13 Fireground Indiscretions

Read this article if you don't want to kill a fire fighter.

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WARNING TO FIRE OFFICERS!

Reading this article will make you aware of thirteen fireground indiscretions that have killed and injured scores of fire fighters. Disregarding the *13 Fireground Indiscretions* is nothing less than the reckless endangerment of your fire fighters.

Here's the plan…None of your fireground operations will become the subject of a NIOSH fatality investigation report. If this plan is acceptable you are going to appreciate this article. This article will introduce you to '13 Fireground Indiscretions' that have killed and injured many fire fighters. By addressing and factoring the *13 Fireground Indiscretions* you will all but guarantee that future firegrounds will be responder round-trips.

No incident manager can guarantee that a fire fighter won't have a heart attack; no incident manager can guarantee that a fire fighter won't drive under the influence of an adrenalin–testosterone cocktail. However, I can guarantee that the information offered in this two-part series will provide *Incident Management Solutions* (sic: IMS) that you won't find anywhere else.

Risk Management
A basic principle of 'risk management' is that once a risk has been identified the risk can be managed. It is no revelation that structural firefighting involves risk. There will always be fireground risk that can not be controlled by incident managers: attitude, chemistry, physics, lifestyle, genetics, gravity, testosterone, etc.

The *13 Fireground Indiscretions* identify critical fireground risks that are manageable. Failure to recognize, factor and address each of the *13 Fireground Indiscretions* is irresponsible.
Of course, it is much easier to identify *problems* than it is to provide *solutions*. No worry, part two (next month) will provide *ten solutions* to these *thirteen problems* (quite a bargain); specifically, part two will provide *The Ten Command-ments of Intelligent and Safe Fireground Operations*. (The *Command-ment* hyphen is intentional.)
Obeying *The Ten Command-ments* will help ensure that the *13 Fireground Indiscretions* do not occur on your fireground.

Before providing solutions (*The Ten Command-ments*) you must first understand the problems; the characteristics of firegrounds that are neither intelligent nor safe; firegrounds that are not *strategically* competent.

Strategically deficient firegrounds exhibit some or all of *T*he *13 Fireground Indiscretions*. The *13 Fireground Indiscretions* routinely emerge during poorly managed fireground operations. Often just one or two of the *13 Indiscretions* transpire; occasionally all thirteen *Indiscretions* are evident. The more *Indiscretions* that emerge the more likely a fire fighter will be injured or killed.

Make no mistake, the *13 Fireground Indiscretions* have contributed to the death of *many* fire fighters. The *13 Fireground Indiscretions* have contributed to exponentially more 'close calls.'

Origin of the Indiscretions
The *13 Fireground Indiscretions* are the product of studying USFA, NIOSH, and NFPA fire fighter fatality investigation reports. (I excluded fatality/injury reports related to lifestyle, genetics, or driving.)

When selecting a report for study I focused on fatalities and injuries that were the result of fire fighters being at the wrong place at the wrong time. Being at the wrong place at the wrong time is manageable; fire officers have the responsibility for ensuring that fire fighters are doing the right thing at the right place at the right time.

As an incident manager there is nothing you can do strategically to control a fire fighter's cardiovascular system, nothing you can do strategically to change a fire fighter's heredity, nothing you can do to change a fire fighter's emotional state while driving. Granted these factors are also important, however, because they are not manageable by incident managers, these factors were not considered.

My attention focused on fireground operations where *the outcome could have been different*.

The drill went like this: I would read a fatality investigation report and make a list of what I believed to be *strategic factors* that contributed to the fatality. Over a period of years and the study of numerous reports I would add additional strategic transgressions to the list.

Here's a nugget: As each new report was reviewed I found less and less to add to the list. Eventually I could find nothing to add to the list. As new reports are reviewed I still can't find new factors to add to the list.

Did you catch the significance of the last statement? *As new reports are reviewed I still can't find new factors to add to the list*. Why do you think I can't find anything to add? Because the same factors are happening over and over—history keeps repeating itself.

I discovered a cluster of strategic indiscretions that have contributed to the death of many fire fighters. I was able to consolidate the list of strategic indiscretions to thirteen: *The 13 Fireground Indiscretions*.

The number *thirteen* represents bad luck; I guarantee that if you address each of the *13 Fireground Indiscretions* you will dramatically improve your fireground 'luck.'

The 13 Fireground Indiscretions

Without further introduction, here are the *13 Fireground Indiscretions*:
1. Lack of pre-incident knowledge and information.
2. Most Significant problem not identified.
3. Inappropriate operational mode.
4. No plan formulated and communicated.
5. Insufficient personnel.
6. Absence of *tactical* accountability.
7. Span of control out of control.
8. Nobody watching the clock.
9. Poor fire growth management.
10. Insufficient gpm for Btu.
11. Fire officers operating at task-level.
12. Random undisciplined communication.
13. No regular, periodic situation reassessment.

Although failure to factor a single *Indiscretion* has killed fire fighters, a single *Indiscretion* is not as likely to contribute to the death of a fire fighter as multiple *Indiscretions*. If you don't believe me just read a few NIOSH, USFA, or NFPA fatality investigation reports and identify how many of the *13 Fireground Indiscretions* were contributing factors. (Once again, be sure to select a fireground fatality that was not the result of lifestyle, genetics, or driving.)

The 13 Fireground Indiscretions
1. Lack of pre-incident knowledge & information
Notice that I did not say: Lack of a pre-incident plan. The first *Indiscretion* refers to strategic development of fire officers *before the incident*. (It is easier to develop a *great* tactician than it is to develop a *good* strategist.)
Sure, a concise and informative pre-incident 'plan' is beneficial, *more important* is personal preincident preparation. Personal pre-incident preparation includes incident management/command competency, a solid foundation of *strategic* building construction knowledge, radio communication skill, secondary sizeup skill, and the ability to quickly develop and implement an incident action plan.

Example: A fire fighter is killed by the failure of a truss. Is the truss to blame? Is the fire to blame? Is gravity to blame? When you peel the 'layers of the onion' the true core cause of the fatality becomes apparent …Why didn't fire officers know the trusses were present? Why wasn't the presence of trusses factored by incident managers? Why was the fire fighter there when the truss failed? Why wasn't someone monitoring the passage of time?

Had fire officers been provided (front-loaded) with comprehensive fire behavior, incident management, and building construction education *before the incident*? You get the idea. It is what fire officers don't know, what fire officers don't factor, and what fire officers ignore that kills fire fighters.

2. Most significant problem not identified

Like dominoes, you will find that one indiscretion triggers another: If no fire officer has *strategically* 'triaged' the fireground (secondary sizeup), the most significant problem will not be identified. This indiscretion has killed many fire fighters. *Strategic* triage—location of fire, status of life safety, construction features, reading smoke, type of occupancy, required gallons per minute, value-time-size, etc.—is more important than *tactical* triage— where to position apparatus, which hydrant to bring, where hoselines will be deployed, which nozzle to select, where ladders will be raised, etc.

Front loaded with pre-incident knowledge and experience, a strategically competent fire officer knows what to look for and understands the significance of what he sees. A strategically competent fire officer understands that the identification and classification of fireground problems is his *primary responsibility*.

Often a superficial 'windshield sizeup' is all that is performed. Specifically, no fire officer took the time to identify and prioritize problems *strategically*.

Pre-incident strategic development coupled with *on-scene* strategic information produces an *informed strategist.* (The antithesis of an informed strategist is an *uninformed tactician.*) The ability to draw from pre-incident knowledge and information during your out-of-cab 'secondary sizeup' is crucial to the development of a strategically competent fireground.

Because you are prepared, you know what to look for. Because you know what to look for you know what the problems are. Because you know what the problems are you know what needs to be done. Because you know what needs to be done you have an incident action plan.

Failure to perform a *thorough* secondary sizeup coupled with lack of pre-incident knowledge and information triggers the third Indiscretion…

3. Inappropriate operational model
Tactics is the easy stuff; strategy is the hard stuff. Autopilot offensive fireground operations will work—for a while… they work fine until that 'threshold incident' comes along, catches your auto-deployed personnel in the wrong place at the wrong time, and nails your fire department right between the eyes. No fire department investigated by NIOSH believed that a fire fighter fatality would happen to them—they certainly didn't plan that it happen.

Often, because of lack of knowledge and information (*Indiscretion* 1.), as well as inadequate sizeup information (*Indiscretion* 2.)—leading to failure to identify the most significant problem (*Indiscretion* 3.)—many of these fire departments were in the inappropriate operational mode.

In other words, they were offensive when the fireground should have transitioned to defensive—or should have been defensive to begin with.
Civilian lives are best protected from *offensive* positions. Fire fighter lives are best protected from *defensive* positions. What is disturbing about fatality investigation reports is that the majority of the incidents did not involve a civilian life safety problem.
The life safety problem was delivered to the incident aboard shiny red fire apparatus.

4. No Plan Formulated or Communicated
Evidence of this Indiscretion: Fire officers arrive and establish personal operational modes (*strategic* freelancing) and implement individual action plans (*tactical* freelancing). Even worse, fire fighters implement their own action plans (*task* freelancing).

Operating in the offensive mode without an incident action plan *is* freelancing.
Everybody needs to know the operational mode, the overall plan of action, and their role and responsibility within the margins of the mode and plan. Operating outside the margins of the mode and action plan is freelancing.

It takes time to develop and communicate an incident action plan based on strategic information. Not a great deal of time, but it does require *poise* and *confidence* to take the time. By all means you must take the time.

5. Insufficient Personnel
Here the autopilot, routine operation suddenly isn't routine any more. Without sufficient resources available for the unexpected, the fire department becomes the victim. Often a fire department will initiate a 'big city' fireground operation without the resources to support such an operation. Corners are rounded such as ignoring two-in with two-out, no safety officer, no rapid intervention, utilities aren't stabilized, no coordinated ventilation, no teams in staging, span of control out of control, no exchange teams ready for immediate deployment, etc.

Please don't initiate a fireground operation that you don't have the resources to sustain. If resources are limited, allow 10 or 15 *offensive* minutes (one SCBA cylinder). If the situation is not stabilized during that time consider transitioning to a defensive operation. Better yet, if you haven't done so, get to know your neighbors and use them.

Many reliable sources (NFA, NFPA, IAFF, etc.) agree that a minimum 'effective force' is around 15 to 20 personnel. Just as often there are big-city fire departments that have more than enough resources available to get all the tactical bases covered, the problem is strategic. Resources simply weren't managed competently. Tactical freelancing is rampant, strategic coordination absent. There are as many action plans as there are companies on scene.

6. Absence of 'Tactical Accountability'
You can get by without a *proactive* accountability system for many years; that is, you can get by without proactive accountability until you need it, and should proactive accountability not be there when you need it you're in trouble.

Worse than an accountability system that is *reactive* is to have an accountability system that isn't used. It's easy to identify a fire department that does accountability but doesn't like doing it: they *dump* responsibility on an 'accountability officer.' (See *Indiscretion* 12.)

Here's the problem: Reactive personnel accountability systems are designed to quickly identify missing and dead fire fighters. (Raise your hand if one day you hope to use your accountability system to do what it was designed for—to quickly identify a missing or dead fire fighter.)

As designed, the existence of reactive accountability systems infer that there are going to be missing and dead fire fighters. Accountability should be proactive, not reactive. I want you to add a new phrase to your vocabulary: *Tactical Accountability*. If by design personnel accountability is *reactive*, then tactical accountability is by design *proactive*. A tactical accountability system will proactively account for Teams and Companies: *Who–What–Where–When–Why*:

Who is there, *What* they are doing, *Where* they are, *When* they entered the hazard area, and *Why* they are doing *what* they are doing *where* and *when* they are doing it.

It is impossible for a Team, Company, or individual fire fighter to be 'tactically accounted for' if they are freelancing. For example consider the tactical accountability of an engine company operating at Main Street Command:

Who = Engine-1
What = Confine and Extinguish
Where = From Side-A on Floor-2
When = Entered the hazard area at 0230
Why = Because Main Street Command is *Offensive* from Side-A on Floor-2.

As shown above, Engine-1 is *tactically accounted* for. All accountability systems will identify who is at the incident. A handful of systems identify where everybody is at any given moment. I know of only one system that will account for every Team, Company, and individual fire fighter throughout the course of an incident: the *Integrated Tactical Accountability System.* It doesn't matter if there are 10 fire fighters or 1,000 fire fighters on scene, the *Integrated Tactical Accountability System* (ITAC) will continuously, seamlessly, with little effort help incident managers achieve and maintain tactical accountability — without batteries, without wires, and without expensive hardware. (More on 'tactical accountability' in part-two of this series: *The Ten Command-ments of Intelligent and Safe Fireground Operations*.)

7. Nobody Watching the Clock
This *Indiscretion* has killed far too many fire fighters. The typical scenario goes something like this: fire located in a basement/attic…fire fighters operating above/below the main body of fire…no civilian life safety problem…fire department refuses to yield offensive positions…*nobody is watching the clock*…ignored minutes elapse…the structure fails…the bagpipes play…repeat six months later in another part of the country.

Both NFPA 1500 and 1561 'require' that dispatchers provide 10-minute notifications to the command post—beginning with the arrival of the first officer on scene.

Of the *13 Fireground Indiscretions*, failure of fire officers to factor the passage of time is arguably the most critical strategic fireground factor. The informed strategist factors the passage of time into the overall strategy and incident action plan. The reactive tactician ignores the clock and reacts to problems as they emerge. Team Leaders must consider time, distance, and exertion as essential components of SCBA 'air management.' Time, distance, and 'suddenly deteriorating conditions' have killed many fire fighters in unoccupied buildings.

8. Random, Undisciplined Communication
Post Incident Analysis routinely identify 'communications' as a fireground problem.
Try this: Visit *The Firefighter's Bookstore* website (www.firebooks.com). Search for a book/manual that specifically addresses fireground communication. (Not dispatcher info or communication hardware.)

Specifically seek a reference that addresses how and when to communicate on the fireground; what to say on the radio and how to say it—how to impart the establishment of a Division, how to convey a status report, how to communicate a search operation, how to communicate an abandon the building, how to coordinate an emergency roll call, etc. Allow me to spare you time and frustration, you won't find one. Isn't it amazing that the most persistent and consistent fireground problem has never been formally addressed by the North American fire service? There are lots of books, manuals, and articles exploring strategy, tactics, pumping, hose, nozzles, ladders—even what's-in-your-pockets.

Question: How often has NIOSH or USFA identified an empty pocket as a significant fireground problem?
Answer: Never.

Question: When was the last time you identified communication as a fireground problem?
Answer: When was your last fire?

9. Poor fire growth management
Visualize freelancing fire officers and fire fighters implementing personal 'action plans' (*Indiscretion* 5.) Now picture a fire fighter with axe in hand walking by a big window. Smoke swirls behind the glass. The fire fighter looks at the axe, looks at the window, looks around, swings the axe and breaks the window. Why? *Just because.* Freelancing fire fighters breaking windows should make the competent incident manager furious. The breaking of a window by a freelancing fire fighter can quickly convert a coordinated fireground into a spastic fireground.

Consider the wood burning stove: If you want to make the fire in the stove get bigger you open the damper. Opening the damper provides *horizontal ventilation*. Horizontal ventilation causes the fire within the stove to intensify. Close the damper (un-ventilate) and the flames magically disappear. Given fuel and heat, fire growth is governed by oxygen. The fire in the stove *will not grow* until the damper is open.

It is important to remember that a wood stove has a large vertical ventilation opening: the flue. Which would be more 'comfortable' for a theoretical fire fighter: to be in the stove vertically ventilated or horizontally ventilated? (Neither option would be comfortable.) What would happen if you closed the flue and opened the damper? (In your mind, play with the possible combinations.) Fire is fire.

Available oxygen governs fire growth. For every cubic foot of air *consumed* by a fire 537 Btu will be generated. Increasing the cubic feet of air available to a fire produces a commensurate increase in heat as the oxygen is consumed. Fire growth is not magic, it's chemistry and physics.

Strategic consideration: When you control ventilation strategically you control the fire. Lose control of ventilation tactically and you will quickly lose control of a fire strategically.

10. Insufficient gpm for Btu
This is simply the selection and deployment of low flow handlines that are operated without strategic benefit. The typical scenario plays out as follows: The main body of fire has not been identified (*Indiscretion* 3.), there are insufficient resources to support the offensive operation (*Indiscretion* 6.), nobody is watching the clock (*Indiscretion* 8.), and deteriorating/escalating conditions are ignored (*Indiscretion* 13.), thus catching unsuspecting fire fighters 'by surprise.' Insufficient gallons per minute coupled with poor fire growth management (*Indiscretion* 10.) can quickly transform routine room and contents into an impressive magazine cover.

Contemporary, petrochemical-based fireloading requires that big water be applied early. Most fire departments park 1,500 gpm of heat removal capability at the curb and stretch a 150 gpm handline to the fire. According to my fingers and toes that leaves 1,350 gpm of heat removal potential at the curb!

Fire doesn't know the difference between fog, straight, solid, low pressure, or high pressure…Fire is not influenced by how impressive your nozzle looks.

What impresses a fire is *gallons per minute*. The strategic math is very simple: When you apply more gpm than there are Btu, *you win*—and you'll win every time! (Add foam and you increase the strategic benefit of each gallon applied.)

What's really cool (no pun intended) is that by converting one-gallon of water to steam it is possible to generate 1,700 gpm of heat removal/oxygen displacement potential. During conversion to steam, one gallon of water is capable of producing 223 cubic feet of steam.

Here are some other cool facts about water:
• At room temperature, *without* steam conversion, one-gallon of water applied directly onto a fire will absorb 1,200 Btu.
• Completely converted to steam that same gallon of water will absorb 9,283 Btu. (More than a 750% increase in heat removal capability!)
• A 100 gpm hose stream, completely converted to steam, will absorb 928,000 Btu *per minute*.

• The same 100 gpm hose stream completely converted to steam will generate 22,300 cubic feet of steam *per minute*! (22,300 cubic feet can be compared to a room measuring approximately 50-feet x 50-feet x 9-feet.)

Once again consider the wood burning stove: Visualize a well developed, free burning fire in the stove. The stove door is open. You have a one-gallon bucket of water next to the stove. There is a tube (say EMS oxygen cylinder tubing) extending from the bucket to a child's water pistol. You start pumping the trigger of the water pistol and water begins to flow from the bucket through the squirt gun and onto the burning logs. Because there are more Btu than gpm the bucket of water will not extinguish the fire (until the fuel is consumed). Because the stove door is open, steam conversion will not be a factor.

As an alternative, suppose you chose to hoist the same bucket and throw the entire gallon of water onto the burning logs. What will happen? You will completely extinguish the fire. (You will also make a big mess.) Same bucket. Same gallon of water. Same fire. *Different gallon per minute application.* Different outcome.

Borrowing the words big-water guru Paul Shapiro: "Just blast it!" In other words, don't leave your heat removal potential at the curb. After all, somebody called 911 so that you would respond, arrive, remove the heat, and clean up the mess so that they can get on with their life.

11. Company Officers operating at task-level

Granted, *occasionally* a Company Officer (Team Leader) must *briefly* drop down to the task level. However, a situation that should not be tolerated is a Company Officer/Team Leader operating at task level while Team Members (fire fighters) watch. This role reversal creates a dangerous situation.

Should a Company Officer seek the entertainment value of operating a nozzle or chainsaw then suggest that the individual be demoted and reissued a yellow helmet. Operating nozzles, tools, and equipment is the role of a fire fighter, not the role of a Company Officer. I suggest you begin by making sure *everybody* understands their fireground role and responsibility—fire fighters, Company Officers, and Chief Officers.

There is an *invisible* strategic chain that links task-level, to tactical-level, to strategic-level. At the *task-level* the strategic chain is connected to the Team. At the *tactical-level* the chain is connected to a Division/Group Supervisor (or whomever has that responsibility). At the *strategic-level* the chain is connected to a Branch Director, to the Operations Section Chief, or (more likely during a single address, square-foot fireground operation) directly to the Command Post. When all Team Members—including the Team Leader— are operating at the task-level the strategic chain is severed.

There needs to be a strategic presence with the Team. This strategic presence is the Team Leader. The Team Leader monitors progress, monitors conditions, monitors remaining SCBA air, monitors the radio, and looks for alternate egress. When the Team Leader is at task-level nobody is looking out for the Team. Everybody is focused on the task. Make sure your Company Officers know how to be Team Leaders.

12. Span of control out of control

At the core of fireground span of control that is out of control is an incompetent Incident Commander. One indicator is a Command Post laboring to track each and every company (or worse fire fighter) throughout an the course of an incident (*Indiscretion* 7.).

If span of control isn't being managed at the Command Post where is it being managed? Get personnel accountability out of your Command Post!

Yet another indicator is the designation of an 'accountability officer.' (*Indiscretion* 7.) Accountability is a contemporary component of competent incident management. Managing an incident means managing span of control. If you haven't yet done so, seamlessly integrate accountability into your incident management system.

Another reliable indicator is the 'Groucho Commander.' Have you ever watched one of the old Marx Brothers movies? Picture a hunched over Groucho Marx striding back and forth, one arm behind his back, the other holding a cigar to his mouth. Instead of the cigar picture a portable radio…

Migratory incident commanders are too overwhelmed and emotionally attached to the incident to be anchored at a Command Post managing strategy, resources, and risk. When span of control is out of control it is impossible for the *Groucho Commander* to keep track of *who* is there, *what* they are doing, *where* they are, *when* they entered the hazard area and *why*.

13. No regular, periodic situation reassessment

Closely related to *Indiscretions* 1., 2., 3., and 8., once a fireground operation is set in motion it continues until something bad happens or the incident is stabilized.
A reliable indicator is the absence of regular, periodic, structured status reports. Other indicators include offensive operations without a time limit (see *Indiscretion 10.*).
It is impossible for a migratory Groucho Commander to manage the clock, span of control, an incident action plan, regular status reports, mode confirmations, and periodic situation assessments.

Bottom line: It is impossible for an *uninformed* reactive tactician to be an *informed* proactive strategist.

Your Call To Action
How many of you have experienced a fireground operation where one or more of the 13 *Fireground* Indiscretions were transgressed? I have no doubt that *every* fire fighter reading this article will (be honest now) answer 'yes.'

With over 200-years of North American firefighting and incident management experience, why are there still fireground operations that repeat one or more of the *13 Fireground Indiscretions*? The time has come for *un*intelligent and *un*safe fireground operations to be considered *un*acceptable. Don't allow your fire fighters to become *victims* of the *13 Fireground Indiscretions.* I challenge you to learn from the indiscretions of the past in order to prepare for your *next* alarm. Then, when mistakes are made (and they will still be made), these *Indiscretions* will be identified and not repeated! Consider the following…

COMMAND-O QUIZ
When and where did four fire fighters die during a fire at an *unoccupied* car dealership when *unprotected* steel bowstring trusses failed?

ANSWER
1968 at *Yingling Chevrolet* in Wichita, Kansas.

Gotcha! How many of you answered 1988 at *Hackensack Ford* in Hackensack, New Jersey? Five Hackensack fire fighters were killed when *timber* (not steel) bowstring trusses failed during a fire at an *unoccupied* car dealership. Repeating mistakes is unacceptable — particularly mistakes that result in the death of fire fighters because of the *13 Fireground Indiscretions*.

Ultimately, fire officers make decisions that place fire fighters in the wrong place at the wrong time. Worse, fire officers don't make any strategic decisions—allowing fire fighters to place themselves in the wrong place at the wrong time (*freelancing*). Often freelancing is formalized and called 'preassignments.'

Until something changes, the most dangerous element on any fireground will continue to be the uninformed, inexperienced, overly aggressive fire officer.

Do you remember the plan at the beginning of this article? *The next incident that you manage will not become the subject of a NIOSH fatality investigation report*. If this plan is still acceptable, I implore you to heed the information offered within this article. If you ensure that the *13 Fireground Indiscretions* are factored and addressed—managed and not ignored—you will all but guarantee that future firegrounds will be a round trip for responders. Ignoring the *13 Fireground Indiscretions* is nothing less than the reckless endangerment of your fire fighters.

Part Two
Solutions to the 13 Fireground Indiscretions: *The Ten Command-ments of Intelligent and Safe Fireground Operations.*

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