

By MARK EMERY

“13

*Read This Article
If You Don't Want To
Kill a Firefighter*

FIREGROUND INDISCRETIONS”

“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



Here's the plan: None of your fireground operations will become the subject of a firefighter-fatality investigation report. If this plan is acceptable, you will appreciate this article, which introduces you to “13 Fireground Indiscretions” that have killed and injured many firefighters. By addressing and factoring these problems, you will all but guarantee that future firegrounds will be responder roundtrips.

Risk Management

A basic principle of “risk management” is that once a risk has been identified, it can be managed. It is no revelation that structural firefighting involves risk. There will always be fireground risk that cannot 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 them is irresponsible.

Of course, it is much easier to identify problems than it is to provide solutions. No worry, part two will provide 10 solutions to these 13 problems; specifically, “The Ten Commandments of Intelligent and Safe Fireground Operations.” Obeying them will help ensure that the “13 Fireground Indiscretions” do not occur on your fireground.

Strategically deficient firegrounds exhibit some or all of the “13 Fireground Indiscretions.” They routinely emerge during poorly managed fireground operations. Often, just one or two of them transpire; occasionally, all 13 are evident. The more that emerge, the more likely a firefighter will be injured or killed. The number 13 represents bad luck, but addressing each of the “13 Fireground Indiscretions” will dramatically improve your fireground “luck”:

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1. Lack of pre-incident knowledge and information.

1.

Notice that it does 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 pre-incident preparation. Personal pre-incident preparation includes incident management/command competency, a solid foundation of strategic building construction knowledge, radio communication skill, secondary size-up skill, and the ability to quickly develop and implement an incident action plan (IAP).

Example: A firefighter 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 firefighter 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 firefighters.

2. Most significant problem not identified.

2.

Like dominoes, you will find that one indiscretion triggers another: If no fire officer has strategically “triaged” the fireground (secondary size-up), the most significant problem will not be identified. This indiscretion has killed many firefighters. 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

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knowledge and experience, a strategically competent fire officer knows what to look for and understands the significance of what he or she sees. A strategically competent fire officer understands that the identification and classification of fireground problems is his or her primary responsibility.

Often, a superficial “windshield size-up” 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 size-up” 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 size-up, coupled with lack of pre-incident knowledge and information, triggers the third indiscretion.

3. Inappropriate operational mode.

3.

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 the National Institute for Occupational Safety and Health (NIOSH) believed that a firefighter fatality would happen there – it certainly wasn’t planned.

Often, because of lack of knowledge and information (Indiscretion 1), as well as inadequate size-up 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. Firefighter 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.

4.

Evidence of this indiscretion: Fire officers arrive and establish personal operational modes (strategic freelancing) and implement individual action plans (tactical freelancing). Even worse, firefighters 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.

5.

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 sup-

port such an operation. Corners are rounded, such as ignoring the “two-in/two-out rule,” 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 self-contained breathing apparatus (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 – the National Fire Academy (NFA), National Fire Protection Association (NFPA), International Association of Fire Fighters (IAFF), etc. – agree that a minimum “effective force” is 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 firefighters. As designed, the existence of reactive accountability systems infer that there are going to be missing and dead firefighters. Accountability should be proactive, not reactive.

Let’s 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 and why:

- Who is there?

- What are they doing?
- Where are they?
- When did they enter the hazard area?
- Why they are doing what they are doing – where and when they are doing it.

It is impossible for a team, company or individual firefighter 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 2:30 A.M.
- 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. Only the Integrated Tactical Accountability System (ITAC) will account for every team, company and individual firefighter throughout the course of an incident. It doesn’t matter if there are 10 firefighters or 1,000 firefighters on scene, ITAC will continuously, seamlessly and with little effort help incident managers achieve and maintain tactical accountability – without batteries, wires or expensive hardware. (More on “tactical accountability” in part two.)

Origin of the “13 Fireground Indiscretions”

The “13 Fireground Indiscretions” are the product of studying firefighter fatality investigation reports from the National Fire Protection Association (NFPA), National Institute for Occupational Safety and Health (NIOSH; see page 136) and U.S. Fire Administration (USFA). When selecting a report for study, the focus was on fatalities and injuries that were the result of firefighters 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 firefighters 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 firefighter’s cardiovascular system, nothing you can do strategically to change a firefighter’s heredity and nothing you can do to change a firefighter’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.

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.

I discovered a cluster of strategic indiscretions that have contributed to the death of many firefighters; thus, I was able to consolidate the list of strategic indiscretions to 13: the “13 Fireground Indiscretions.”

—Mark Emery

7. Nobody watching the clock.

This indiscretion has killed far too many firefighters. The typical scenario goes something like this: Fire located in a basement/attic...firefighters 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 firefighters in unoccupied buildings.

8. Random, undisciplined communication.

Post-incident analysis routinely identify “communication” as a fireground problem. Try this: Search the Internet for a book or manual that specifically addresses fireground communication (not dispatcher information or communication hardware). Specifically seek a reference that addresses how and when to communicate on the fireground. Spare your 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: 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 firefighters implementing personal “action plans” (Indiscretion 5). Now picture a firefighter with axe in hand walking by a big window. Smoke swirls behind the

glass. The firefighter looks at the axe, looks at the window, looks around, swings the axe and breaks the window. Why? Just because. Freelancing firefighters breaking windows should make the competent incident manager furious. The breaking of a window by a freelancing firefighter can quickly convert a coordinated fireground into a spastic fireground.

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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 firefighter, 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 firefighters “by surprise.”

Insufficient gallons per minute coupled with poor fire-growth management 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 nozzles. 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

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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 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 by 50 by nine 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 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. Don't leave your heat-removal potential at the curb.

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 (firefighters) watch. This role reversal creates a dangerous situation.

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entertainment value of operating a nozzle or chainsaw, then suggest that the individual be demoted. Operating nozzles, tools and equipment is the role of a firefighter, not the role of a company officer. I suggest you begin by making sure everybody understands their fireground roles and responsibilities – firefighters, 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 the person who 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 firefighter) throughout 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 an old Marx Brothers movie? 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 and 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.

LESSONS LEARNED

- Structural firefighting always involves risks. Learn to identify and manage fireground risks.
- Learn from past fireground mistakes. Study fireground fatality, injury and "close call" reports. Repeating mistakes is unacceptable, particularly those that result in firefighter deaths and injuries.
- Don't allow firefighters to become victims.

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 firefighter 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 these indiscretions?

The time has come for unintelligent and unsafe fireground operations to be considered unacceptable. Don't allow your firefighters to become victims. Your challenge is 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: When and where did four firefighters die during a fire at an unoccupied car dealership when unprotected steel bowstring trusses failed? Answer: 1968 at Yingling Chevrolet in Wichita, KS. (Gotcha! How many of you answered 1988 at Hackensack Ford in New Jersey? Five Hackensack firefighters 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 firefighters.)

Ultimately, fire officers make decisions that place firefighters in the wrong place at the wrong time. Worse, fire officers don't make any strategic decisions, letting firefighters place themselves in the wrong place at the wrong time (freelancing). 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 you ensure that the "13 Fireground Indiscretions" are factored and addressed – managed, not ignored – you will all but guarantee that future firegrounds will be roundtrips for responders.

Next: "The Ten Command-Ments of Intelligent and Safe Fireground Operations."

