SAN FRANCISCO FIRE DEPARTMENT
DIVISION OF TRAINING

TRAINING BULLETIN

TRAINING BULLETIN 22 – 03

STANDARDIZED TRUCK COMPANY OPERATIONS

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The San Francisco Fire Department employs a very aggressive method of firefighting. This method is made possible only by maintaining a disciplined and coordinated attack on a building fire. Engine companies primarily make an interior attack to place water on the fire as quickly as possible. It is critical that Truck Companies maintain standardized operations to ensure successful outcomes. Members of an Engine company must KNOW that an arriving truck will take predicable steps to support their initial actions.

The PRIMARY FUNCTION of a Truck Company is to rescue civilians from burning structures and to provide the support necessary for engine companies to access and extinguish fires. While many of these tasks require ingenuity; maintaining discipline, understanding priorities, and successfully implementing them are the keys to good Truck performance at a fire.

This training bulletin will address Truck company operations from a historic San Francisco Fire Department perspective. It has been curated from over 150 years of successful operations that are known to work in San Francisco. These approaches have been tested on the fireground and have been proven to work, if adhered to. There is clearly space for deviation based on situations presented at the incident. However, it is critical to have a framework with which to operate to maintain consistency throughout the Department. This Bulletin will provide that framework.

APPARATUS POSITIONING

The truck company officer is responsible for evaluating each situation and shall determine where to position the truck. A well-trained driver and tiller should understand the officer's general expectations regarding truck positioning. The first arriving truck company should position the apparatus in the front of the fire building if possible. If access or other obstructions determine that the first arriving truck must use ground ladders to access the roof, the apparatus should be parked across the street and forward of the fire building, providing access to the tools and ladders on the truck. They should attempt to leave access for the supply engine. At fires on a hill the truck should be positioned uphill if possible, to facilitate the removal of ground ladders from the bed. If there is an aerial shot, the apparatus should be positioned to provide for the possibility of utilizing the aerial ladder to safely access the roof with a proper climbing angle, or if needed, perform a window rescue. When utilizing the aerial on a hill every effort should be made to position the turntable downhill from the building and extend the aerial uphill.

At the direction of the officer, the driver and tiller must work together to obtain the best functional position for the apparatus when the aerial is to be used. This is dictated by such factors as location of fire, smoke direction, overhead wires, the height of the building, the width of the street, trees, or any other obstacle that might impact the ability to use the aerial. This also includes positioning the apparatus so that the jacks can be extended without any obstructions, such as parked cars. If short jacking is the only option, the apparatus should be positioned so that the jack on the side closest to the fire building is fully extended, and the opposite side short jacked.

The position of the second arriving truck is dependent on factors including direction from the Incident Commander, the position of the first arriving truck, the initial communications from on-scene companies, location of the fire building on the block, the size and development of the fire, and the width of the street. If possible, the second truck should be positioned to use the aerial as a secondary means of egress from the roof, fire floor, or floor above. **The second truck should not put up their aerial at an incident that is just under investigation**. An incident under investigation is a dynamic situation that requires apparatus be able to reposition easily to address changing conditions or location. The Incident Commander may need to redirect that apparatus if the location changes.

- Below are frequent second arriving truck considerations:

    - Mid-block – Be aware of the direction of response of the first arriving truck and enter the block from the opposite direction whenever possible. This often requires going around the block. This will allow the opposite side of the building to be laddered, providing a secondary means of egress from the roof. It also provides an ideal location for use of the aerial for rescues should the first truck's aerial be committed to the roof.

    - Corner Building – Position the apparatus on the opposite street on which the first truck positioned. This will cover both sides of the building and possibly the rear.

    - Alleys- The second due truck should usually not enter an alley unless directed by the IC. Park on the cross street due to limited access.

- Other Considerations Regarding Apparatus Placement:

    - DO NOT BLOCK THE SUPPLY ENGINE. Before entering the incident block, you must ensure that you will not obstruct a supply engine preparing to lead out. The truck officer may be required visually check by walking down the street.

    - DO NOT PARK ON TOP OF SUPPLY LINES. When positioning the truck, be mindful of laid out supply lines. If hose is laid out in the street, the firefighter and EMT on the truck should get out of the apparatus and move them out of the way. Look up for the best possible aerial spot and look down for hoselines and jack obstructions.

    - At warehouses and commercial structures, the truck should park outside of the collapse zone and in a position for the possibility of setting up the ladder pipe.

Truck companies responding to greater alarms must check in with the incident commander and look for opportunities to position the truck in the most advantageous position possible, depending on the incident. This could be an exposure building, around the corner from the fire building, behind the building, or in a position for ladder pipe operations.

TRUCK COMPANY RESPONSIBILITIES

PRIORITY OF TASKS

The priority of tasks for the first arriving truck are dictated by what they are presented with when they arrive on scene. Things such as an immediate rescue, utility issues that impact life safety, or entry issues, can alter the priority of tasks. Truck officers should evaluate conditions and prioritize those tasks and tactics that will have the greatest impact on saving lives first and preserving property second. Forcing a gate or door for the engine company might have the greatest impact on saving lives by gaining access for the engine to extinguish the fire quickly. Timely vertical or horizontal ventilation under heavy fire and smoke conditions may have the greatest impact on the overall outcome of the incident. Conditions may warrant that both tasks are accomplished simultaneously. This is the hallmark of an efficient, well trained truck company

- Typically, the priorities are as follows for the first truck:

    - Rescue- Life safety is always our highest priority. Any confirmed rescues are the top priority. Companies operating on the roof or interior must include searching for trapped victims as the highest priority. On the roof, this is a recurring task that must be repeated at regular intervals.

    - Entry- It is a critically important and a fundamental job of the truck to provide forcible entry for the first due engine to gain access to the fire building. The ability of the engine company to get water on the fire in a timely manner can have the greatest outcome for potential victims and the safety of firefighters. One or two members should be sent to conduct forcible entry. Often the forcible entry task is not completed by just opening the front gate and door.

    - Ladder- The first arriving truck should ladder both the roof and the fire escape if one is present. Should either of these tasks NOT be accomplished, the IC must be notified immediately. Subsequent ladder locations, such as a secondary means of egress off the roof, ladders to windows, the rear of the building, or secondary fire escapes, can be done by later arriving companies.

    - Ventilate- If it is a top floor fire, the roof should be ventilated. Proper, timely ventilation can have a positive impact for the companies operating inside. Ventilation should always be coordinated with Fire Attack.

    - Utilities, Salvage, and Overhaul- The first truck will assist with these duties when the above are completed and the fire is under control.

ROOF OPERATIONS

Roof operations are a vital part of our tactics in the SFFD.

- Generally, the first arriving truck is responsible for conducting roof operations. Along with ventilation, the first truck crew on the roof should also complete the following tasks:
    - Identify a secondary means of egress.
    - Sound the roof prior to stepping onto it.
    - Perform a 360-degree survey of the roof and sides of the building, and any light wells. Key things to look for are smoke, fire, or victims presenting in any area not visible from the front of the building. This assessment should be continuous and any changes in conditions shall be communicated to the Incident Commander.
    - Any building features such as penthouses, floors below grade in the rear, additional fire escapes, abnormal roof configurations, solar panels, heavy mechanical equipment, or any other characteristic not apparent from the Command Post should be communicated to the IC.
    - Open and control the penthouse door. Monitor the impact to determine its effectiveness. Check for victims. If opening the penthouse door does not negatively affect the flowpath of the fire, leave it open to ventilate the upper floors. This will improve the survivability of victims on the upper floors, and aid in both the fire attack and any search operations. Always communicate your actions to Fire Attack to ensure that this ventilation is not affecting the flowpath of the fire. If having this door open is endangering firefighters or civilians, it must be closed.
    - Give updates to command on conditions, progress of ventilation, results of the 360-degree survey, and any changes in conditions.
    - Any action performed to ventilate a building has a direct impact on the fire conditions inside the building (positive or negative). Any action should be coordinated with Fire Attack. No action should be taken without understanding its' impact.
    - Roof team shall remain on the roof until directed elsewhere by the IC or the roof integrity is compromised.

The second arriving truck officer should always check in with the chief. If there is not a chief on the scene, the second arriving truck officer should evaluate conditions and determine what the first truck has or has not accomplished. They should then initiate the appropriate action. They must communicate with the first truck officer to get a progress report. The second truck crew should anticipate interior operations and bring the appropriate tools to support that task. At most incidents the primary role of the second truck is to pull ceilings and open walls to expose and extinguish fire in concealed spaces.

- Typically, the priorities are as follows for the second truck:

    - Rescue- Conducting a primary or secondary search if these tasks are not assigned to 1st arriving Truck or a Rescue Squad

    - Entry- It is the job of the truck to provide entry and access. For the 2nd arriving Truck this may mean roll-up doors or bars. In fires in single family homes and sets of flats, the second due truck is often given the task of forcing and securing the garage door. Many times, this is done while the 1st in Engine is already operating on the floor above the garage. The opening of the garage door can have a dramatic effect on the fire behavior. This operation should only be done in coordination with the companies on the floor above or Fire Attack. There must be a charged hose line committed to fight fire in the garage before the door is opened.

    - Ladder- Ladder the fire building's roof if not completed. Additional ladders should be raised to the fire building roof or exposures to provide a secondary means of egress from the roof. Additional fire escapes must be laddered. Laddering fire floor windows should be considered.

    - Ventilate- If the first arriving truck has committed all of its members to rescue, the second arriving truck must access the roof and complete roof and vertical ventilation operations. *At no time should both initial Truck companies commit to the roof.* Horizontal ventilation must be conducted in coordination with Fire Attack.

    - Overhaul, Salvage, and Utilities- Overhaul is the continuation of direct fire attack. Support Fire Attack by opening walls and pulling ceilings, to control the spread of fire. If it is a top floor fire, the second truck should report with an attic extension ladder to fight fire in the attic. Move and cover property and limit water damage from leaking hoses. Control all utilities including solar.

TOOLS AND EQUIPMENT

The tools and equipment used by a truck company at an incident varies depending on the roof (flat or peaked), building construction, and whether the crew is going to the roof or going inside.

The officer should carry a rope bag, TIC, box light, and wear an officer's belt with a crash axe or roofing hammer.

All truck firefighters whether going to the roof or going inside will be equipped with the following:

- A fully equipped truck belt with:
    - A hose and ladder strap- This is important for securing a hose-line, large or small, to a ground ladder when the line is being taken to the roof or through a window. **DO NOT USE WEBBING TO SECURE HOSELINES TO GROUND LADDERS**. Webbing can restrict waterflow when tied to a dry hose-line. It also becomes difficult to untie the knot once the line becomes charged, if the ladder or hose needs to be moved. The hose and ladder strap can also be used in conjunction with the truck belt to support a large line or 2 ½" being used as an attack line.
    - A small brass spanner- This is so that truck members operating on the interior can tighten leaking hose couplings. Limiting water damage is a key component of salvage and can reduce overhaul.
    - A pick-head axe. While the flathead axe is a valuable tool for forcible entry, the pick-head axe is superior for the chopping and prying that is involved in both operations on the roof and interior overhaul. This axe is a better tool for removing skylights and the wood and roofing material from a ventilation hole, as well as door casings, trim and walls inside.

- Flat Roof Tools:

  On a flat roof of a type 3 or type 5, the truck will bring the following tools:
    - Circular saw with a wood cutting blade.
    - Carbide tip chain saw or other issued chain saw.
    - Halligan hook. A Halligan hook functions as a prying tool to remove wood from a vent hole and can be used to punch through the ceiling.
    - Irons for the penthouse door. The Halligan tool can also be tied off to a webbing or rope and be used to ventilate windows below the roofline. This should only be done in conjunction with Fire Attack.
    - Rope bag
    - TIC
    - Other tools that the officer deems necessary to complete their tasks on the roof, such as a 14' roofing or ridge ladder. This can be used to access lightwells or exposure roofs of different heights.

- Peaked Roof Tools:

  On a peaked roof, the number of personnel that can safely operate on the roof is often limited by the lack of space. Tools may need to be hauled up by rope or passed up by other members. The officer usually should be the first one on the roof to receive the roofing or ridge ladder from the first firefighter up the ladder. This is for two reasons. The first is safety. The officer is usually carrying just a rope bag. He or she can get off the ladder and on to the roof with less difficulty carrying minimal tools. The second is that the officer can the assist with the placing of the roofing or ridge ladder in the best possible place for cutting a hole. The first person on the peaked roof should not be carrying the ladder.

  The following tools are required for ventilation on a peaked roof:

  - Carbide tipped chain saw- The carbide tipped chain saw typically works better because it does not get gummed up from the composite shingles or dulled by nails. The circular saw should not be used on peaked roofs for safety reasons.
  - 14' Roofing and 14' Ridge ladders
  - Ceiling Hook or Halligan hook- On roofs with steep pitches the ceiling hook with extension may be needed to reach the ceiling.
  - Rope bag- This is helpful for the hauling and lowering of tools and equipment. It also can be used for tying off the firefighter that is using the saw. For this operation, a wrap should be taken around the top rung of the Roofing or Ridge ladder.
  - Halligan tool- The point can be driven into the roof and used as foothold.

- Interior Tools:

  The following basic tools are necessary to conduct interior operations:

  - Ceiling hooks
  - Irons
  - Rope bag
  - Pump can (if first arriving unit)
  - Attic extension ladder
  - TIC

  At high-rise or commercial structures, alternative tools may be useful:

  - Rabbit tool
  - Battery operated spreaders
  - Circular saw with metal cutting blade

- Greater Alarm Tools:

Greater Alarm truck companies should listen to the radio for updates on conditions and needs. Second Alarm Truck Officers should be aware that they are the only truck responding on a second alarm. Greater Alarm truck officers should use experience and situational awareness to determine the appropriate tools for the given structure. Greater Alarm companies MUST ALWAYS CHECK IN WITH COMMAND!

KEY POINTS AND CONSIDERATIONS

The following are some key points on the multiple tasks that a Truck company must perform at a working fire. For more comprehensive review, the corresponding manuals should be referenced.

COMMUNICATIONS

Communication between truck companies, the Incident Commander, and the Fire Attack Chief is crucial at a working fire. In the initial stages of a fire, the first and second due truck need to make contact to determine what task the first truck has accomplished and what needs to be done by the second truck.

- On the roof the truck officer needs to coordinate with the Fire Attack Chief and communicate the following information:
    - How many members are on the roof, and if you split your crew
    - Location of any victims and actions required for rescue
    - Location and/or extension of fire- If it is a top floor fire, where the hole is needed
    - Determine the impact of opening the penthouse door or removing skylights prior to doing so
    - Changes in conditions (smoke-positive and negative, wind, integrity of roof)
    - Discovery of fire in the attic
    - Any hazards, such as solar panels or heavy mechanical equipment.
    - The results of the 360-perimeter check. Is there fire or smoke coming from the rear or the lightwells? Any victims in windows in the rear or in lightwells? Is there a fire escape in the rear? Do the floors in the front match the floors in the rear? Below grade? Is there a setback penthouse?

- Best location for secondary egress ladder if necessary
- The progress and effectiveness of ventilation
- Any needs that you have in order to complete your tasks on the roof, such as; additional saws or ladders to reach exposure roofs or perform a rescue
- If requesting a hose line always justify the need
- Any tasks that cannot be fulfilled by your crew

AERIAL

- All Truck members must be proficient in the setting up and deployment of the aerial ladder:
  - Develop skills to be able to judge building heights and distances.
  - Slow down on your approach to get the best possible position.
  - Look for the safest spot for crews to get on and off the roof, away from fire and smoke.
  - For a successful spotting of the apparatus, the entire crew must work together. Members should get out of the apparatus, on difficult spots, and assist with ensuring that the jacks are not obstructed, and the ladder will clear any overhead wires. These members should also ensure that if a hose line is laid out in the street, that the truck does not park on it.
  - A rule of thumb for wires on alleys and narrow streets is, if the fire building is on the side of the street with the power poles, you typically will not have an aerial shot due to the overhead wires running parallel to the street. If it is on the opposite side of the street from the poles, the turntable can be placed in the "V" created by the drop wires, allowing the aerial to be used.
  - Know the difference between high voltage and telecom wires
  - In some instances, backing into an alley will give you the best possible shot by reducing the steps to maneuver the ladder into position.
  - Operating around MUNI wires is extremely dangerous. Always maintain a minimum of ten feet of clearance from them or any wire.
  - Typically, the aerial should be used on buildings three stories and above, due to the poor climbing angle below that. Buildings two stories and below should use ground ladders, unless conditions warrant that the aerial is the safer option.
  - Never move an aerial without communicating with the crews on the roof.

- Consider the height of the parapet wall. A ladder may be needed to safely get on and off the roof. A 14' roofing ladder is usually a good option for this.

- For ladder pipe operations, follow the 75-80-85 principle listed in the Truck Manual. Always stay out of the collapse zone and maintain a dedicated water supply. Keep in mind there are three tips available for use on the ladder pipe, the smallest tip will provide a stream that almost doubles the reach of the largest tip, and the largest tip will provide a stream with almost double the volume of water of the smallest tip.

- The driver should remain vigilant at the turntable, but may be used to bring saws, tools, or ladders up the aerial to the roof as needed.

- The driver should listen to the radio and the intercom and monitor conditions from the turntable. He or she should communicate with the IC and the crews on the roof any changes in condition.

- On Type 2 structures, if a defensive attack has not yet been chosen, the aerial can be used to identify the roof type and progression of fire. The apparatus should be placed out of the collapse zone, in place for a ladder pipe deployment.

GROUND LADDERS

- All Truck members must be proficient in the setting up and deployment of ground ladders:

  - All Truck members need to become proficient in estimating the height of buildings, fire escapes, and windows in order to select the appropriate ladder. Utilize power poles, light poles, and MUNI wires. When placing ladders, do not come up short. It is a critical waste of time.

  - All members must be competent at alternate raises that involve overcoming obstacles. Obstruction raises, hill raises, chute raises, and sliding ladders to avoid wires are all critical raises to master.

  - When choosing a spot for a ladder, always consider access routes in and out of the building for both firefighters and hose lines.

  - Consider and try to predict fire extension and possible future fire impingement on the ladder.

  - Do not neglect to consider the rear of buildings for laddering opportunities. They may provide the best access to the roof when obstacles or setbacks are encountered in front, and the rear windows may need to be laddered for rescue or firefighter egress.

  - For window rescues, trussed extension ladders are the best choice because adjusting the height allows the ladder to be placed below the sill, to utilize the entire window height. The trussed extension ladders also provide the strength and stability needed for bringing a victim down.

- When in doubt, always bring wedges.
- On attached buildings, always consider laddering the exposure building.
- Fire escapes must always be laddered. If there are multiple fire escapes, the one servicing the standpipe should always be laddered first, unless rescue dictates otherwise.
- When laddering a fire escape, positioning the ladder so that firefighters climbing the ladder can make a smooth transition from the ladder to the riser up to the next floor is ideal. Beware of the drop ladder release lever! Accidentally releasing the drop ladder can seriously injure anyone standing below.
- On a peaked roof, always ladder the peak, valley, or the base of the roof slope. NEVER place the ladder on the slope. This makes the ladder highly unstable when getting on or off.
- A ground ladder should always be footed when anyone is on it.
- NEVER walk away from a ladder that has just been placed without ensuring it is secure in its position, especially on hills, around trees, or in windy conditions.
- Other uses for ground ladders include:
    - Bridging
    - Venting windows on upper floors from the exterior.
    - Laddering windows on the fire floor for possible rescue and firefighter safety.
    - Getting from the roof of the fire building to an exposure building that is not the same height.
    - For rescue purposes. Ladder gins, "A" frame, and interior leaning ladder.
    - A high point anchor for overhaul.

For more information on Laddering, consult the Truck and Ladder Manual

SEARCH AND RESCUE

- Life safety is the highest priority at every working fire. If the Rescue Squad is coming from a distance, or there are multiple victims, it is the job of the Truck to perform a search.
    - If conditions allow, a primary and secondary search must be performed in all areas of the building.
    - Always search in teams of two. No one should ever search alone. If there are three of you, stay together.
    - Coordinate the search with other companies on the fireground.

- Do a size up of the fire building to include:

  - Occupancy type.
  - Number of floors.
  - Location of fire
  - Number and location of fire escapes.
  - Other means of egress.
  - Are hoselines operating and is there progress being made on fire attack and ventilation.

- Gather information from the MDT, radio reports, family members, neighbors, and bystanders on the number of victims, their last known location, and if they are kids, elderly, or invalids.

- Tools to bring:

  - Flashlight.
  - Irons.
  - TIC
  - Rope bag
  - Webbing
  - Any other tool that you might need for forcible entry depending on the building.

- Typically, we begin our search by following the hoseline in the front door. If the front door is not accessible, consider an alternate means of entry, such as a window or the rear of the building if it is safe to do so.

- Search areas where people are most likely to be found. Many times, victims are found in areas of egress. These are:

  - In doorways
  - Behind doors
  - Hallways
  - Under windows
  - Also check beds, under beds bathrooms, and closets.

- Begin your search where people are in the most danger and work your way back from there.

- Remain oriented and pick the search technique that will allow you to best perform the search based on the type of building and occupancy. These include a left or right-handed search, searching off of the hose line, anchored using the TIC, or a large area search using ropes.

- If tasked with searching the floor above the fire, the Fire Attack chief must be notified as well as the IC. A secondary means of egress must be identified immediately. The search team must ensure that the crews below commit to protecting the stairwell. Ensure a hose line is in place to protect the search team.

- Dedicated search teams communicate directly with the Incident Commander. The IC should be updated on:
    - Point of entry
    - Progress reports
    - Needs
    - Current conditions
    - Changes in conditions
    - Hazards
    - Completion of primary and secondary search
- If victims are found, communicate:
    - Number of victims
    - Where they are being removed to
    - Resources needed
    - If you are able to continue the search or do you need to be replaced

FORCIBLE ENTRY

- Providing forcible entry for the engine company is a primary function of the truck. Efficient forcible entry can allow the engine to get water on the fire quickly, increasing the survivability of any victims inside.
    - In the SFFD's Forcible Entry Manual, page 11, there are four rules. They are:
        1) *Try before you pry.* In many instances, residents will exit the building and leave their door unlocked. It only takes a second to check, and can save you a lot of time.
        2) *Don't ignore the obvious.* Look for the easiest way in.
        3) *If possible use the door that the occupants use to enter and exit the building.* It will put you in the path that any victims that were attempting to exit the building
        4) *Maintain the integrity of the door.* Keeping the door intact allows you to control it if you need to close it. The door may need to be closed if opening it alters the flowpath of the fire, or if there is fire closer to the point of entry than expected and the line needs to be charged.
    - *Refrain from forcing entry to an area of active fire without a charged hose line.*
    - Truck members should become familiar with the various types of gates, doors, and metal window bars that are potential spots for forcible entry, and the methods for forcing them.
    - It is important to understand the difference between inward and outward opening doors and gates and how to identify them. If the hinges are on the outside, it opens outward. If the hinges are on the inside, it opens inward. All members must be proficient in using the irons to properly force a door in the proper direction.

- Most residential doors open inward. Most commercial doors open outward. On the interior of buildings, if a door opens outward, it most likely leads to a utility closet, a janitor's closet, or an elevator machine room.

- The irons are our primary forcible entry tool, but other options for more difficult entries are:

    - Circular Saw with a metal cutting blade
    - Rabbit tool
    - Battering ram
    - Battery operated spreaders
    - Through the lock tool

- In areas that have numerous properties with metal gates, the Circular saw with the metal cutting blade should be brought by the truck or the Rescue Squad. Many of the modern gates are built with a metal lip over the gap, making getting a purchase with the irons much more difficult. Horizontal bars in newer gates, also decreases the flex, making locking mechanisms more difficult to pop open. In these instances, having the saw in close proximity can allow the forcible entry crew to quickly switch tactics.

- Opening residential garage doors and cutting open metal roll up doors in a type 2, is also an important duty of a truck. On residential garage doors, if the garage is accessible from a side door, and is capable of being entered, a firefighter can enter and pull the cord connecting it to the opener or unlock it and roll it up. If not. It must be cut from the outside.

- Type 2 metal roll up doors usually must be cut with a metal cutting saw. The hole should be made as large as possible.

VENTILATION

- Early, effective, and coordinated ventilation can have a positive aspect of every aspect of the interior fire attack. It aids in search and rescue efforts and in the finding and the extinguishment if the fire. It also prevents the possibility of flashover and backdraft, increasing firefighter safety.

    - Truck members must have an knowledge of building construction, as well of as an understanding of how smoke, fire, and gasses move through a building, and how they react to various types of ventilation. In addition, ventilation and its effects must be understood and anticipated. Personnel must know what the best method of ventilation is based on where the fire is located in the building.

    - Ventilation, both vertical and horizontal, must be coordinated with fire attack, to prevent altering the fire behavior in a negative way.

- On a top floor fire in a building with a flat roof or peaked roof, effective ways to ventilate vertically include:

    - Cutting a 4' by 4' hole directly over the fire and breaching the ceiling.
    - Removing skylights and scuttles. It is important to determine if these openings vent only the attic or do they penetrate to the top floor.
    - Opening the penthouse door
    - Certain circumstances may require more than one ventilation hole (advanced attic fire, compartmentalized spaces, inverted roofs, attic spaces inaccessible from below)

- All the above methods MUST be coordinated with the crews inside to not negatively affect fire behavior.

- If a fire is not on the top floor, the roof should not be opened, unless ordered by the Incident Commander. Reasons for this could include a building with balloon frame construction, where the fire can travel up the walls to the attic, or there is a rescue under way on the top floor and conditions need to be improved

- If it is not a top floor fire, horizontal ventilation is required. This is accomplished by:

    - Opening doors to the exterior
    - Opening windows
    - Using positive pressure ventilation fans once it is absolutely certain the fire is under control.

- As with vertical ventilation, all the above actions must be coordinated with Fire Attack.

- On peaked roofs with steep pitches, if possible, vertical ventilation can be accomplished by working off the aerial.

- When cutting a hole in a peaked roof, the hole should be cut on the leeward side of the peak and as close to the ridgeline as possible, while still being able to breach the ceiling. In some cases, this may require the use of a ceiling hook with the extension.

- If a type 2 structure needs to be ventilated vertically, it must first be confirmed that there is no fire in the truss or roof structure. Once it is determined the roof structure is not involved in fire, the only acceptable option for vertical ventilation is removing skylights. No attempts should be made to cut a hole in a type 2 roof.

- Ventilating basement fires is very challenging. Ventilating basement fires can be accomplished by opening trap doors, cutting holes in the floor near openings to the outside, and using fans. These types of ventilation must also be coordinated with crews inside, in order to not pull the fire towards them. Ideally, ventilation is done before anyone enters the basement.

OVERHAUL

- The primary goal of overhaul is to search for fire extension.
    - It is the engine's job to put the fire out. It is the truck's job to find out where the fire is going. This is accomplished by opening walls, pulling ceilings, removing trim, and sometimes pulling up floors. This should only be done with a charged hoseline in place. Once a wall or ceiling is opened, it can expose active fire or smoldering material that will ignite due to the introduction of oxygen. The task is not complete until clean wood is exposed, and it is 100% certain that there is no further extension of fire.
    - The IC and/or fire attack BC is generally responsible for determining fire cause and origin. Preserving the area of origin and any evidence are important. Extensive overhaul should not be initiated until cause and origin have been determined. It will often be necessary to suspend overhaul operations until 4710/arson investigators arrive to complete the investigation.
    - The utilities should be shut off before overhaul begins.
    - Burnt and partially burnt combustible items need to be removed from the building. This includes:
        - Wood
        - Sheetrock (It contains paper)
        - Carpet
        - Furniture
        - Any other contents that are deemed combustible
    - Unburned and non-combustible items do not need to be removed. This includes:
        - Plaster
        - Glass
        - Metal
        - Tile
        - Stone
        - Any other material deemed non-combustible
    - These items can be moved to the center of the fire room. Shovels should be used to pull all materials away from the walls.
    - Carryalls should be used to haul all the combustible debris out to the street
    - Carryalls should never be loaded too heavy and be carried by two firefighters
    - Other methods for getting carryalls down are setting up a high point and lowering them down with ropes, or on the approval of the Incident Commander, items can be thrown out the front window. The high point can be either the aerial or a ground ladder supported on the floor above.

- Mattresses can smolder and should always be stripped when they are brought out.
- Studs and joists need to be fully exposed to determine that the fire has been fully extinguished.
- The best tools for overhaul are hand tools, specifically the pick head axe, Halligan, and ceiling hook. They work well at prying off trim and opening walls and ceilings, and reduce the chance of damaging any hidden utilities.
- Using the above tools with the proper technique can make overhaul much easier.
- Power tools can also be used in overhaul in certain instances but should be done with caution. Saws used recklessly can damage water and gas lines, and electrical wiring.
- Do not leave until the fire is out- expose enough ceiling, wall, floors. Do not underestimate the ability for fire to spread in hidden spaces.

SALVAGE

- In the SFFD our mission is to protect lives and property. Protecting property often involves salvage. This is the act of moving, covering, and protecting property and possessions. It also involves removing water and smoke from the structure.
  - Always treat other's possessions with the utmost care and respect. Always make your best effort to rescue or salvage belongings from damage caused by fire, smoke, water, or other firefighters at work. Pay special attention to preserving photos, books, rugs, artwork, musical instruments, electronics, special building features such as stained-glass windows and ornate trim, or anything else that might be cherished and difficult to replace.
  - In the SFFD Salvage Manual, on page 19, it states "The most significant of all salvage principles may be the accurate application of water."
  - Salvage should be considered at every working fire.
  - We also need to prevent further damage after we leave by covering holes in the roof and broken windows, as well as securing the property.
  - Salvage is not limited to working fires. It takes place at broken pipes, water mains, sprinkler heads, and clogged roof drains.
  - Truck firefighters need to be proficient at all areas of salvage. These include:
    - Throwing salvage covers
    - Diverting water
    - Setting up the Prosser pump
    - Using the water-vac
    - Using squeegees

- Valuables, photos, artwork, and electronics that can not be removed from the building can be stacked up on top of furniture that has been moved to the middle of the room and covered with a salvage cover or a tarp.

- Water can be removed from upper floors by pushing it downstairs, removing a toilet to drain it, or with approval, push it down elevator shafts. This can only be done if the car is above the floor being drained and the power is off to the elevator.

CONCLUSION

It is fully realized that conditions will develop on the fire-ground, where a basic standard operation will not be applicable. Therefore, nothing contained in this document shall be construed as a hindrance to the experience, initiative, and ingenuity of such officers in overcoming the complexities that exist under actual fire-ground conditions.

Due to the size of the San Francisco Fire Department, standardized procedures are required to ensure that our Department Mission Statement objectives are achieved efficiently across all Divisions and Battalions, and they define our primary responsibilities when responding to emergency situations.

Standardized truck company operations will help reduce risk to our members by ensuring specific jobs are completed in a specific order. They will help companies maintain continuity and teamwork at the beginning of an incident and facilitate the completion of those specific truck company tasks that have been proven to save the most lives and property.

It must be understood that no hard and fast rule, tactic, or tool can be applied to every situation. Many variables will dictate the best apparatus placement, ladder to be deployed and tools to be used. Company officers are tasked with evaluating the best tactics based on the size and construction of building, time of day or night, and the arrival time of the next truck or rescue company.

The standards stated in this Training Bulletin will supersede any conflicting statements found in current Department Manuals, Training Bulletins, or General Orders until they can be updated.