

# FIRE



# TRAINING

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## FIREGROUND OPERATIONS

# THE INCIDENT TACTICS SYSTEM

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The introduction of the Incident Command System (ICS) has led to fireground operations being more efficiently managed. Unfortunately the ICS will manage the operation even if the tactics that are being employed are incorrect and sometimes even dangerous to our operating companies.

The Incident Tactics System (ITS) is being developed so that Fire Departments that use the ICS to manage their fires will also have a system in place to help them select and manage the tactics that are needed to successfully bring the incident under control.

The "ITS" identifies the tactics needed to operate on the fireground by breaking down the typical fires that most departments respond to. The fires are classified by the expected resources needed to safely and efficiently bring the operation under control and, through the system, to expand the tactics as the incident conditions change. The tactics that are identified are not to be considered the hard and fast solution to all fire problems but are meant to try to help give a starting point for both a tactical approach to fire attack and a training program, to get the desired results.

Within the ITS, operations are broken down into 5 levels and general tactics are applied by severity of the incident. A *Level 1*, the least severe of all levels, should be used for investigations and outside fires (including brush, rubbish and vehicle fires) that would normally be handled by a single company. A *Level 5* operation is for the operations that border on natural disasters; aircraft crashes, large wild land fires, oil refinery fires etc. The middle three levels are somewhere in between and are based on several "home rule" factors. These include staffing, resources, available additional resources, training, and finally, and most important, the caliber of company officers. The ITS is also based on a set of tenets that apply aggressive interior firefighting in a safe and efficient manner. Several of these beliefs are addressed at the company officers position. One of these beliefs is *Tenet #1: The company officer is the backbone of the American Fire Service. Because of this these individuals need to be among the most competent and highly trained individuals in the department.*

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INCIDENT TACTICS...CONTINUED FROM PAGE 1

## TRAINING SAVES LIVES



**Level 2 Incident:** Fires or incidents in buildings that can reasonably be expected to be controlled by the operation of one handline. Level 2 fires include most of our every day fires: bedrooms, kitchens, and detached garages.

This is not meant to take anything away from either firefighters or chief officers but the company officer, day-in and day-out, guides the department in the firehouse, on the street, and on the fire floor.

The company officer must have several sets of skills. The officer must display leadership skills, decision making capabilities, knowledge of the profession, integrity, and a willingness to train. The officer is in charge of morale, acts as a mentor to the crew, defends the crew and assures that the company is battle ready.

The crew in return trains hard, operates as a team, and listens and follows orders on the fireground. This provides the base for safe and efficient operations on the fireground.

*Level 2 incidents are for fires or incidents in buildings that can reasonably be expected to be controlled by the operation of one handline.* This is not to say that a second handline, usually used as a back-up line, would not be stretched but the fire would be expected to be knocked down and controlled by the first handline. Level 2 fires include most of our every day fires: bedrooms, kitchens, and detached garages. Most times these are true “engine” fires. If the line gets into position the fire is over. The ladder company, or firefighters assigned to do truck work, has tasks that need to be completed here, but putting the fire out helps to get them accomplished.

Level 2 incidents reinforce the next tenet of the ITS, **Tenet #2: Nothing should deter from the stretching and operation of the first handline on the seat of the fire.** Bedroom or kitchen fires may rapidly grow and extend if the department is not on their “A” game. However, if the first-to-arrive engine company is properly trained and motivated, and has an Officer that is ready to supervise

the stretching and operating of that first line, then the fire will be rapidly knocked down and fire extension will be held to a minimum. This is where the ITS has the greatest disagreement with accepted practices of the ICS. In most ICS systems, the first-to-arrive officer has to establish command. That in itself is not a huge problem. The problems start to arise when these initial IC’s are removed from their positions as company officers to assume the role of IC outside (as opposed to a mobile command position with the crew). Who is supposed to assure that the first line gets down the basement stairs? Who is supposed to assure that the search above the fire gets done? How has the American Fire Service deemed that it is ok for two rookies to try to move a hand line into a fire area as their Captain stands out front and “commands” the fire? And if the engine “passes” command the poor truck boss now gets to stand outside as the ladder company members operate without direct supervision. Nothing is more important on the fireground, especially during Level 1, 2, and 3 incidents (and occasionally Level 4) than crew integrity. By taking the officer away from the crew the efficiency of the crew diminishes. It is that simple.

So if we do not leave an officer outside, how do we address command issues? Very simple, strong SOGs (or Best Practices) and strong company officers.

Which brings us to the **Tenet #3: The most efficient and effective interior fire attack occurs when groups of firefighters are assigned to perform both engine company operations and truck or ladder company operations simultaneously.** In a perfect world the firefighters assigned to the engine company would do nothing else on the fireground except for stretch and operate their handline. This would stop freelancing by engine members and would almost always ensure that the handline would be stretched. Occasionally a member of the first-to-arrive engine will be needed to perform a duty other than helping stretch the first line but this must be done only in life threatening situations. The firefighters assigned to the ladder truck, if the department has a dedicated truck company, or those assigned to do the truck company jobs on the fireground are basically responsible for everything else that needs to get done. Forcible entry, search and rescue, ventilation, ladder throwing and controlling utilities are just some of the tasks that the truck company officer and firefighters must evaluate, in order to prioritize the work load, and accomplish.

**Tenet #4: Nothing saves more lives on the fireground than the proper placement and operation of the first**



*handline. However, efficient and aggressive searches place a close second.* Once we have a working fire and the engine starts fire attack, the operations of the truck, or truck assigned tasks, must be put in place. One of the chief concerns of these firefighters is searching for any trapped occupants. This is one area that most departments are deficient. This may be based on lack of proper staffing, lack of proper training, or—in most cases—lack of experience in actual searching for trapped occupants. In order to really look at the how's and why's of searching, a closer look at the fireground is required. Firefighters, during their Firefighter I classes, are told about fire behavior, about smoke and backdrafts, and about fire growth and flashover. Some have even been sent to the flashover chamber to observe a staged “flashover” and to feel the heat and play with the fire snakes. They are told how great the turnout gear that they are wearing is and how it will protect them. However, because most firefighters in Firefighter I have never been in a working fire, they have nothing to compare their flashover chamber experience to in the real world. They do not know what too hot is, they do not realize that a flashover can occur without heavy black smoke, and that wearing their PPE will save their lives. There is not enough time spent learning about the hazards of our gear. About how good it is and how close it will let us get to the seat of the fire. And, how if they do not understand fire behavior, that the protection of the turnout gear will actually get them into trouble.

So part of the educational and training process must be centered on fire behavior and how it relates not only to building construction and operations, but how it relates to our survivability.

Too often our lack of proper training, proper equipment, proper staffing, and strong officers leads departments to use the risk versus reward mantra and to throw the safety card into the fire fight. **Tenet #5: Proper staffing, training, equipment and strong officers change the variables when using the risk versus reward equation.** What may be risky to the unknowing, or the unskilled, might be routine to someone else. Firefighting, in general, is risky and it is dangerous. Sending an engine company with 2 people on it to a working fire is dangerous. Sending a ladder truck with just a driver is dangerous. Fighting a fire with 5 people is dangerous. Having enough people on the fireground to do engine AND truck work simultaneously lowers the risk. Being able to conduct searches while attacking the fire lowers the risk for trapped occupants and makes the rewards easier to obtain.



**Level 3 Incident:** Fires that will require more than 1 handline to attack and control, but usually not more than 3, and that are restricted to one building, or the original fire building and the exteriors, radiant heat damage, of any exposures.

We know that this can't always be changed but ensuring that those 5 people have the best training, equipment, and officers MAY overcome the fact that they do not have proper staffing.

A *Level 3* incident is one that will require more than 1 handline to attack and control, but usually not more than 3, and is restricted to one building, or the original fire building and the exteriors, radiant heat damage, of any exposures. Level 3 fires would include fires in private houses that have extended so that there areas of fire on more than one floor, fires in multiple dwellings including garden apartments, and small fires in rows of stores or “taxpayers.” Level 3 fires also start to increase the work for truck companies, or those assigned to truck work, and truck work starts to play a larger role in the outcome of the fire. **Tenet #6: There are only two things that a fire department does on the fireground that directly affect the outcome of the fire, or that the fire itself cares about. The first is the application of water; the second is how much air we give the fire; ventilation. Fire departments should always be careful to not introduce more air into a fire building than they have the water to control.** As the engine company applies water to the seat of the fire, the firefighters assigned the truck duties begin their searches, checking for extension, and securing utilities. They also, sometimes, need to perform ventilation of the fire building to help the advancement of the engine and to relieve the built up heat, smoke and steam.

As we study ventilation we find that there are several ways to accomplish the removal of these products of combustion. But before we look at the ways to perform ventilation, let's look at the reasons why we ventilate. **Tenet**

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INCIDENT TACTICS...CONTINUED FROM PAGE 3



**Level 4 Incident:** Fire that will require numerous handlines and/or master stream devices to control the incident, or incidents where there is fire in more than 1 building.

**#7: There are only two reasons to ventilate; one is for life and the other is for fire.** There are several ways and types of ventilation, but the ventilation is only performed for one of those two reasons.

Venting for fire is used to enhance the advancement of the engine company, remove the products of combustion from the fire building, and to increase visibility for the members performing searches. *Venting for fire needs to be coordinated with the engine companies' advancement and is performed after water is established to the handline.* The easiest, quickest and least complicated way to ventilate for fire is by breaking windows. The ventilation can start from the fire area and work back towards the advancing engine or, if conditions dictate, at and adjacent to the area where they are entering the building. Care must always be taken to avoid venting behind the advancing engine crew as this could cause fire to light up behind them.

Positive pressure ventilation (PPV) and positive pressure fire attack are two additional methods of venting for fire. These are more advanced tactics that have been

adopted by the fire service as cure alls. Before a department adopts either method of fire attack they have to ensure that everyone involved understands the times to use and not to use these methods. A study done several years ago by the Orange County Fire Department in Florida, who are proponents of using PPV came up with a list of times when not to use it. This list included balloon framed buildings, when there was no control of natural openings upon arrival of the fire department, (too many windows or doors already opened) and if you did not know where any trapped victims might be. Also added to this list should be if any member is performing a vent enter search operation. PPV does have places where it works but should be evaluated on individual fires, case-by-case, to assure that it will help and not hinder the operation.

Both breaking windows and PPV are forms of horizontal ventilation. Vertical ventilation is also important at some fires. Whether or not to send firefighters to the roof of a burning building depends on many factors. The single biggest factor is the skill and experience level of the crew being sent to the roof. If you have not trained your people in throwing ladders, power tool operations, using an axe when needed, ventilation practices, and how to do this safely, then don't send them to the roof! Working above the fire is the most dangerous place that firefighters operate. Sending untrained, non skilled people to perform vertical ventilation is just as dangerous. But if we have the skilled personnel available, send them to the roof. By opening the "top" of the building conditions should improve on the levels below. Start with natural openings; bulkhead doors, sky lights and scuttle covers on flat roofs and skylights or ridge vents on peaked roofs. If additional vertical ventilation is needed then roof openings should be considered. On peaked roofs if your personnel cannot comfortably stand, or do not have a safe platform, either ladder or tower ladder basket to operate from, they should use an axe to open a ventilation hole. For flat roofs power tools always make the operation go quicker. A point for the IC to keep in mind: fire venting from a hole in a roof is a good sign. This is why the holes were cut. It is not a reason to abandon the building.

The other reason we ventilate is for life. Venting for life is usually done before the engine company has water and with a known or expected life hazard in a particular area of the fire building. Venting for life requires another set of skills to be performed safely. The firefighters must understand fire behavior, be able to read smoke and fire condi-



## **LEVELS OF THE INCIDENT TACTICS SYSTEM**

### **Level 1 Incident**

Investigations and outside fires (including brush, rubbish and vehicle fires) that are *normally* handled by a single company.

### **Level 2 Incident**

Fires or incidents in buildings that can reasonably be expected to be controlled by the operation of one handline. Level 2 fires include most of our every day fires: bedrooms, kitchens, and detached garages.

### **Level 3 Incident**

Fires that will require more than 1 handline to attack and control, but usually not more than 3, and that are restricted to one building, or the original fire building and the exteriors, radiant heat damage, of any exposures.

### **Level 4 Incident**

Fire that will require numerous handlines and/or master stream devices to control the incident, or incidents where there is fire in more than 1 building.

### **Level 5 Incident**

Long term operations that usually span large areas and that require multiple resources to bring under control. These operations border on natural disasters due to their size and complexity and would include aircraft crashes, large wildland fires, oil refinery fires etc.

tions, and must be able to search under adverse conditions. This operation is commonly referred to as VES, or vent enter and search, and after operating above a fire, is usually considered the next most hazardous place we can put our firefighters.

In the first 3 levels of the ITS the first-to-arrive company officers should maintain crew integrity and operate with their respective crews. The 2nd due engine officer, after assuring the 1st engine has a water supply established, can now assume command until a chief arrives.

A *Level 4* incident is one where numerous handlines and/or master stream devices will be needed to control the incident, or where there is fire in more than 1 building. A fire that has control of several stores in a strip mall, a fire in row of frame buildings with several already involved, or a vacant building burning that is exposing other homes are all examples of a Level 4 incident.

When arriving at a level 4 incident the first-to-arrive officer should establish command and start to assess the incident in an attempt to contain the fire. Many Level 4 operations start out as defensive operations, since the fire has a head start on the department. Decisions on where to

attempt to stop the fire spread should be made by protecting life first and then property. As additional help arrives, and the incident escalates, resources should be allocated to reinforce these initial operations. Once a chief officer arrives the company officer should rejoin his crew.

At a *Level 5* operation the first-to-arrive officer should also establish command as these operations are long term operations that usually span large areas and will require multiple resources to bring under control. Starting out with a strong command presence is the only way to keep the incident from getting away from us.

As we look at the 5 levels of the ITS we can see that the first 3 levels basically are for offensive fire attack and that the company officer should remain with the crew for safety and efficiency. Getting the first line in service should be the number 1 priority on the fireground for all operations. Levels 4 and 5, because of the amount of fire, or the size of the fire problem, will usually mean that the fire will start as a defensive attack, until the fire area is established and fire growth is contained or halted. Because of the amount of resources needed to do this the first-to-arrive company officer, at these incidents, should establish command and run the incident until a superior officer arrives.

One important fact to keep in mind when viewing the ITS as a tool for your firefighting is that each level leads to the next. If an inexperienced company officer underestimates an event and treats it as a Level 2 incident, any subsequent arriving officer, either an additional company or chief officer, can easily upgrade the event to the appropriate level. The ITS is not intended to replace the ICS but it is intended to give operating companies a starting point for safer and more efficient operations based on tactics.

**TRAINING SAVES LIVES  
FIREFIGHTERS**

# **TENETS OF THE MODERN FIREGROUND**

## **TENET #1**

The company officer is the backbone of the American Fire Service. Because of this these individuals need to be among the most competent and highly trained individuals in the department.

## **TENET #1**

Nothing should deter from the stretching and operation of the first handline on the seat of the fire.

## **TENET #3**

The most efficient and effective interior fire attack occurs when groups of firefighters are assigned to perform both engine company operations and truck or ladder company operations simultaneously.

## **TENET #4**

Nothing saves more lives on the fireground than the proper placement and operation of the first handline. However, efficient and aggressive searches place a close second.

## **TENET #5**

Proper staffing, training, equipment and strong officers change the variables when using the risk versus reward equation.

## **TENET #6**

There are only two things that a fire department does on the fireground that directly affect the outcome of the fire, or that the fire itself cares about. The first is the application of water; the second is how much air we give the fire; ventilation. Fire departments should always be careful to not introduce more air into a fire building than they have the water to control.

## **TENET #7**

There are only two reasons to ventilate; one is for life and the other is for fire.

