



May, 2019 Edition

THE FIRE LINE

Fond du Lac Fire/Rescue Monthly Newsletter

FIRE LINE - DO NOT CROSS

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FROM THE BALCONY

A message from Chief Peter O'Leary



Another Measure of Excellence

March 14, 2019 was a day I wish the Center for Public Safety Excellence (CPSE) was in town to witness Fond du Lac Fire Rescue's (FDLFR) excellence in action. What started out as a somewhat routine call for a house taking on water with resident needing assistance to dry land, turned into a major flooding event which lasted for the next 36 hours.

From the moment the first call was received, FDLFR began planning for what was playing out in front of us, meanwhile assuring our physical resources (personnel) and our rescue equipment were ready for deployment. As our personnel began answering calls for service related to the storm behind the scenes FDLFR opened up an Emergency Operations Center (EOC) at fire station one. As decision makers from city government, law enforcement, engineering, public works and emergency management gathered, we were building up for what proved to be a large-scale event. The coordinated response of physical assets is always a challenge so that a duplication of work doesn't happen and to make certain that signals don't get crossed and something is missed by all agencies working the flood emergency. This is why a well-organized EOC is critical to operational efficiency.

Two challenges were almost immediate: First, we had to come up with a plan to remove huge ice chunks from the Fond du Lac River due to imamate flooding which was threatening critical infrastructures adjacent to the river. The first task was to evacuate the apartment building at 101 Western which had nearly 100 residents. Not only would we need to set up transportation for them, we needed a place for them to stay for an extended period of time. This is where an effective EOC comes into play. School busses were already on the road taking kids to school so we were able to secure several busses to transport the residents. The second part of the equation was where we would be able to take them. The County and Red Cross were able to set up an emergency shelter at the Fond du Lac County Fairgrounds.

While fire crews assisted 101 Western residents to awaiting busses, crews consisting of Fond du Lac DPW, Alliant Energy and several private contractors began the daunting task of physical removing huge chunks of ice from the river. While this was taking place rescue crews were called to rescue youngsters from the YMCA (which was rapidly taking on water) and bring them to dry land. From there other calls of flooding concerns and help needed by many. By now we had called back all available off-duty personnel and the flooding event was ramping up. It was "all hands on deck".

It was about 4:30 p.m. on Thursday when AC's and I met at the forward command post to discuss the operation and determine our needs. We agreed that a MABAS Box Alarm was needed and that we needed to divide response groups by territorial locations. Once we decided on a plan of action, the EOC was briefed and we began to implement our plan and it went off without a hitch. At the height of our response we had multiple fire rescue agencies in our city responding in a coordinated fashion which limited any freelancing while ensuring a safe operation. There were too many rescues to count, but we were being measured every step of the way. As you know, we are going up for re-accreditation in 2020. I wish the assessors were with us that day to see FDLFR put into practice the things we say we can do. I would say we put on a critical incident management clinic!

Sometimes when we do our jobs, we are put to the test. The flood of 2019 did just that. I was not around for the flood in 2008, but I cannot think of a better team of professionals than the one we had assembled together working as one to protect our citizens. I am grateful for everyone's safety during the mission and for the way everyone involved worked together to bring a positive ending to a most difficult day. I continue to be proud to be working alongside the very best which makes up our fire rescue agency. What an amazing team we have!

Until Next Month, Be Safe and Be Well

INSIDE THIS ISSUE:

| | |
|--------------------------|-------|
| From the Balcony | 1 |
| "Smells and Bells" Calls | 2-3 |
| Operations by the Number | 4 |
| The Code Summary | 5-6 |
| Leading Firefighters | 7 |
| News from the Station | 8 |
| Fire Prevention | 9-10 |
| New Construction | 11 |
| Safety Tip | 12 |
| Peer Fitness Tips | 13-15 |
| Brat Fry Poster | 16 |

UPCOMING EVENTS

Friday, May 3rd
IAFF Local 400
Brat Fry

Tuesday, May 21st
EMS Open House



May 27, 2019

FOND DU LAC FIRE RESCUE OPERATIONS

By: Assistant Chief Erick Gerritson



6 steps to a better tactical approach to 'smells and bells' calls

The pre-planning, equipment and exit strategy you need to keep your crew from being the next casualties of a seemingly routine call. In this article, we're going to discuss a type of call that every fire department is very familiar with, the smell of something burning in a structure. Over the years, too many of these seemingly innocuous calls have progressed into serious fires that have claimed the lives of firefighters and officers. After reading this article, you should have a clear understanding of how to avoid such an outcome.

How many times have we seen these words used in a NIOSH firefighter fatality review or in a news article: "Light smoke or nothing showing upon arrival of the first units."?

Too often, when the building's occupants first call 911, they tell dispatch that they've been smelling smoke for a while, but don't see any fire. Or when the first unit arrives on scene, the company officer's initial interview with the building's occupants yields the same information.

In either scenario, we respond to these types of calls often enough that most fire department personnel have given them a nickname; "smells and bells," and it's not because they have any degree of affection for such calls (the term "nuisance call" comes to mind).

KNOW FIRE HISTORY AND LEARN FROM IT

But it's that kind of attitude that has led to disastrous outcomes for firefighter and officers in the past, and will in the future, unless you and your personnel take a positive approach to those calls. That's because some other details we see too often in those NIOSH reports are: "Suddenly the whole place turned black and firefighters became disoriented and lost contact with each other." That was the sequence of events in these three firefighter LODD fires:

- March 1996, two Virginia Beach (Va.) firefighters die when the roof collapses during a fire in an auto parts store in the early afternoon.
- February 2000, two Houston firefighters die when the roof collapses during a fire in a McDonald's restaurant during the early morning hours.
- November 2002, three Coos Bay (Ore.) firefighters die when the roof collapses during a mid-day fire in an auto parts store.

Each of these fires made an impression on me as a fire officer at the time. And here's what I learned from them:

- Fires can burn undetected in attic spaces, cocklofts or the void between an original flat roof and a newer pitched roof.
- Lightweight construction for roof systems (wood trusses, plywood I-beams, and steel web I-beams) has gained popularity and it doesn't take long for fire impingement on those structural members to cause failure.
- HVAC units and other heavy equipment located on the roof exacerbate the failure of the roof system once fire impingement begins. This equipment is frequently not visible from the street because of false parapet walls used for aesthetic purposes when the structure was built.



FOND DU LAC FIRE RESCUE OPERATIONS

By: Assistant Chief Erick Gerritson



6 steps to a better tactical approach to 'smells and bells' calls, continued...

TACTICAL CONSIDERATIONS FOR SMELL OF SMOKE INVESTIGATIONS

1. **Electrical service:** Does the structure have three-phase electrical service? When a structure loses one of those phases, the motors for any electrical equipment powered by that service begin to bog down and increased friction can cause rubber belts to start slow-burn degradation. Many a squirrel has bought the farm by tripping one of the external fuses located on the electrical pole providing service to the building. This should be the first thing to check and rule out.
2. **Equipment:** Before entering the building to begin your investigation, make sure you and your crew have the following equipment:
 - Several pike poles.
 - An A-frame ladder.
 - A TIC.
 - A charged 1¾-inch hose line with enough hose to make an effective stretch to the deepest part of the building (good fire officers are pessimists by nature and always expect the worst).
3. **Exit strategy:** Always begin your investigation with a clear exit strategy. Clearly identify all means of egress (doors and windows) for the structure, and communicate to everyone where those available exits are before committing personnel to the interior for any tasks.
4. **Check the ceiling:** If there is a drop-ceiling in the structure, begin your investigation by pushing up ceiling tiles with a pike pole every 10 feet to check the area above the ceiling for smoke as you and your crew enter the structure. Use the TIC to look for any heat signatures present; you'll likely encounter smoke before you find any fire.
5. **Limit personnel:** Limit the number of personnel inside the structure to the minimum needed to accomplish the above tasks. If conditions deteriorate before you find the seat of the fire, you want to have the smallest number of personnel that need to be accounted for.
6. **Evacuate when necessary:** If smoke starts to appear beneath the drop ceiling, immediately evacuate all personnel from the interior and conduct a personnel accountability report for all crews on scene. This appearance of smoke, where previously there was none, indicates that there's a significant fire somewhere above the drop-ceiling, and it's too late to do anything about it from the interior with personnel working below that suspended ceiling. Don't let history repeat itself with you and your personnel in a featured role.

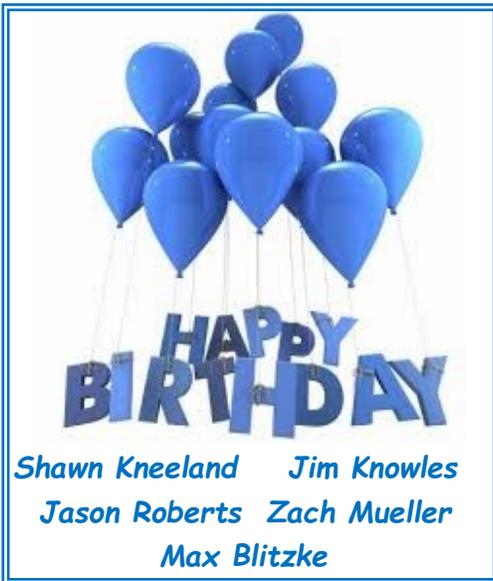
Practice these tips and knowledge...share them with your personnel and help them develop a proactive approach to those "smells and bells" calls. And remember "The clock that really matters is not how quickly you get to the fire, it's how long that fire has been degrading the ability of the structure or its components to resist gravity."

Article by Robert Avsec, of firecue1.com

Until next month...Be Safe!!

OPERATIONS BY THE NUMBERS

| MARCH | THIS MONTH | | YEAR-TO-DATE | |
|----------------------------|-------------------|------------|---------------------|--------------|
| | LAST YEAR | THIS YEAR | LAST YEAR | THIS YEAR |
| PREVENTION | | | | |
| Total Inspections | 260 | 257 | 821 | 963 |
| Total Defects | 188 | 137 | 579 | 452 |
| SUPPRESSION | | | | |
| Alarms Involving Fire | 14 | 14 | 37 | 30 |
| Fire Mutual Aid Given | 1 | 1 | 4 | 3 |
| Fire Mutual Aid Received | 1 | 0 | 1 | 0 |
| Service/Good Intent Calls | 42 | 45 | 123 | 127 |
| False Alarms & False Calls | 18 | 28 | 68 | 104 |
| Other Calls | 11 | 14 | 34 | 46 |
| Total Fire Alarms & Calls | 85 | 101 | 262 | 307 |
| EMS | | | | |
| Total Ambulance Calls | 512 | 564 | 1462 | 1576 |
| Total Fire & Ems Responses | 597 | 665 | 1723 | 1883 |
| Fire Property Loss | \$38,800.00 | \$7,900.00 | \$94,200.00 | \$116,638.00 |
| Fire Contents Loss | \$61,202.00 | \$2,200.00 | \$71,722.00 | \$34,101.00 |
| Engine Assisted EMS Calls | 219 | 241 | 638 | 659 |



National Arson Awareness Week
Preventing Arson At Construction Sites
May 5 - 11, 2019



The Code Summary

*By: Todd Janquart
Assistant Chief of EMS*

Improving EMS Patient Care with Communication Technologies

Nationally, leaders of the fire service/emergency management have been working diligently to provide a quick and reliable network of voice and data communication to support our efforts. While still in the early stages, FirstNet is up and running but still in its infancy as far as potential goes. This is a great article that discusses some of the planning that has gone into FirstNet and the desired outcome with regard to improvement of emergency services in general. Imagine the amount of information that could be collected and shared through the chain of survival if all these ideas and devices are fully developed! The technology does exist; it is just a matter of implementation. We will definitely see some great changes within the next few years.

A Q&A with Deputy Executive Director of the National Public Safety Communications Council Barry Luke. We sat down with Chief Barry Luke, Deputy Executive Director at the National Public Safety Telecommunications Council (NPSTC), to discuss how new communications technologies benefit EMS patient care.

Chief Luke has more than 44 years of experience in public safety communications as a firefighter, paramedic and police officer. He's well known in the public safety community as a vocal advocate of Next Generation 9-1-1 (NG911) and respected leader on emergency communications. He also supported the development of the new resource, NG911 For Leaders in EMS.

Q: Communication technologies are developing at a rapid pace. How will two significant ones, NG911 and FirstNet, work together?

A: NG911 and FirstNet are complementary systems that will help prioritize and route data coming through public safety answering points (PSAPs). FirstNet provides a high-speed nationwide public safety broadband network, allowing first responders and public safety agencies to communicate with each other. NG911 is the critical IP-based communications system that will link emergency callers with public safety agencies. It's the first piece of the puzzle that allows 9-1-1 access via voice, wearable technology like smart watches, or building sensors, all of which can send rich data to PSAPs. NG911 is the first half of the critical communication ecosystem that takes information from the public to the PSAP. The FirstNet network then delivers the information to first responders. They are two important systems whose full benefits are realized then they integrate and work together.

Q: What do you see as the key benefits of NG911 for EMS Providers?

A: Its main priority is to improve the safety and efficiency for both EMS and patients. By moving to an all-digital NG911 system, PSAPs will be better able to accommodate emerging technologies such as: those that improve the accuracy of the patient's exact location, those that provide data on how fast their car was traveling before the crash, or patient medical telemetry from body worn devices. It saves vital seconds, minutes, and sometimes hours off of an EMS response to a serious emergency call, and that's how we help serve our communities more efficiently. As for EMS personnel, NG911 will provide essential pre-arrival data for them to ensure they can do their job and save lives to the best of their ability.

Q: Are we seeing the benefits of some of these technologies already? Are 9-1-1 centers and EMS agencies using new technologies now?

A: Technology that we thought was going to be available in five to 10 years from now is already coming into the marketplace. New medical and patient care technologies are being brought to market every day—at this point, we can only predict how these new technologies will eventually impact EMS. But, with what has already been seen, there are exceedingly high expectations for what is to come.



MIT [Massachusetts Institute of Technology], for example, is developing a medical sensor bra that performs the equivalent of a 12-lead ECG and monitors the patient for signs of cardiac distress. It will communicate with a patient's smartphone if something abnormal is detected. NG911 will allow for that alert to be communicated to the PSAP if the patient developed a life-threatening arrhythmia.

The Department of Homeland Security has facilitated development of a vital signs sensor that looks like a large bandage. It can be used in mass care situations to detect pulse, respiration, pulse oximetry, inferred blood pressure, shock index and single-lead ECG. There are so many other devices and technologies being developed for both patients and EMS, and each new innovation brings an even better one to life. Our job is to make sure they all work together for the benefit of the public and EMS community.



The Code Summary

*By: Todd Janquart
Assistant Chief of EMS*

Improving EMS Patient Care with Communication Technologies, continued...

Q: Can you explain more about how these technologies will help provide more accurate pre-arrival data for providers?

A: It's going to vary from situation to situation, but in almost any emergency, these technologies will help EMS prepare for anything faster and more efficiently. If an EMS crew gets a call about a possible stroke victim, they can receive comprehensive information about the patient while en route. The dispatcher could be getting vital signs from the patient's smart watch or heart monitor. Once on scene, paramedics could have a video consultation with a physician to confirm the best destination for the patient, such as a hospital or dedicated stroke center. Then, paramedics can alert the staff at the receiving hospital that a patient will soon be arriving, so they can prepare necessary resources. That notification could include patient telemetry and provide more meaningful data than a voice call to the hospital. Not only does this help reduce time and miscommunication when relaying patient information, but it also significantly improves the patient's outcome and quality of life after treatment.

EMS scene safety is enhanced through the sharing of situational awareness data where law enforcement, fire and EMS can exchange information on unit locations, hot zones, and other tactical information. Liability is reduced when the EMS crew can use a body camera to document a patient's refusal of care, or to document patient care and disposition of valuables.

There's a significant enhancement of EMS unit efficiency when the right resources are sent to the right call.

Q: Can you address the continuity of patient data and how these new technologies might help? We are collecting and sharing data now (at some level). How will that improve?

A: Today, patient information may be gathered by fire department first responders who arrive on scene first. Additional patient information is gathered when EMS personnel arrive. In other cases, the patient is handed off to an EMS transport crew or an aeromedical provider. When the patient finally reaches the emergency department, the only patient data that is typically available for the hospital staff is the data which the transport crew collected. NG911 and FirstNet will enable seamless sharing of patient data between all agencies who have patient contact. A video clip captured during the 9-1-1 call that shows the patient's facial drooping might be very helpful to the ED physician in determining the time window for stroke treatment. True success with data sharing depends on more than technology. There's a need for data standards and cost effect interfaces and exchange systems.

Q: How do we receive the new data and how do EMS agencies process data coming from different sources? Is the data reliable?

A: Data interoperability is the biggest challenge we will face. Vendors create their own data structures and there is no standard on what you should call the field that records the patient's heart rate. So, when Application A is trying to send data to Application B, all sorts of things have to be worked out in advance. Anyone who has lived through the transition from one computer-assisted dispatch (CAD) system to another knows the challenges involving matching historical data to the new system format.

A determination must also be made about the level of trust for any data set. Data coming from an EMS agency AVL [automated vehicle location] system is probably trusted. Patient data coming from the hospital's EHR [electronic health record system] is trusted. What about data coming from the assisted living facility's patient monitor? What about data coming from the consumer grade Apple Watch? Machine Learning and AI [artificial intelligence] can eventually help determine the degree of trust. For example, a faulty sensor may indicate that the patient is in v fib but other sensors show the patient is still walking down the street. EMS agencies will have to modify and adapt their response protocols to deal with all sorts of new sensor driven alerts, including a decision to either not respond in some instances or defer the initial response to law enforcement or another agency.

Article from March 20, 2019 online edition of the Journal of Emergency Medical Services

Most folks are as happy as they make up their minds to be.

Abraham Lincoln

**Well trained people
are the best defense
against fire.**

By: James Knowles III
Assistant Chief Training/Safety

Leading Firefighters

The Text Books Don't Have All the Answers

Officers are faced with the difficult task of leading their personnel every day they report for duty. For us, success or failure can have ramifications well beyond what most people are used to experiencing. Everyone will have a different approach to how they lead and certainly when it comes to leading firefighters one size does not fit all. With that being said, here are a few tools that I have used over the course of my career.

It is always about THEM:

We must never forget that the sole reason why the fire department exists is to serve our community. The fact that we reap the benefits of membership, be it as an employee or a volunteer, is a privilege we need to always respect. Our mission is to show up on the worst day of someone's life and fix their problems. People call the Fire Department to restore a sense of security during threatening times, not to recite a laundry list of why we can't do that. If you have a member who thinks someone's emergency is interfering with their day, deal with that. That member has the whole thing backwards and if you don't step up to address that, that attitude can become the accepted norm.

Mission focus, every day, all the time:

We all have the off day. We all have our best intentions interrupted by life. Officers need to ensure that their people leave their other issues in the parking lot and are all in for duty. Hold a roll call every morning at the front of your rig. You are the boss so even if this is not department policy, you can set the tone for your day. Spend a few minutes talking about what the company will do, what actions you will take if you catch a hot job. Who will be responsible for what tool? Do you lay in for smoke showing or does 2nd due bring you a line? When you start the day with a mission focus, it is much easier than trying to find that focus 9 hours into your shift.

Everyday should be a training day:

If you have people under your command then you need a long term plan for their training. If you are the officer that shows up and just wings it, you have sent a very strong message to your folks that training doesn't really matter. Great companies can execute the basics flawlessly and this only happens as a result of constant training. Training must also look at those rare type incidents that are few and far between. Good companies tend not to be surprised, and one of the reasons is that they have trained for all the alternatives.

People give you what they see:

Charles Barkley, the professional basketball player, once said "I'm no role model". Well guess what...you are. Your gear should be the first set on the rig, and when the bells hit you should be the first one to the rig. You don't need to shine your shoes to the point where you can see your reflection, but your uniform needs to look squared away. You need to be physically fit period. If you haven't seen your feet in the last decade get in the gym. You must accept the fact that everything the leader says or does receives the scrutiny of their subordinates.

THEM includes your subordinates:

If you are going to get your folks to the point where they want to follow you, they must feel like you care about them! The high performing companies rarely rely on orders, they simply follow their leader. It is also true in those companies the leader takes both the time and effort to invest in their people. The leaders are always looking for ways to help their people. They ask questions about and get to know about their subordinates lives. Families, birthdays, and how well a son or daughter did at a tee ball game or a swim meet have importance to the leader. Each member of your command is different, with different goals and different opinions. Learn about your people. If they want to promote, you know what it takes so help them enjoy the same success you have experienced. This can be very time consuming, but it is an absolute necessity.

It's not fun, but when needed make the choice:

In his book *A Warrior's Path*, Robert Trivino makes the point that leaders will often be faced with the choice between the "hard right and easy wrong". Trivino also says that when faced with this dilemma there really is only one choice, the hard right. If you are not willing to make this choice and do the hard right, you have no business being an officer. I often find myself in this position, and even after decades serving as an officer it is still a less than enjoyable thing to do. Your community, your organization, and our profession depends on you having the courage to do this so do not let them down.

Leading firefighters can be one of the most rewarding aspects of your career. It can also be a very difficult and trying endeavor.

Every officer should lead with this thought in the back of their mind: "*The future chief of this department is working for me and he/she will learn how to lead from the example I give them*". Good luck and enjoy the privilege of serving as an officer.

Source: Reilly, D. (2019). *Leading firefighters*

News from the Station



Congratulations to newly promoted Lieutenant Bobby Scott! Bobby was sworn in by City Clerk Maggie Hefter and pinned by his father, Chuck. Congrats Bobby!



Gov. Evers was recently in Fond du Lac to tour the damage caused by the flooding which occurred on March 14th. The Governor stopped first at FDL Fire/Rescue to thank the first responders. He also got a briefing on what triggered the flooding. Gov. Evers was joined at the podium by City Manager Joe Moore and County Executive Alan Buechel who also thanked the firefighters for working tirelessly, hour after hour, to make sure everyone remained safe.



Miss Wisconsin, Jillian Sesing, stopped by Station 1 to donate stuffed animals to be carried on our ambulances and used to calm children during emergencies. Thank you Miss Wisconsin for your thoughtfulness and generosity!



FF/P Laura Kettelhut participated in a lunch and learning with the young ladies at Riverside Elementary to talk about her career as a female firefighter. The girls had fun trying on Laura's turnout gear.



FDL Fire/Rescue had an informational booth at the FDL Agriculture Showcase which was recently held at the Fairgrounds Expo Center. Sparky made some new friends and had fun playing on a garden tractor that was being showcased.

FIRE PREVENTION

That's what it's all about!

**By: Troy Haase
Division Chief of Fire Prevention**



Understanding the UL 300 Kitchen Fire Suppression System Requirements in NFPA 17A

If you operate a commercial kitchen, you know how important your fire suppression system is to protecting your kitchen and the people that work in it in the event of a fire. Regular inspection and maintenance as required by the 2017 Edition of the National Fire Protection Association (NFPA) 17A Standard for Wet Chemical Extinguishing Systems is critical to keep your system in good working order.

In this article, we provide a summary of the requirements in NFPA 17A for pre-engineered wet chemical fire-extinguishing systems. These include the fire suppression systems that are incorporated into the types of hoods, ductwork, and cooking appliances that are found in most commercial kitchens.

The Standard provides guidance on many aspects of pre-engineered wet chemical suppression systems and this article does not offer an exhaustive review of all the requirements in the Standard. Our goal is to provide you with the basic information you need to ensure that your kitchen wet chemical suppression system will function properly so that you can have the confidence that your system is in compliance and will function properly when you need it.

Chapter 5 Wet Chemical System Requirements

This chapter describes system requirements of pre-engineered wet chemical fire-extinguishing systems common to commercial kitchens. With pre-engineered systems, the flow rates, nozzle pressures, and quantities of the extinguishing agent are already set for each nozzle based on where it is placed within the system and the size of the area the system is intended to protect. Pre-engineered wet chemical systems may be used to protect:

- Restaurant, commercial, and institutional kitchen hoods
- Plenums, ductwork, and filters of cooking appliances
- Grease removal devices
- Odor control devices
- Energy recovery devices installed in the cooking appliance exhaust system

Section 5.1.2 is of key importance to ensuring your system functions properly at all times. This section covers the fire suppression systems specifically for your hoods, ductwork and cooking appliances, all of which must comply with the standards provided by the ANSI/UL 300, Fire Testing of Fire Extinguishing Systems for Protection of Commercial Cooking Equipment.

Key features of your system as required by the NFPA 17A include:

- The ability to function simultaneously – Each appliance and every individual hood and branch exhaust duct connected to a hood must be protected by your system. Whether your system protects each one separately or in some combination, all systems must function simultaneously in the event of a fire anywhere in the kitchen.
- Shutoff devices that automatically shut down any and all sources of heat, fuel and electric power that could feed a fire (4.4.1).
- A means for manual actuation – Even if your system is fully automated, you still need the ability to activate it in the event of a power outage. Systems protecting a common exhaust ducts do not require a manual actuator.
- Automated systems requiring electrical power to operate should have monitoring devices built into them to alert you when the system is not functioning properly. They should also provide a visible or audible signal to indicate when the system has been actuated and is now in need of the inspection.
- If your fire suppression system protects an area that is also served by a fire alarm system, the two systems must be connected so that any activation of your fire suppression system will also trigger a fire alarm.

Drawings of your system installation may or may not be required by the AHJ in your community. The code requires keeping them on file because they provide a fuller understanding of your system, making it easier to perform the required inspections. A full set of drawings would include illustrations and information for all of the following:

- Appliances, hoods and exhaust ducts
- The interface between all of your fire-extinguishing system detectors
- Piping and nozzles and containers for storage of wet chemical suppressant
- Fuel shutoff devices and manual actuation devices

7.2 Owner's Inspection

It is important to understand that the responsibility for inspection, testing, maintenance, and recharge of your fire suppression system ultimately falls to the owner of the kitchen in which it resides. Understanding how to maintain your system in good working order is important to ensuring that it offers the protection you need.

FIRE PREVENTION

That's what it's all about!

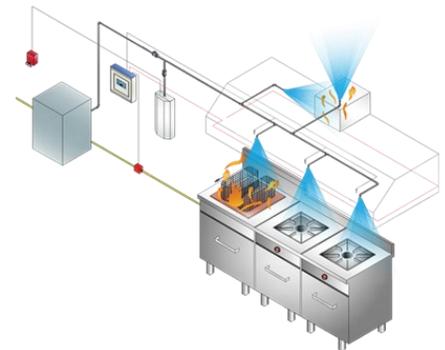
**By: Troy Haase
Division Chief of Fire Prevention**



Understanding the UL 300 Kitchen Fire Suppression System Requirements in NFPA 17A, cont.

You should be inspecting your system at least once a month in accordance with the manufacturer's directions. However, at minimum, these inspections should include the following steps:

- Ensure that the extinguishing system is in its proper location and that neither the protected equipment nor the hazard has been replaced, modified, or relocated
- Make sure nothing is obstructing the manual actuators and that they haven't been tampered with (this will be evident from a visual inspection of the tamper indicators)
- Check to see that the maintenance tag or certificate is still in place
- If your system has one or more pressure gauges, you'll need to check to make sure it is within its operable range.
- Look at your system's nozzle blow-off caps, too, if it has them to make sure they are intact and undamaged.
- You're also going to be looking for any signs of damage to the system or maintenance issues that might impair its ability to function properly.



7.3 Maintenance

Monthly inspections are an important tool to ensure that your system stays in good working order. But, inspections do not eliminate the need for routine maintenance of your system. NFPA 17A requires a full inspection of your system at least twice a year (semiannually) and after any activation.

Like your monthly inspections, these inspections must follow the manufacturer's guidelines. However, they are much more comprehensive and detailed in nature and as such, require more time and expertise than monthly inspections do. At minimum, these inspections require the following:

- An evaluation of your system from a hazard perspective – Has the hazard changed in any way that might make the system less effective?
- An examination of every component of your system – This includes your fire detectors, the containers that hold the extinguishing agent, your system's releasing devices, piping, hose assemblies, nozzles, and signals as well as any auxiliary equipment.
- A check of the agent distribution piping throughout your system – are there any obstructions that might prevent the release and/or proper flow of extinguishing agent?
- An examination of the wet chemical in your system – If there is any evidence of corrosion or pitting or structural damage to the cylinders, the chemical may not feed properly through your distribution system and should be replaced and the system recharged.

Regardless of the type of inspection, whether monthly or semiannual, any problems identified must be properly documented and corrected immediately to ensure the proper functioning of your system at all times.

7.5 Hydrostatic Testing

Hydrostatic testing is another important part of wet chemical extinguishing systems because many kitchens may never experience a fire sufficient to trigger the system. While this is a good thing, it means that absent a fire, the only way to verify your system will in fact function properly when you do need it is to test it. This is why, with few exceptions, the NFPA requires hydrostatic testing at least once every 12 years for the following components:

- Wet chemical containers
- Auxiliary pressure containers
- Hose assemblies

Each of these components must be subjected to a hydrostatic test pressure that is equal to that for which the system was designed. The test must be conducted for at least 30 seconds and any additional time it takes for the cylinder to become completely expanded as this is necessary to perform a proper visual inspection. During the test, the goal is to ensure that no leakage, rupture or movement of hose couplings occurs. After testing, any wet chemical agent removed from the containers prior to testing must be discarded, and all the equipment tested should be thoroughly dried.

Source: Koorsen Fire & Safety, "Understanding the UL 300 Kitchen Fire Suppression System Requirements in NFPA 17A", January 22, 2018, Web April 8, 2019.

FIRE PREVENTION

That's what it's all about!

**By: Troy Haase
Division Chief of Fire Prevention**



Current Status of New Construction

- CD Smith Corporate Offices on Camelot Drive- Building is under construction.
- VGM Storage Units at 450-456 West Arndt St.- Buildings are under construction.
- Mercury Marine Plant 17 at 545 W. Pioneer Road- Building is under construction.
- St. Vincent De Paul at 330 North Peters Avenue- Building is under construction.
- Eilertson Electric at 920 Willow Lawn Road- Excavation is underway.
- South Hills at 1175 Fond du Lac Avenue- Building is under construction.
- Fairfield Inn at 935 S. Rolling Meadows Drive- Building is under construction.
- River Hills Mixed Use Development on S. Main Street- Buildings 1, 2, 3, 4, 8 are complete and 5 & 6 are under construction.



Safety with Oily Rags

wet with flammable or combustible liquid



Oil-based paints, stains, and varnishes are often used for home improvement projects. It is common to use rags to wipe up spills or clean brushes. But wet rags can ignite on their own. They can start a fire if not handled carefully. The same is true of the liquids themselves.

How can rags start a fire?

The oils commonly used in oil-based paints and stains release heat as they dry. If the heat is not released in the air, it builds up. That is why a pile of oily rags can be dangerous. As the rags dry, the heat is trapped. The heat builds up and finally causes a fire. Be aware that this does not happen with water-based finishes.

How can liquids start a fire?

Vapors from flammable and combustible liquids can ignite, causing a fire. There are many commonly used flammable liquids. Gasoline, lacquers, and nail polish are just a few examples. There are many commonly used combustible liquids. Paint thinner, kerosene, and oil-based paints and stains are some examples.

RAGS WET WITH PAINT AND STAIN

- Never leave cleaning rags in a pile. At the end of the day, take the rags outside to dry.
- Hang the rags outside or spread them on the ground. Weigh them down. Do this so they do not blow away. Make sure they are not in a pile. Keep them away from buildings.
- Put dried rags in a metal container. Make sure the cover is tight. Fill the container with a water and detergent solution. This will break down the oils.
- Keep containers of oily rags in a cool place. Keep them out of direct sunlight. Keep them away from other heat sources. Check with your town for information on disposing of them.

LIQUIDS THAT CAN CATCH FIRE

- Flammable and combustible liquids should not be used near an open flame. Do not smoke when working with these liquids.
- If you spill liquids on your clothing, remove your clothing and place it outside to dry. Once dry, clothing can be laundered.
- Keep liquids in their original containers. Keep them tightly capped or sealed. Never store the liquids in glass containers.

GASOLINE

- Use gasoline only as motor fuel. Never use it as a cleaner. Never use it to break down grease. Never bring gasoline indoors, even in small amounts.
- Store gasoline ONLY in a container that is sold for that purpose. Make sure the container is tightly capped when not in use. NEVER store gasoline containers in a basement or in the occupied space of a building. Keep them in an outbuilding, a detached garage, or a shed outdoors.

FACTS

- ! An average of 1,600 home fires per year are caused by instances of spontaneous combustion or chemical reaction
- ! An average of 800 home fires per year are started when oily rags catch fire or are ignited.



NATIONAL FIRE PROTECTION ASSOCIATION
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PEER FITNESS TIPS

By: Peer Fitness Trainer
Jack Prall

How to Practice Proper Posture in the Modern Era

Have you noticed the difference in people's posture that's occurred over the past few years? You may have noticed that even kids' posture is beginning to look a lot like the posture of someone much older—with rounded shoulders and upper back, and the chin jutted forward.

There are even terms coined for this body position—tech neck or text neck.

"The term 'text neck' has become increasingly prevalent in describing the effects of extensive phone use," says Jennifer Ruoff, M.S., OTR/L, director of Occupational Therapy Clinical Services for *FOX Rehabilitation*. "Text neck describes the tendency for people to tilt their head and neck down toward their phones when they are in use. The stress caused by bending your neck at this angle carries down and increases pressure on your spine and can push the ligaments beyond their limit. Over time, the ligaments and tissues around the spine begin to break down and spinal discs can become pressed, causing pain and a change in the spine's overall pattern."



Veronica Sutherland, owner of *Pilates and Movement Therapy Studio* in Orange, NSW, Australia, and the 2017 Bio-mechanics Method Corrective Exercise Specialist of the Year, reminds us that our bodies are a kinetic chain. "We are a one-piece machine, so failure in any part of the chain has a cascading effect."

As an example, Sutherland says that a forward-head posture affects the neck, upper back, chest and shoulders. "The cascading effect is the rounding of the low back, tucking of the pelvis and resulting hip dysfunction," explains Sutherland. "[Considering this posture in a standing position], we have locked knees, tight calves and inactive glutes."

She also points out that for every action, there is an equal and opposite reaction. For example, when the upper-back muscles are excessively rounded forward, the effect on the chest muscles is a shortening and tightening.

"In the case of the low-back muscles being overstretched as the pelvis tucks under, the abdominal muscles collapse and can no longer support the spine. It is the same for every muscle group," Sutherland continues. "This misalignment is not only muscular, it places [excessive] load on joints, as well as leading to such conditions as disc degeneration, spurs, bursitis—and many other things that end in '-itis.'"

Though normally not a concern for health and exercise pros, poor posture also affects the internal organs and their function. "Compression on the abdominal organs adds to general dysfunction of these vital organs and their ability to function efficiently," adds Sutherland.

What Does Proper Posture Look Like...and How Do You Get It?

Proper posture shouldn't look like you're in military formation (Chest up! Shoulders back!). Essentially, when standing, think "ears over shoulders, shoulders over hips, hips over knees, and knees over ankles." Naturally, you stop at the hips for sitting posture.

Sutherland suggests sitting with a neutral pelvis. "Neutral pelvis is different for everyone and is most easily found by gently tilting the pelvis forward and back a few times. Keep a very small range of motion while doing this and be aware of how the different positions feel," explains Sutherland. "Neutral is where you find yourself sitting on sit bones and your spine feels the most lifted and supported. In this position, you will feel the abdominals and spinal stabilizers gently engage. This is a sure sign you are in good alignment, as once we slouch, access to these muscles is limited."

Because we spend so much time sitting, the hip flexors shorten, as do the pectoral muscles due to hunching over, making them tight and hypertonic, explains Jonathan Jordan, owner of *Jonathan Jordan Fitness* in San Francisco, Calif. This posture lengthens and weakens the muscles in the back, as well as the gluteals. "This leads to poor movement patterns, compensations, and potentially pain and injury," says Jordan.

So whether you're trying to prevent poor posture or correct it, the process is similar: Open up the front of the body and strengthen the back side of it (see the exercise suggestions offered at the end of this article). *Note:* This does not mean you avoid strengthening the anterior muscles or stretching the posterior ones. The ultimate goal is to create balance between the antagonistic muscle groups.

PEER FITNESS TIPS

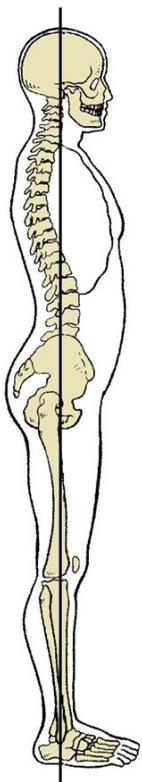
By: Peer Fitness Trainer
Jack Prall

How to Practice Proper Posture in the Modern Era, continued...

Daily Habits to Help Improve Posture

Aside from strengthening and stretching, there are other daily habits that can be worked into anyone's routine.

"You should look for ways to set up your devices in an efficient and effective manner that will also prevent hunching throughout the day," explains Ruoff. "For example, positioning your devices at eye-level or slightly above can help you proactively avoid slouching or hunching toward your device. Most importantly, become body-aware and make adjustments throughout the day to improve your posture. Standing desks and [stability] balls in place of chairs have become increasingly popular tools to help combat hunching at the desk."



"When holding devices, such as phones and tablets, try to lift them to your eyes, rather than dropping your neck," adds Sutherland. "Doing this may feel strange at first, but you can actually build strength doing this!"

Whether you have a standing desk or a traditional seated one, it's important to set it up so that it's ergonomically beneficial, advises Jordan. "When seated, make sure your chair is set up so that your elbows are supported at 90 degrees and your knees are stacked with your ankles," says Jordan. "Maintain your keyboard height even with your elbows, and eyes at arm's length from your screen. When [at a standing desk], tilt your monitor back 10 to 20 degrees, use an anti-fatigue mat, and wear shoes with proper arch support."

Eric Wilson, the 2016 Biomechanics Method Corrective Exercise Specialist of the Year from Apex, N.C., says that overall physical activity is just as important as positioning while on devices. "While the time spent on devices can certainly be a strain on the body, this is not a completely new posture for humans. [Historically], we've done many things that are in a similar position, including watch-making, crafting jewelry, pottery, sewing, knitting, puzzles, reading a book and driving."

That doesn't mean our lifestyles were the same, however. "We used to spend more time moving, playing and being generally more active, which can help negate some of the postural effects of chronic device use, and in turn, would also naturally limit our time on the devices."

Sutherland says that while more formal exercise and stretching certainly helps, that alone may not be enough to counteract six or seven hours a day at a desk, or the average of three hours a day in forward-head posture staring down at our devices.

"Our daily habits, work position and repeated movement patterns are critical," claims Sutherland. "What we do *most* wins! We are training every single moment of every day."

Sutherland feels the most beneficial thing we can do is to learn how to live in good posture and alignment.

"If you do not feel gentle muscular engagement in your core as you sit at your desk, drive your car, reach to the back seat, carry groceries, or pick up the baby, you can assume your joints and connective tissues took the full force. Find alignment and build the endurance in the muscles that we want to be quietly working away all day, every day, to stand, sit and play well."

Exercises to Improve Posture

To strengthen the upper back and rear deltoids:

consider any exercise that involves scapular retraction, including:

- * Any variety of Row
- * I, Y, T, W, O Formation



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How to Practice Proper Posture in the Modern Era, continued...

Additional Exercises to Improve Posture

To strengthen the low-back and gluteal muscles:
consider exercises that involve hip extension and abduction,
as well as back extension and isometric core work, including:

- * Planks
- * Superman/woman
- * Bridging
- * Squats with Hip Abduction



To open up the chest, think scapular retraction:

- * Wall or Doorway Stretch
- * Child's Pose
- * Modified Child's Pose with Hands on Table or Counter
- * Lying Supine on Stability Ball with Open Arms

To Help Release the Hip Flexors:

- * Kneeling Hip Flexor Stretch
- * Supine Hip Flexor Stretch
- * Bow Pose Variation



AUTHOR, Carrie Myers

With 30 years in the fitness industry, Carrie Myers has a degree in exercise science, and is a published author, motivational speaker and a certified mastery-level transformational coach.

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