



June 2018 Newsletter

Welcome to the June issue of the AFE Chapter 140 newsletter. It not only includes greetings from our President Steve Bellemore, but member meeting details and schedule, our Chapter Board Meeting Schedule, information on our certification programs, who our sponsors are and a technical paper. We are also looking for feedback as to what you would like to see included in the newsletter. A wide variety of technical white papers is available. If you have a certain topic you would like to see covered, let us know.

Please forward comments to either Steve Bellemore at steven.r.bellemore@baesystems.com, or Ed Gagnon at edgagnon78@gmail.com.

AFE Mission Statement

The Association for Facilities Engineering (AFE) is a professional membership and certification organization. We bring together professionals who ensure the optimal operation of high-rise commercial real estate, commercial and industrial plants, campuses of higher education, medical centers, offices at Fortune 500 companies, and (classified/non-classified) government facilities from around the world. All look to AFE as the leading technical and certification resource for facilities engineering. AFE's mission is to provide trade-craft related facilities maintenance industry professionals worldwide.

President's Message

First, I would like to personally invite all members and guest members to join us for our exciting 2018 tours! I am excited to see what great tour this year will bring. It's always a great time socializing and networking with a wonderful group of professionals the ones in AFE Chapter 140! We had several outstanding tours and we are very much looking forward to another successful year in 2018. Association for Facilities Engineering is all about networking and learning as a group of professionals. I've always said "You get out what you put in" and I encourage all of you to attend as many of our monthly meetings as possible and to give your Board of Directors feedback about what you want to see in future tours and meetings. I ask you to please encourage the younger workforce and get them involved in the Chapter events! Even if it's just forwarding on our monthly newsletter so that they see what fun we are having.

We need more youth to help take on some roles and responsibilities going forward. Facilities professionals are retiring everyday with not enough qualified people to back fill the spots. Thank you to everyone who supported and contributed to AFE Chapter 140 in 2017! Please see our website for a list of supporting companies. We are always looking for volunteers to become involved in the board and help plan events and tours. If you are interested, please let one of the Board Members know at the next meeting.

I look forward to seeing all of you at our next meeting!

Steve Bellemore, CPMM
AFE Chapter 140 President
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Upcoming Meeting on June 20

On June 20, we will be having a tour of the brand-new F. W. Webb distribution center in Londonderry. Dennis Ford will be sending a more formal write up later that will be included in the formal meeting notice.

About the new F.W. Webb CD

Hailed as one of the largest facilities of its kind in the state of New Hampshire, the new Central Distribution (CD) facility of the F.W. Webb Company will be nearly one-million-square-foot and employ approximately 140 in Londonderry, NH.

The new facility will replace and be more than double the size of the company's current CD in Amherst, NH. It is being built to accommodate the company's rapid growth and future expansion plans throughout the Northeast. It will provide F.W. Webb customers, serviced by more than 80 locations in nine states, full inventory of the products they need to build, maintain, remodel, repair and run homes, buildings, facilities, plants and processes.

Upcoming Chapter 140 Events

Board Meeting Schedule

All Chapter 140 members are welcome to attend any board meeting. Meetings will be held at the new Electronics for Imaging facility at 12 Innovation Way in Londonderry, just off Pettengill Road near the airport. Meetings start at 5:30 PM.

Board meeting dates as follows:

6-6-18	7-11-18	8-1-18	9-5-18
10-3-18	11-7-18	12-5-18	

Member Meetings Schedule

Member meetings are typically held on the 4th Wednesday of every month.

- May 30 – Tour of Electronics for Imaging, Inc in Londonderry
- June 2^h – Tour of new central distribution center of FW Webb in Londonderry
- July – no meeting
- August – Member night at the Fishercats – Date to be announced
- September 26 - Tour of the Micro Electronics Center at BAE Systems in Nashua
- October 24– Tour of Southern NH Hospital in Nashua
- November/December – Member social date TBD
- January 23, 2019 – Tour of Pat’s Peak ski mountain operations in Henniker

If you have places of interest, or wish to host a tour of your facility, please contact any of the Board Members for Chapter 140.

Our Sponsors



Companies wishing to sponsor our newsletter can do so for \$200, or you can sponsor a chapter meeting. Contact any board member for details on where to send a check and your company logo in jpg format.

Region 8 Events

Certification Programs

The next Certified Professional Maintenance Manager’s (CPMM) certification review and exam is scheduled to take place in Waltham, MA on November 7-8-9, 2018 (Wednesday, Thursday and Friday). Registration is \$1395.00 for non-members; \$995.00 for AFE members.

Bring the CPMM Certification Review and Exam To Your Location.

The review program is now available at your place of work. A minimum number of 6 participants is required for this in-house program. This program saves companies the costs of travel for their employees and travel time. Contact CPMM instructor Ed Gagnon at edgagnon78@gmail.com for more information.

Coming Soon: CPS

Certified Professional Supervisor's (CPS) certification review and exam is coming to Region 8 in 2018. We are excited to be able to add this program to our portfolio of offerings to Region 8. The CPS program is good for both new and experienced supervisors. Many supervisors are promoted or hired into their positions with little guidance or understanding on their role and more importantly the legal side of job they have just undertaken.

We will begin advertising on through Region 8 to pull together a class and will look at offering it twice a year for the region at large. We are also offering it to individual companies, as with the CPMM program, locally in your facility. This feature will save companies the expense of hotel lodging and other travel expense associated with sending people to our Waltham, MA sessions. If you are interested in more information please contact Ed Gagnon.

Region 8 Board Meeting

The next Regional Board Meeting is on June 11 at the Westford Regency Conference Center at 219 Littleton Road, Westford, MA. The meeting will run from 4:30 to 7:00 PM. All AFE members are welcome to attend these meetings. Dinner is provided. Please RSVP via email to Alan Ouellette, our Region 8 VP, at aouellet@filtersales.com or to Ed Gagnon for headcount purposes. Dinner is provided.

Other Region 8 News

We will be sending out another email to all members and contacts to confirm emails and have everyone opt-in for emails from the chapter. This is a requirement from Constant Contacts. Please keep an eye out and follow the instructions.

Region 8 is now also getting requests to present topics of the CPMM program to facilities personnel in private companies and public institutions. We are limiting the presentations to only one or two topics. The presentations do NOT count towards a CPMM certification, but CEU's will be given for the presentation time. Each topic will encompass about one hour of presentation time.

An example of this new service is we are presently working with a public institution to go over the Safety and Documents sections of the CPMM program with emphasis on the legal liabilities for facilities professionals in safety response and compliance documentation. Presentations are done by AFE authorized CPMM instructor Ed Gagnon. Contact Ed at edgagnon78@gmail.com if you are interested in more information.

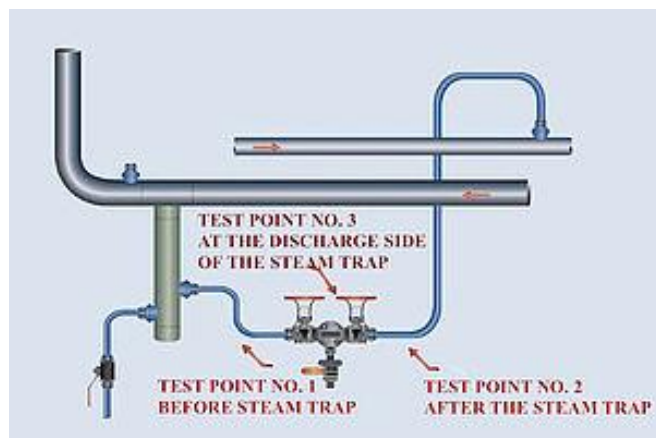
Technical Paper:

Successfully Testing Steam Traps with High-Frequency Ultrasound

From PlantEngineering.com; April 2018; reprinted with permission.

A field-proven comparison method will provide an accurate test on each steam trap by using three or more test points on the steam trap station.

Kelly Paffel, Inveno Engineering
04/27/2018



When using high-frequency ultrasound, the main question is where the sensitivity should be set to conduct the test. If the testing instrument is set to too high a sensitivity, all the steam traps will test as failed; using too low a sensitivity will indicate that all steam traps are operating properly.

The solution is to use a field-proven comparison method, which will provide an accurate test on each steam trap. The comparison method uses three or more test points on the steam trap station. Two of the test points are the sensitivity baseline settings on the ultrasound unit, and the third is for testing the steam trap. The comparison method allows the steam trap station assessor to establish a base reading to filter out any competing ultrasounds that can be generated upstream or downstream of the steam trap. Without using the comparison method of testing, it is very difficult to assess the steam trap's performance because the assessor will not know the correct sensitivity setting. Each steam trap will be in slightly different installations and situations in the steam system, so the

comparison method is the most accurate method for setting the ultrasound sensitivity.

With the stethoscope module, contact each point on the steam trap station, as shown in Figure 1. The steam and condensate line should have baseline test points that are between 6 in. and 10 in. (these estimated values will vary depending on the piping) upstream or downstream of the steam trap that is being tested. More test points can be taken to establish a baseline, but at least two need to be done for each steam trap location.

Using the high-frequency ultrasound



The ultrasound unit needs to be set at 25 kHz to provide the highest clarity for high-frequency ultrasound generated by steam or condensate passing through an orifice in steam trap.

Pull the trigger to turn on the ultrasound unit. If the instrument is within sensitivity range, the decibel (dB) indicator (A in Figure 2) will blink. The dB reading should be set to 20 dB.

The kHz (frequency) indicator must be steady and not blinking (B in Figure 2). If the kHz is blinking, then it is in the adjustment mode for frequency. Adjust it to the correct frequency level and push in the sensitivity knob to return to the sensitivity adjustment-setting mode.

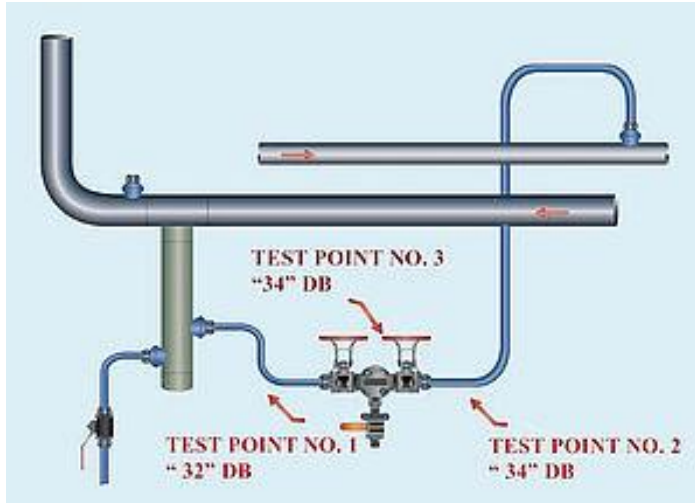
Once in the sensitivity mode, turn the sensitivity control dial clockwise to increase the sensitivity and counterclockwise to decrease the sensitivity.

The sensitivity control dial increases or decreases the sensitivity of the instrument simultaneously with the sound level in the headphones. The instrument needs to be in range for accurate testing.

If the sensitivity is too low, a blinking arrow pointing to the right will appear, and no numeric dB level will be visible in the display panel. If this occurs, increase the sensitivity until the arrow disappears. (In low-level sound environments, the arrow will blink continuously, and it will not be possible to achieve a dB indication until a higher intensity level is sensed.)

If the sensitivity is too high, a blinking arrow pointing to the left will appear, and no numeric dB value will be visible on the display panel. Reduce the sensitivity until the arrow disappears and the numeric dB value is shown.

Comparison testing: Testing methods and results



Proper Operation (PO)

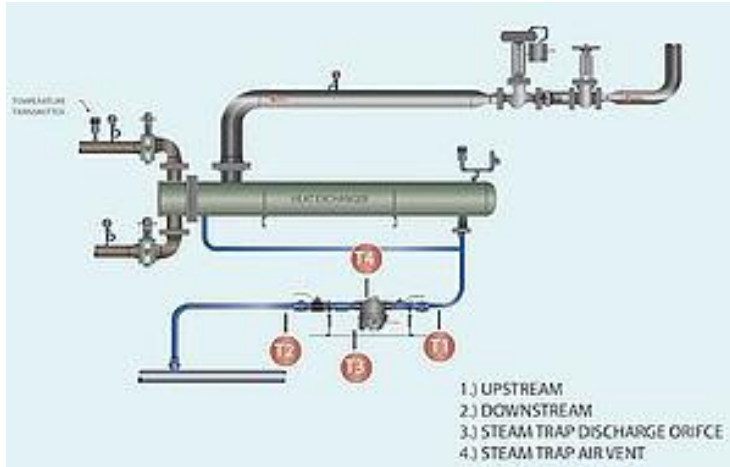
Test Point 1:	32 dB
Test Point 2:	34 dB
Test Point 3:	34 dB

If a steam trap is operating properly, the ultrasound level at Test Point 3 will not be higher than at Test Points 1 or 2.

The reading at Test Point 3 will be equal or less than the readings at Test Points 1 or 2. The high-frequency ultrasound readings, in addition to a temperature measurement that is appropriate for the system pressure, will indicate a properly operating steam trap.

If the ultrasound reading at Test Point 3 is higher than the readings at Test Points 1 or 2, wait for 45 seconds to ensure the steam trap was not in a cycle mode. During the cycle mode, the ultrasound reading at Test Point 3 will be higher, which is the proper operation of a steam trap with on/off discharge cycle.

Steam traps: four test points



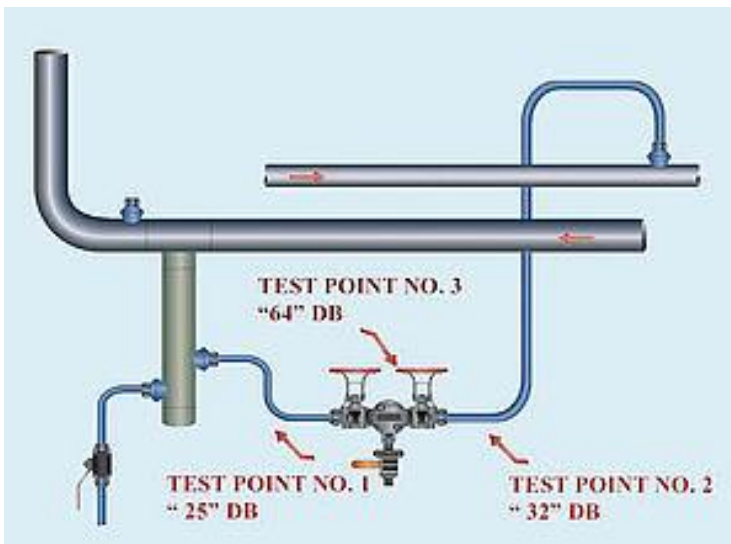
The float and thermostatic steam trap has two orifices: one for discharging the condensate and the other for the air vent mechanism that discharges air and non-condensable gases.

The four test points are as follows:

- Upstream of the steam trap station,
- Downstream of the steam trap station,
- At the discharge side of the steam trap condensate orifice, and
- At the discharge side of the steam trap air vent.

If the air vent is operating properly, the ultrasonic level at Test Point 4 (T4) should be equal to or less than Test Point 3 (T3). If T4 is higher than T3, then the air vent mechanism has failed.

Blowing or Completely Failed Steam Trap (BLW)



Test Point 1: 25 dB

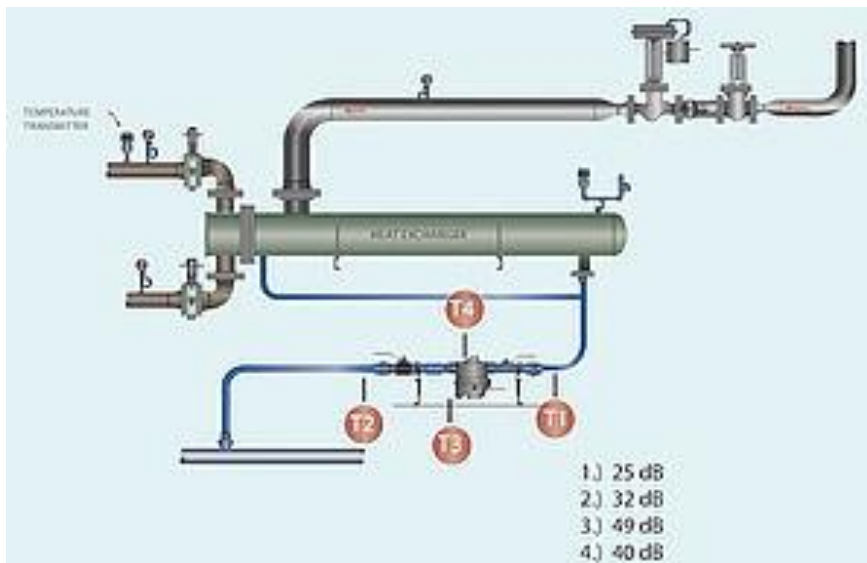
Test Point 2: 32 dB

Test Point 3: 64 dB

A significant increase (greater than two times the base level reading) in the dB level at Test Point 3 indicates that the steam trap is failed open and allowing steam to pass. Continue to monitor the steam trap at Test Point 3 to see whether the steam trap cycles according to its design.

Steam Leakage

Test Point 1:	25 dB
Test Point 2:	32 dB
Test Point 3:	49 dB
Test Point 4:	40 dB



An increase in the dB level at Test Point 3 indicates leaking steam through the steam trap. Again, if this increase is observed, take additional time at Test Point 3 to determine whether the steam trap is in the middle of a discharge cycle. If the dB level at Test Point 3 does not return to the

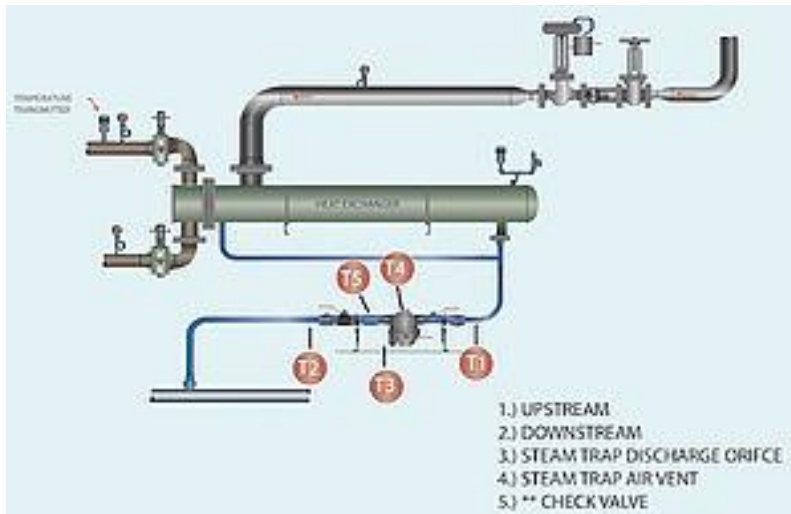
baseline value established at Test Point 1, then the steam trap is leaking steam.

Competing downstream ultrasounds

Test Point 1:	22 dB
Test Point 2:	42 dB
Test Point 3:	28 dB
Test Point 4:	28 dB
Test Point 5:	52 dB

The above readings show that ultrasound is being produced downstream of the steam trap. Check valves can be a source of additional ultrasound in the piping system. Perform further testing at the other components in the steam trap station (Test Point 5) if the assessor determines that the check valve in the system is generating the high ultrasound levels. If the dB value is higher at Test Point 5, then there are competing ultrasounds in the system. If the value is lower at Test Point 5, conduct further examination of the piping and steam trap to determine the source of the higher ultrasound.

Sound characteristics using ultrasound



While using ultrasound listening devices, the tester should be made aware of a few distinct sounds that he or she may hear while testing steam traps:

Crackling: This sound signature is generated by condensate flowing through a steam trap with flash steam occurring after the discharge orifice of the steam trap.

Whistling: A whistling sound is a characteristic of steam passing through a steam trap orifice.

Kelly Paffel is technical manager for Inveno Engineering, LLC.

Links:

AFE Chapter 140: <http://www.afechapter140.org>

AFE Region 8 website: <https://afe8.wordpress.com>

AFE National website: www.afe.org