Use of Combustion Instruments for Diagnosing Service Problems, Setup of Heating Equipment and Preventing Future Service Calls - VTF-1

May 5, 2010 - F.W. Webb - 80 Park Avenue - Williston, VT 8am - 4pm

6 NORA Continuing Education Credits & 6 Vermont Continuing Education Credits

This Vermont Fuel Education Center (VFEC) course features hands-on, live fire equipment. This one day seminar is for heating service technicians, HVAC sales personnel, service managers, DSM personnel, plumbing & heating contractors and others.

Topics:

- ☑ Why combustion analysis instruments are a must with today's heating equipment
- ☑ Know what you are testing for, and how your tests must combine for peak efficiency
- ☑ In depth discussion of draft, smoke, carbon dioxide (CO2), carbon monoxide (CO), stack temperatures and excess combustion air
- ☑ The importance of setting your equipment to manufacturers' specifications and what happens if you don't
- ☑ Locating and diagnosing problems with instruments, instead of trial and error
- ☑ Using combustion instruments on service calls to detect future problems, before they become costly service calls or callbacks
- ☑ How to visually detect a problem and the use of combustion instruments to pinpoint the cause
- ☑ Communicating with customers and the office
- ☑ Your findings and recommendations using your combustion analysis data
- ☑ Care and maintenance of your combustion instruments
- ☑ Knowing when to RED TAG a heating unit

Training Boiler (what it can do, what it can simulate):

- ☑ **Fuel Pumps**: High vacuum, cavitation of pumps, suction leaks, low operating pressure, poor atomization of fuel, effects of cold oil, poor fuel cutoff
- ☑ **Draft**: High draft, low draft, uncontrolled draft, noise & smells from draft problems, importance of draft regulators, high stack temps
- ☑ **Nozzles**: poor atomization, soot, odors, cold oil, suction leaks, sizing
- ☑ **Combustion Zone**: Chambers, chamberless firing, air leaks, low CO-2, vaporization, efficient combustion
- ☑ **Stack Temps**: High stack readings, low stack readings, condensation in fluid gases, effects of condensation
- ☑ **Ignition**: Poor starts, plugged nozzles, smooth starts, pre-ignition, intermittent and interrupted ignition, carbon bridging of electrodes

Instructor –
Steve Goodrich, 30 years of experience:

- ☑ Installation, service and repair of heating equipment
- ☑ Managing of service departments and training of personnel
- ☑ Customer communications, explaining service, updating or replacing heating equipment
- ☑ Founder of Quality Plumbing & Heating and Kelly Fuels, both of Bennington, Vermont
- ☑ Vermont licensed Master Plumber
- ☑ Vermont Licensed Type S Journeyman electrician
- ☑ Vermont licensed oil heat technicians
- ☑ Massachusetts licensed journeyman plumber, oil burner technician
- ☑ PMAA Certified oil heat technician
- ☑ Past president of Vermont PHCC
- ☑ Past Instructor to the Vermont Apprenticeship Program

THE DETAILS:

- Certificates: Are suitable for framing, will be sent to all students completing all requirements of this seminar AFTER the seminar date. VFDA reserves the right to withhold certificates for students who depart prior to the end of the class or arrive late.
- This course qualifies for 6 hours of NORA & 6 Hours of VT oil heat continuing education. VFDA will notify NORA of your successful completion of this seminar and report your credits.
- Directions can be downloaded at www.vfec.org
- Documentation Requirements: there are no documentation requirements for this course.
- Hand-outs: Materials will be provided. It is suggested, but not required, that students with a PMAA Silver or Gold manual bring this to the class for reference.
- Late Arrival/Early Departure: Please be on time for class. Certificate will only be issued to students completing all aspects of the class including a 10 question exam.
- Lunch will be provided courtesy of the Vermont Fuel Education Center.
- No Shows: Firms registering students and failing to attend without notice to VFDA on or before the registration deadline date will be billed for and liable for the full amount of tuition.
- Payment: Checks may be made payable to "VFDA" and must accompany registration form. VFDA also accepts MasterCard and VISA.
- Pencil: All students testing should bring a number 2 pencil to class.
- Pre-Registration Deadlines–Advance registration is required. Registrations must be received by the date(s) noted on the registration form. VFDA does not, in any way, represent that it can accommodate walk-in students. Registrations are processed on a first come, first serve basis. Paid Registrations are given priority over registrations received without payment. Advance registration is required. You must register by the deadlines shown above.
- Schedule: 7:45 a.m. early arrival & coffee/Danish (if available at the facility) //8:00 a.m. training begins // 12:00 p.m. Lunch Break // 3:00 p.m. seminar ends and exam begins (approximate time). Most students should be done by 4:00 p.m.

Questions? - Contact VFDA at 802.223.7750 or email training@vermontfuel.com

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NORA
NATIONAL OILHEAT RESEARCH ALLIANCE

This course is offered at a discounted rate thanks to a NORA Grant!

VFDA
Vermont Fuel Dealers Association

VFEC would like to thank F.W. Webb for donating classroom space.

Use of Combustion Instruments for Diagnosing Service Problems, Setup of Heating and Preventing Future Service Calls **CLASS HELD ON MAY 5, 2010** *Please register by May 1, 2010* ***Student Name***	COST: $130 - VFDA Member $200 - Non VFDA Member *Limited to 25 Students.*
1	**$** $130 -Members $200 Non-Members
2	**$** $130 -Members $200 Non-Members
3	**$** $130 -Members $200 Non-Members
4	**$** $130 -Members $200 Non-Members
Not a VFDA member? Call 802.223.7750 or go to www.vermontfuel.com	**$_____TOTAL**

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We have read, understand and agree to the policies and details as outlined in this notice. We will ensure that students arrive at class with the necessary materials.

Company_____**Contact**_____

Address_____**City**_____**State**_____**Zip** _____

Phone_____**Fax**_____**Email**_____

☐ Check Enclosed
☐ Payment to Follow
☐ Bill Us *(members only)*
☐ Credit Card

Payment by Credit Card:

Name_____

Card # _____ Exp. Date_____

VFDA accepts Visa & Mastercard (No Amex)

FAX TO VFDA: 802-223-7751

or mail to VFDA, 250 Main Street, Suite 301, Montpelier, VT 05602