occupant indicated that a relocatable power tap was plugged into the hanging receptacle and the large refrigerator was plugged into the power tap. Also plugged into the power tap was another extension cord that supplied power to the smaller refrigerator. The extension cord was draped over the top of the large refrigerator. The occupant also told investigators that the other socket of the hanging receptacle contained an extension cord that went into the travel trailer and attached to another extension cord and a relocatable power tap that supplied power to a floor lamp and a table lamp.

The occupant also stated there was another light hanging just inside the door to her living space but she was unsure where the hanging light was plugged in.

Investigators were not able to determine how many electrical receptacles or appliances were in the building, nor how they were powered. Investigators did examine the two breaker panels located on the 1st and 2nd floors, but due to extensive fire damage, were unable to determine what, specifically, the panels powered.

Due to the nature of the electrical supply within the building, both fixed and temporary, a fault or failure of the electrical system cannot be eliminated.

Spontaneous Combustion: According to occupants' statements, wood-working and painting projects performed within the building resulted in the presence of materials prone to spontaneous combustion such as lacquers, thinners and paints. However, no indications of the storage or use of such materials was noted in the area of origin.

EVIDENCE:

Digital photographs were taken by Investigators from the Oakland Fire Department, Investigators from the Bureau of Alcohol, Tobacco, Firearms and Explosives, and Evidence Technicians of the Oakland Police Department and Alameda County Sheriff's Office.

No physical evidence was collected into custody by the Oakland Fire Department.

FATALITIES:

There were 36 fatalities associated with this fire. The victims' legal names and causes of death are listed below. The complete autopsy reports can be found in the case file.

The following autopsies were conducted by Dr. Thomas Rogers:

Alameda County (ALCO) Coroner case number 2016-03663

Jennifer Kiyomi Tanouye, (DOB: 4/25/1985) Tanouye had soot in the upper and lower respiratory system and had a carboxyhemoglobin level of 49%. Tanouye 's cause of death was smoke inhalation.

ALCO Coroner case number 2016-03661

Michela Angelina Gregory, (DOB: 3/14/1996) Gregory had smoke and soot in the upper and lower respiratory system and had a carboxyhemoglobin level of 40%. Gregory's cause of death was smoke inhalation.

ALCO Coroner case number 2016-03623

Sara Hoda, (DOB: 11/01/1986) Hoda had soot and smoke in her upper and lower respiratory system and had a carboxyhemoglobin level of 56%. Hoda's cause of death was smoke inhalation.

ALCO Coroner case number 2016-03625

Travis Samuel Hough, (DOB: 1/17/1981) Hough had smoke and soot in the upper and lower respiratory system and had a carboxyhemoglobin level of 43%. Hough's cause of death was smoke inhalation.

ALCO Coroner case number 2016-03630

Joseph Hudson Matlock, (DOB: 5/7/1980) Matlock had smoke and soot in the upper and lower respiratory system and had a carboxyhemoglobin level of 44% and a blood cyanide of 1.0 MG/L. Matlock's cause of death was smoke inhalation.

ALCO Coroner case number 2016-03649

Ara Christina Jo, (DOB: 9/11/1987) Jo had smoke and soot in the upper and lower respiratory system and had a carboxyhemoglobin level of 49%. Jo's cause of death was smoke inhalation.

ALCO Coroner case number 2016-03660

Alex Benjamin Vega, (DOB: 11/21/1994) Vega had smoke and soot in the upper and lower respiratory system and had a carboxyhemoglobin level of 46%. Vega's cause of death was smoke inhalation.

ALCO Coroner case number 2016-03658

Nicholas Day Walrath, (DOB: 2/1/1985) Walrath had smoke and soot in the upper and lower respiratory system and had a carboxyhemoglobin level of 48%. Walrath's cause of death was smoke inhalation.

ALCO Coroner case number 2016-03653

Edmond William Lapine II, (DOB: 10/1/1982) Lapine had smoke and soot in the upper and lower respiratory system and had a carboxyhemoglobin level of 54%. Lapine's cause of death was smoke inhalation.

The following autopsies were conducted by Dr. Paul W. Herrmann:

ALCO Coroner case number 2016-03651

Wolfgang G. Renner, (DOB: 8/2/1955) Renner had extensive inhalation of smoke and soot into the airways. The autopsy report does not list the carboxyhemoglobin level. Renner's cause of death was smoke inhalation.

ALCO Coroner case number 2016-03636

Chelsa Faith Dolan, (DOB:9/14/1983) Dolan had heavy soot present in the airway and major bronchi. No carboxyhemoglobin level was listed in autopsy. Dolan's cause of death was smoke inhalation.

ALCO Coroner case number 2016-03635

Jennifer Ann Mendiola, (DOB: 3/2/1981) Mendiola had soot in the airway and bronchi. No carboxyhemoglobin level was listed in the autopsy. Mendiola's cause of death was smoke inhalation.

ALCO Coroner case number 2016-03668

Amanda Emma Kershaw, (DOB: 9/20/1982) Kershaw had prominent soot deposition in the larynx, trachea, and bronchi. No carboxyhemoglobin level was noted in the autopsy report. Kershaw's cause of death was smoke inhalation.

ALCO Coroner case number 2016-03665

Vanessa Grace Quintos Plotkin, (DOB: 9/18/1995) Plotkin had a thick layer of soot in the oral cavity, larynx and major bronchi. No carboxyhemoglobin level was listed in the autopsy report. Plotkin's cause of death was smoke inhalation.

ALCO Coroner case number 2016-03631

Peter N. Wadsworth, (DOB: 3/14/1978) Wadsworth had soot in his mouth and larynx. No carboxyhemoglobin level was noted in the autopsy report. Wadsworth's cause of death was smoke inhalation.

ALCO Coroner case number 2016-03654

Alex Ghassan, (DOB: 10/7/1981) Ghassan had soot in the airways. No carboxyhemoglobin was noted in autopsy report. Ghassan's cause of death was smoke inhalation.

ALCO Coroner case number 2016-03634

Griffin Sean Madden, (DOB: 7/15/1993) Madden had soot in the airways. No carboxyhemoglobin was noted in autopsy report. Madden's cause of death was smoke inhalation.

The following autopsies were conducted by Dr. Michael Joseph Ferenc:

ACLO Coroner case number 2016-03662

Barret Chubb Clark, (DOB: 4/4/1981) Clark had evidence of smoke inhalation. Clark's carboxyhemoglobin level was 35%. Clark's cause of death was smoke inhalation.

ACLO Coroner case number 2016-03626

Justin Riley Fritz, (DOB: 6/29/1987) Fritz had evidence of smoke inhalation. Fritz's carboxyhemoglobin level was 58%. Fritz's cause of death was smoke inhalation.

ACLO Coroner case number 2016-03622

Donna Eileen Kellogg, (DOB: 7/18/1984) Kellogg had evidence of smoke inhalation. Kellogg's carboxyhemoglobin level was 64%. Kellogg's cause of death was smoke inhalation.

ACLO Coroner case number 2016-03621

Jason Adrian McCarty, (DOB: 6/14/1980) McCarty had evidence of smoke inhalation. McCarty's carboxyhemoglobin level was 47%. McCarty's cause of death was smoke inhalation.

ACLO Coroner case number 2016-03655

Michele Marie Sylvan, (DOB: 8/27/1979) Sylvan had evidence of smoke inhalation. Sylvan's carboxyhemoglobin level was 59%. Sylvan's cause of death was smoke inhalation.

ACLO Coroner case number 2016-03633

Benjamin Joel Runnels, (DOB: 9/6/1984) Runnels had evidence of smoke inhalation. Runnels's carboxyhemoglobin level was 69%. Runnels's cause of death was smoke inhalation.

ACLO Coroner case number 2016-03632

Nicole Renae Siegrist, (DOB: 4/2/1987) Siegrist had evidence of smoke inhalation. Siegrist's carboxyhemoglobin level was 62%. Siegrist's cause of death was smoke inhalation.

ACLO Coroner case number 2016-03656

Matthew Andrew Bohlka, (DOB: 6/7/1983) Bohlka had evidence of smoke inhalation. Bohlka's carboxyhemoglobin level was 61%. Bohlka's cause of death was smoke inhalation.

ACLO Coroner case number 2016-03650

Draven McGill, (DOB: 8/22/1999) McGill had soot in the larynx and trachea. McGill had a carboxyhemoglobin of 60%. McGill's cause of death was smoke inhalation.

ALCO Coroner case number 2016-03666

William Emerson Dixon, (DOB: 11/18/1981) Dixon had soot in the larynx and trachea. Dixon had a carboxyhemoglobin of 56%. Dixon's cause of death was smoke inhalation.

ALCO Coroner case number 2016-03659

Jonathan Michael Bernbaum, (DOB: 6/17/1982) Bernbaum had soot in the trachea and larynx. Bernbaum had a carboxyhemoglobin of 43%. Bernbaum's cause of death was smoke inhalation.

The following autopsies were conducted by Dr. Judy Melinek:

ACLO Coroner case number 2016-03667

John Nicholas Igaz, (DOB: 12/24/1981) Igaz had soot in the nares, oropharynx and trachea. Igaz's carboxyhemoglobin level was 67%. Igaz's cause of death was smoke inhalation.

ACLO Coroner case number 2016-03627

David Riley Cline, (DOB: 11/5/1992) Cline had soot the nares, oral cavity and trachea. Cline's carboxyhemoglobin level was 51%. Cline's cause of death was smoke inhalation.

ACLO Coroner case number 2016-03652

Micah Krueger Danemayer, (DOB: 6/23/1988) Danemayer had soot in the nares, oral cavity, oropharynx and trachea. Danemayer's carboxyhemoglobin rate was 52%. Danemayer's cause of death was smoke inhalation.

ACLO Coroner case number 2016-03624

Nicolas Gomez Hall, (DOB: 11/1/1986) Hall had soot in the nares, oral cavity and trachea. Hall's carboxyhemoglobin level was 53%. Hall's cause of death was smoke inhalation.

ACLO Coroner case number 2016-03628

Brandon Chase Wittenauer, (DOB: 11/5/1984) Wittenauer had soot in the oral cavity, nares, and trachea. Wittenauer's carboxyhemoglobin level was 55%. Wittenauer's cause of death was smoke inhalation.

ACLO Coroner case number 2016-03657

Hanna Henriikka Ruax, DOB: 6/6/1984) Ruax had soot in the nares, oropharynx and trachea. Ruax's carboxyhemoglobin level was 52%. Ruax's cause of death was smoke inhalation.

ACLO Coroner case number 2016-03629

Cash Collins Askew, (DOB: 2/22/1994) Askew had soot in the nares, oral cavity and trachea. Askew's carboxyhemoglobin level was 65%. Askew's cause of death was smoke inhalation.

ACLO Coroner case number 2016-03664

Jennifer Akiko Morris, (DOB: 12/20/1994) Morris had soot in the nares, oral cavity, larynx and trachea. Morris's carboxyhemoglobin level was 81%. Morris's cause of death was smoke inhalation.

KNOWN INJURIES:

Samuel Maxwell was seriously injured and remains hospitalized at the time of this report. His eyewitness account of the event is not available.

CONCLUSION:

No witnesses to the incipient stage of the fire were located. Based on witness statements and analysis of fire patterns, an area of origin was identified in the northwest area of the ground floor of the warehouse. In support of this hypothesis, fire patterns and fire behavior were considered, including ventilation effects of door openings, and the fuel load, consisting of large amounts of non-traditional building materials. This analysis was challenged with alternate hypotheses of fire origins, away from, or communicating to an area remote from, the immediate area of fire origin. Several potential ignition sources were considered. No conclusive determination of the initial heat source or the first materials ignited was made. The fire classification is UNDETERMINED.







