

# CAHI MONTHLY NEWS



## President's Corner

I want to extend my thanks to the staff at the Well-Xtrol plant that put in the hard work and effort to make our recent trip to Rhode Island a great success. For those of you who were unable to attend, it was incredible and worthwhile trip. Not only was the plant tour informative, the follow up seminar following was well thought out and completely geared towards the home inspection industry. It was a great match for our organization. The free lunch provided was a nice bonus too.

We did however have several members who signed up and committed to attending the event, not show up. This presents several challenging issues including, denying those on the waiting list from attending, additional costs due to transportation arrangements and our host preparations where costs no longer match our commitment. Overall, it's a bit embarrassing to the organization. A lot of time and energy goes into planning these trips and if only a handful of members attend we need to look at other options. We certainly understand that the current economy has caused a drop in inspections and when a call comes in it's very easy to put the work at hand as the priority. I also understand emergencies may come up from time to time but we should all try to adjust our schedules accordingly. The board is looking into several options to prevent any future issues such as this.

I am happy to share that the website is almost completed and will be up and running soon. Everyone will be instructed on its proper use shortly after its completion. As an association, we do have the option to adjust the content and it will be work in progress.

Here is a quick update on logistics surrounding our meeting space. Since the Holiday Inn has increased their price for our meeting room, we are also looking into other locations in the same general area to compare pricing. I have been in touch with the general manager who seems willing to work with us and to come up with one set price as we are now being charged for all coffee refills. The quality of coffee needs to be better as well.

Membership has been increasing and we have picked up several members over the last several months. Thanks to Jim our newly elected secretary for reaching out to past members and getting them to come back to CAHI. We also picked up some members over the phone and through experiencing some of our complementary seminars. I can only say Jim has put in an incredible amount of work since joining the board and definitely will be a fine secretary.

William Kievit has recently been added to the board of directors and served most recently as a committee member. Bill currently heads up the sound system committee and is always willing to lend a hand.

Stan Bajerski is heading up our 20<sup>th</sup> anniversary celebration and we are currently in the planning stages to put together a suitable event. We are looking at September or early October.

Finally we are still looking for members to join the board and help out. We are excited with the progress we have made this year and are looking for some new members to join our effort. It is a great opportunity to learn about the organization, discover best practices in the industry and meet some of the best people in line of work. Please consider joining, as you would be surprised what a rewarding experience it can be.

All the best,

Scott Monforte

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### Meeting Dates

<b>May 23</b>	Topic TBD
<b>July 25</b>	EIFS Installation and Inspection Daniel Canova Sr. of Sto Corp
<b>June 27</b>	Residential Wall Systems/ Building Envelope Justin Farnsworth, Market Manager from DuPont Tyvek.

**Regular Meeting Location:** (otherwise noted)

**Holiday Inn**

**201 Washington Ave.**

**North Haven, CT. (203) 239-6700**

# Photo Gallery

Our recent bus trip to the AMTROL factory in Rhode Island



Can I weld something please?



Can't wait to eat. This guy sure talks a lot



Did security check his back pack?

# Our recent bus trip to the AMTROL factory in Rhode Island



Fine selection of tanks. Can we take one?



Is this a Torpedo?



Members waiting patiently for the presentation to begin. Excellent accommodations by Amtrol

## Inspecting Lawn Irrigation Systems

Seeing homeowners irrigate their lawns by hand is rare; most commonly an automatic sprinkler system handles the day-to-day watering of the lawn areas, flower beds and other landscape features. A sprinkler system inspection checklist ensures that watering takes place on schedule and that the homeowner curtails water wasting. The Environmental Protection Agency (EPA) estimates that each day Americans use approximately 1-1/2 billion gallons of water to irrigate landscapes.



### Visually Inspect Spray Patterns

Professional landscape irrigation system installers configure a sprinkler system to meet the needs of the lawn areas and flower beds that are in existence at the time of the initial installation. Over the course of one or more growth seasons, and perhaps also some landscaping changes, the spray patterns may no longer suit the needs of the plants, while the sprinkler heads may be ineffective. For example, a well-tended lawn consisting of Bermuda grass needs a pop-up sprinkler set to a height of about 3 to 4 inches. Switching the lawn grass to fescue changes the requirement to a range of 4 to 6 inches. Ground cover of medium height needs a 12-inch pop-up sprinkler to affect the ideal spray pattern.



### Search for Broken Components

Encroaching tree roots and harsh winter temperatures may lead to pipe leaks and breaks. Landscaping tasks, such as mowing, edging and tilling, potentially damage sprinkler heads. Thatch buildup in the lawn also can clog sprinkler heads. Visually inspect each sprinkler head and ensure that it is properly connected and operates according to manufacturer specifications. Change out heads that appear damaged.



## Troubleshoot Problem Areas in the Landscape

Brown spots in an automatically irrigated lawn may point to insufficient water pressure. As a general rule of thumb, a pop-up sprinkler requires pressure of 25 to 30 pounds per square inch (PSI) to properly spray water, while a rotating sprinkler needs 30 to 50 PSI. Excess pressure sends the water spray too far from the sprinkler head, which in turn results in brown spots within the landscape. Insufficient pressure limits the radius of the water spray and the areas farther away from the sprinkler heads are brown.



## Verify Timer Settings

Daylight savings time, changes of the seasons and also changes in plantings require an adjustment of an automatic sprinkler system timer. Utah's Division of Water Resources discovered that Salt Lake City residents who relied on automatic sprinkler systems tended to over-water lawns by about 44 percent. Including the timer in the sprinkler system inspection checklist ensures water conservation before the water is ever turned on.



## About the Author

Sylvia Cochran is a regular contributor to DexKnows, specializing in home and garden.

# Know What Your Inspecting – Getting Ready For Air Conditioning

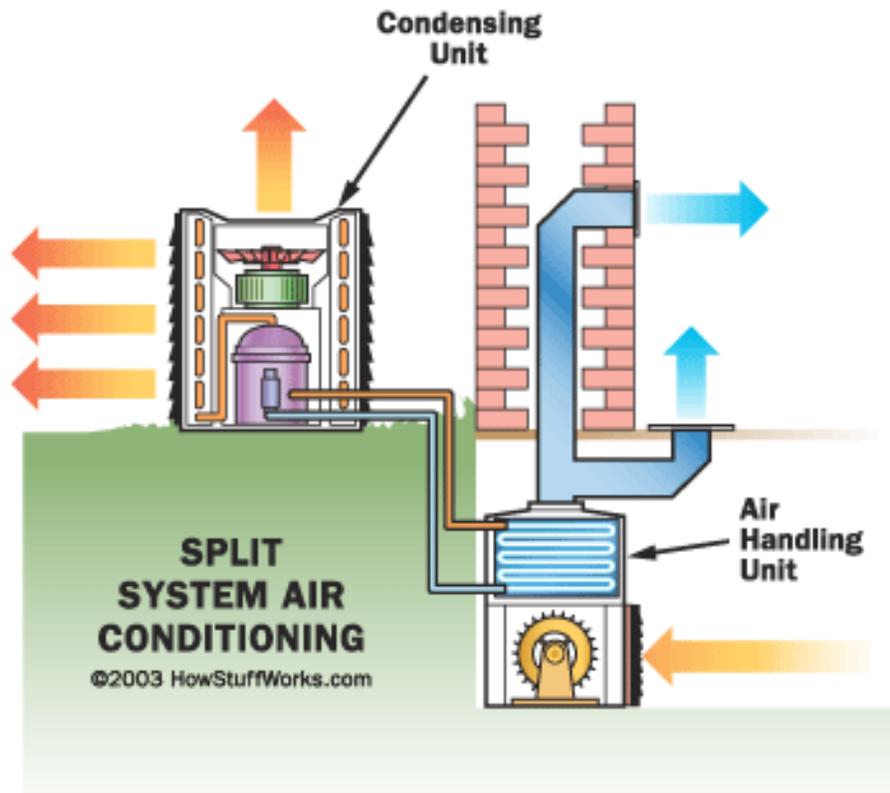
By Stan Bajerski

In no time at all, home inspectors across the state will be evaluating the condition and operation of air conditioning systems. This is a good time to brush up and get prepared for the coming summer.

It still amazes me how little some home inspectors know about air conditioning and how it works. You must know and understand the “refrigeration process” before you can determine how well a system is operating. If you understand how water boils and turns to a vapor when heat is applied, and how the vapor condenses back to a liquid when heat is removed, then you have already begun to understand the refrigeration process. In a nut shell, it extracts heat from one space and dispenses it in another.

## The Components

Lets start with a review of the main components that comprise all air conditioning systems. They are the cooling or evaporator coil, circulating fan, condensing coil, condenser fan, compressor, and refrigerant lines.



The cooling or evaporator coil is located on the interior portion of a window unit, in the air handler of a central air unit, or in the plenum of a warm air furnace. This coil, when used in central air systems is also referred to as the A coil because of its inverted V shape. The circulating fan moves air from the space to be conditioned across the evaporator coil and back into the space. In a central air unit, it is located in the air handler. In a warm air system it is located in the furnace.

The condensing unit is located outside and is comprised of the condensing coil, condenser fan and the compressor.



There is a small diameter refrigerant line inside the condensing unit that connects the compressor with the condensing coil. This is the hot gas line. It carries high temperature, high pressure vapor and is extremely hot to the touch. There are two lines that run from the cooling coil inside the home to the condensing unit outside the home. The smaller diameter, un-insulated line is the liquid line. This line carries condensed low pressure liquid from the condensing coil to the cooling coil. It should be body temperature. The larger diameter refrigerant line is the suction line. It is cool to the touch when the system is operating properly. It should be insulated.

### The Process

If you were to place a pot of water on a flame, water in its liquid form will absorb the heat from the flame. In the process, the water molecules expand. If enough heat is applied, eventually the molecules expand so much that the liquid turns into a vapor. For water, this happens at 212 degrees Fahrenheit. Take that vapor and remove the heat or condense the vapor, the molecules tighten up and go back to a liquid state. The refrigeration or “cooling process” as we will call it for the rest of the article is based on the evaporation and condensation of refrigerants.

Refrigerants are compounds that boil at temperatures must lower than 212 degrees Fahrenheit. R 22, for instance, most commonly used in air conditioning systems for many years, boils off at  $-41.5$  degrees.

When released from an upright canister in temperatures above  $-41.5$  degrees, it will boil off immediately and turn into a vapor. When released in temperatures below  $-41.5$  degrees it will be in a liquid form. The compound freezes at  $-256$  degrees.

The refrigeration/air conditioning system is comprised of components that will help boil and condense refrigerant to remove heat from the air in a conditioned space and release it somewhere else.

Liquid refrigerant is introduced into the cooling coil by a metering device. A capillary tube or thermostatic expansion valve are the most common. The cap tube is a constant meter, the expansion valve is adjustable and is used most with refrigeration. The refrigerant is forced through a small orifice and sprayed into the coil. As the refrigerant enters the coil, it absorbs the heat from the room air being drawn across the coil and boils off. The refrigerant, now a low pressure gas packed with the heat from the room air, is drawn back to the compressor through the suction line, the larger diameter pipe that runs from inside the home to the outside condensing unit. The compressor is the motor located in the outdoor condensing unit. The compressor uses pistons and valves to raise the low pressure gas to a high pressure gas.

This high pressure vapor is pumped through the hot gas line from the compressor to the condensing coil which is part of the exterior condensing unit. Here in the condensing coil, the outside air, which is cooler than the high pressure, high temperature refrigerant gas, is drawn across the coil by the condenser fan, removing the heat absorbed from the conditioned space, releasing it into the atmosphere and condensing the hot gas to a liquid. Put you hand over the condensing fan when a system is in operation. You should feel warmer air. The liquid refrigerant is now pumped back to the cooling coil to complete the cycle and begin a new one.

## What To Look For

When inspecting an air conditioning system, I first do a physical evaluation of the equipment. I check the visible duct work for damage, rust and air leaks. I inspect the plenum on a warm air furnace and the drip pan under an air handler for evidence of leakage or blockage in the condensate lines, among other things. I inspect the condition of the condensing unit noting units that are out of level, condensing coils that are dirty, suction lines that are missing insulation, open electrical boxes, open or loose wire connections etc.

A bit trickier is determining how well the system is operating. I first check the temperature drop across the evaporator coil. Ideally, this should be done at the coil itself.

However, for our purposes, it can be done by measuring the temperature difference between the room temperature and the air coming out of the supply duct. A temperature difference (TD) of 15 to 20 degrees is desirable.

Lower TD's can indicate older, worn compressors, dirty coils, low refrigerant charges among other things. Higher TD's can indicate dirty filters, improper coil size, poor air circulation, etc. Determining the cause of improper temperature differences is best left to an expert.

I also examine the suction line to determine if it is sweating. Condensation should be present and will usually be an indication that the refrigerant charge is full and there is adequate air flow. A frozen line spells trouble. A dry line can again be caused by several conditions. This is always a sign there is a need for a service call.



The sizing of a system is a complicated process and is often mis-calculated. It relies heavily upon window area, location of windows, amount of insulation, orientation of the home, overhangs, tree lines, interior heat loads, etc. Of course, we are not required to determine the capacity of a system or its ability to cool a house efficiently or properly. However, you should keep the following in mind to have a better grasp of the refrigeration process.

We all know that a by product of air conditioning is dehumidification. When a coil or system is undersized, it will remove moisture from the air but will not have the capacity to cool the area. A classic example of this would be a common de-humidifier.

When a coil or system is oversized, it will cool a space quickly, leaving the air humid. This is the theory behind coolers used in flower shops where cooler temperatures and high humidity are needed. Properly sized and functioning air conditioning systems should cycle on and off. In other words, under conditions that they are designed for, they should reach the set temperature and shut off and restart when the temperature rises, just like heating systems. If you are aware of what is going on around you, you may notice that unit runs continuously during your inspection even though the space is not exceptionally cool. This could indicate an excessively high heat load, older compressor, dirty coils, low refrigerant. If it's an average summer day, and the system is not cycling, it is not functioning properly. Keep in mind that high humidity can cause the system to expend more energy on moisture removal.

I use the above mentioned items to help me determine the operation and condition of a central air conditioning system. They help me determine whether or not the system is in need of service currently.

# Know What Your Inspecting – Getting Ready For Air Conditioning

## Part 2: Heat Pumps and Distribution

By Stan Bajerski

In part one of my article on air conditioning , we reviewed the components that make up an air conditioning system, as well as the cooling or refrigeration process by which the system removes heat from a space and releases it somewhere else. We also reviewed some of the conditions that can indicate whether a system is operating properly or not. Just as important as removing heat from the air is getting the conditioned air to the space efficiently. Even though the state standards do not require home inspectors to evaluate distribution in a heating or air conditioning system, it is helpful to know some of the conditions that can adversely affect the distribution of heated and cooled air to a space.

### MOVING AIR

Let's review some basic theories that coincide with moving air through a building. We all know that warm air rises because it is lighter than cool air which is heavier and tends to sink or fall to the bottom of a space. Old gravity heating systems operated on this premise. As the heated air rose into the rooms of the home, the cool air was pushed to large returns at the bottom of the rooms. The addition of motorized fans to the heating system "forced" the air through the cycle, thus the term forced air heating system. Heated air has more volume than cool air because the molecules are expanded. Cool air is heavier so it needs more force to push it where it needs to go. Keeping all this in mind, let's consider a common scenario.

You inspect a home that has central air conditioning and a forced air furnace. You get to the second floor and you notice a window air conditioning unit. Why, you may ask? Heat only furnaces have a one speed fan that is designed to move warmer lighter air through the ductwork. The cool heavier air will not be adequately pushed to the second floor.

To make matters worse, there is only one thermostat, and that is on the first floor. When the temperature is satisfied on the first floor, the second floor is still warm. Even if the system is a package designed for heat and AC, if the home is set up with a single zone, the second floor will not likely be adequately cooled without overcooling the first floor.

Ideally, ductwork would be sized differently depending on the temperature of the air being moved. It would not be cost effective to install two separate sets of ductwork, one sized for warm air and one sized for cool air.



Besides air leaks and disconnected ducts, there are other installation problems that can affect the distribution of air. We often hear of uncomfortable rooms in homes. This can often be the result of long runs of duct with lots of elbows. Be aware that air flow loss from a single sharp turn may be the equivalent to over 50 feet of straight run. Lots of bends and fittings can add up to trouble.

Another problem that I see over and over again is associated with the use of ceiling air supplies and low return on the lower floors of houses. Ceiling supplies are often designed to spread cool air across the ceiling during the hot weather. This is a great idea because cool air naturally falls and the occupants in the room get effective cooling. The problem comes in the winter when the warm air is released at the ceiling... and never comes down. You end up with a warm ceiling and cold floors. You must remove the cool air at floor level with adequate returns.

## **HEAT PUMPS**

I am sure that everyone has experienced a heat pump at one time or another. If you have ever stayed in a hotel or motel, you have likely operated one. Those units under the window with all the buttons for heat and air condition, a heat pump. Heat pumps are primarily air conditioning systems with a component called a reversing valve or three way valve that reverses the cooling cycle. It makes the inside coil, which was the cooling coil for air conditioning, the condensing coil for the heat mode. The outside coil, which was the condensing coil for air conditioning, becomes the cooling coil for the heat mode. Confused? OK. There is heat in the outside air down to -460 degrees Fahrenheit, or absolute 0. By reversing the cycle, refrigerant absorbs the heat from outside. We release it in the home through the cooling coil which now becomes the condensing coil.



Because they are not completely effective in their pure form in our climate zone, heat pumps usually have banks of supplemental electric heat. Some will be called on automatically by the thermostat at a certain temperature, others have to be turned on manually. Because the heat pump performs double duty, operating in the summer and winter, it usually has half the useful life as an air conditioning system. This, along with a high operating cost because of the electric heat, makes them a poor choice for heat in our area.

I do not operate the AC mode of the heat pump in the winter, nor do I operate the heat mode during the summer. I always recommend that a heat pump be serviced by a qualified heat and air conditioning technician prior to purchase to ensure that all components are working properly.

## STOK Gas Grills Recalled by One World Technologies Due to Fire and Burn Hazards

WASHINGTON, D.C. - The U.S. Consumer Product Safety Commission and Health Canada, in cooperation with the firm named below, today announced a voluntary recall of the following consumer product. Consumers should stop using recalled products immediately unless otherwise instructed. It is illegal to resell or attempt to resell a recalled consumer product.

**Name of Product:** Gas Grills

**Units:** About 87,600 in the U.S., 1,400 in Canada

**Importer:** One World Technologies Inc. of Anderson, S.C.

**Hazard:** The regulator on the grill can leak propane gas, which can ignite, posing fire and burn hazard to consumers.

**Incidents/Injuries:** The firm is aware of 569 reports of regulators leaking propane gas. No injuries have been reported.

**Description:** This recall involves STOK Island and STOK Quattro gas grills. The STOK Island has a round grill base and two burners. "STOK" is written on the grill cover and a label on the bottom of the grill stand. The STOK Quattro gas grill is a rectangular, four-burner grill. "STOK" is printed on the grill's lid. To identify whether a specific Island or Quattro grill is included in this recall, you will need to look at the grill's regulator. The recalled grills have regulators on them with the model number "AZF" on the front and a date code between 1046 and 1143 on the back of the regulator.

**Sold at:** Home Depot stores nationwide and in Canada and Direct Tools Factory Outlet stores nationwide from March 2011 through February 2012 for between \$79 and \$350.

**Manufactured in:** China

**Remedy:** Consumers should immediately stop using the recalled grills and contact One World Technologies for a free replacement gas regulator for the grill.

**Consumer Contact:** For additional information, please contact One World Technologies toll-free at (800) 867-9624 between 8 a.m. through 5 p.m. ET Monday through Friday, or visit the firm's website at [www.stokgrills.com](http://www.stokgrills.com)

**Note:** Health Canada's press release is available at [http://cpsr-rspc.hc-sc.gc.ca/PR-RP/recall-retrait-eng.jsp?re\\_id=1445](http://cpsr-rspc.hc-sc.gc.ca/PR-RP/recall-retrait-eng.jsp?re_id=1445)



STOK Island Grill



STOK Quattro Grill

## LED Night Lights Recalled by AmerTac Due to Fire and Burn Hazards

WASHINGTON, D.C. - The U.S. Consumer Product Safety Commission, in cooperation with the firm named below, today announced a voluntary recall of the following consumer product. Consumers should stop using recalled products immediately unless otherwise instructed. It is illegal to resell or attempt to resell a recalled consumer product.

**Name of Product:** LED Night Light

**Units:** About 227,000

**Importer:** American Tack & Hardware Co. Inc. (AmerTac), of Saddle River, N.J.

**Hazard:** An electrical short circuit in the night light can cause it to overheat and smolder or melt, posing fire and burn hazards to consumers.

**Incidents/Injuries:** AmerTac has received 25 reports of the night lights smoking, burning, melting and charring. No injuries have been reported.

**Description:** Three AmerTac night lights are being recalled. Each has a model name and two model numbers. The model name and a secondary model number appear only on the packaging. The basic model number appears on the back of the night light. The night lights are rectangular, about 2-3/16 inches high, 3-1/2 inches wide and 1-1/4 inches deep. The front housings for each are either white- or nickel-colored plastic with four horizontal vents and a round light sensor above the top vent. The backs of the night lights are gray plastic with the AmerTac™ logo, the basic model number, "SY" identification code and "ETL" molded into them. Only models bearing "SY" on the back are being recalled. The following night lights are being recalled:

Model Name on Packaging	Model Number on Packaging	Model Number on Night Light
Amerelle	71190	71190 or 71190A
AmerTac	327895	
Everyday Basics	076092	

**Sold at:** Hardware stores, home centers and lighting showrooms from March 2009 through October 2010 for about \$6.

**Manufactured in:** China.

**Remedy:** Consumers should immediately stop using the recalled night lights, remove them from the wall sockets and contact the firm for instructions on receiving a full refund.

**Consumer Contact:** For additional information, contact AmerTac at (800) 420-7511 between 8 a.m. and 5 p.m. CT Monday through Friday, or visit AmerTac's website at [www.recall-center.com](http://www.recall-center.com) or [www.amertac.com](http://www.amertac.com)



Contact CAHI c/o

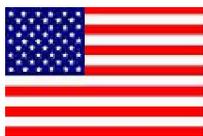
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*Articles published in CAHI Monthly are the sole opinion of the author. CAHI does not endorse or state a position for or against the content of said articles.*

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<b>Director</b>	<b>Dan Kristiansen</b> , Shelton 203-257-0912	They have served as our primary leaders and in other capacities since 1992.  Please thank them for their service when you have a	<p><b>The Licensing Board meetings are held at 9:30 am</b></p> <p><b>Dept of Consumer Protection</b></p> <p><b>165 Capitol Avenue. Hartford</b></p> <p><b>The public is always welcome.</b></p>	
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