



OMEGA Productive Services, Inc.

2925 Waterview Drive
Rochester Hills, MI 48309
Tel: (248) 299-8950 Fax: (248) 299-5742

AUGUST/SEPTEMBER 2003

Editor: Max Carthew

Associate Editor: Julie Wallis

Quote of the Month:

“The only way of discovering the limits of the possible is to venture a little way past them into the impossible.”

- Arthur C. Clarke



<http://www.capetownskies.com/rainbows.htm>

? Ask Dr. Brush



Contributed by:
Max Carthew
C.E.O.

As many of you will be preparing for the winter heating season, here are some pointers for maintenance people to help troubleshoot field devices for your gas burners.

Safe Test Methods for Spraybooth and Oven Gas Heater Controls

Safety Differential Pressure Switches – With the control cycle complete through “purge,” you should have a “PURGE COMPLETE” light. Go to each fan pressure switch and disconnect the air line(s). This should cause the purge light to go out immediately. If it does not, then disconnect the common side of the electrical connection to the switch. If this works, the wiring is fine, but the switch is bad and should be replaced after adjustment has been checked. If “PURGE COMPLETE” is still not interrupted, the wiring is defective or a jumper has been added. Check out the circuit. A good replacement switch is the Dwyer Model 1620. (The Old Faithful)

Purge Timers – When all fans are running, and fan pressure switches are made, the purge timer is energized and must run for the preset PURGE TIME. This is generally 10-20 minutes, sufficient to change the zone volume with fresh air, four times. Check that timers are set at the correct value for safe operation.

Freeze Stats – Freeze stats are generally located to sense when the air entering the humidifier section of an air house falls below 40° F. Generally when they reach 40° F, they energize a timer which shuts down the supply fan after 30 seconds to prevent freeze-up. To check these, simply turn off the humidifier water pump and allow media to dry. Then with outside conditions below 40° F and the burner gas isolated, try starting the supply fan. Shortly after the fan has reached full speed, the burner will try to light but will be unable to do so. After a short delay, the fan should shut down by the freeze protection circuit. If it does not, first check that the “STAT” does open up at the set temperature, then check the wiring.

Gas Safety Vent Valves – The vent valve on a gas train is a “normally open” valve which should seal tight during normal burner operation. If it does not, you could be wasting precious fuel. To test for correct operation, install a pressure gauge manometer to a connection between the two motorized shut off valves where the vent valve tees in. 0-30 inches of water is the normal range. Check the burner wiring diagram to find the power lead to the vent valve. Temporarily disconnect this wire and connect to a powered terminal to hold the valve closed. Then start the burner in the normal way and shut down by closing the local gas isolating valves. The shut-off valves will close, trapping gas beneath the vent valve. Mark the gauge at the starting pressure and verify that it does not change for at least five minutes. A leaking vent valve will generally show a fall in pressure almost immediately.

Burner Low Fire Setting (Line Burners) – It is good practice, at least every three months to start your burners on low fire by holding the control output to zero in manual control. Observe that when the pilot ignites the main flame, the low fire gas rate is sufficient to cross ignite the whole burner section immediately. There should be no hesitation, or unburned gas will pass downstream, causing odors and potentially dangerous conditions. This same test should be done for two stage burners as the #2 stage is ignited. A simple adjustment to the butterfly valve, or the cam screws on a ported valve, will correct the situation.

INSIDE THIS ISSUE:

| | |
|-------------------------|---|
| Dr. Brush | 1 |
| SENIOR THESIS | 2 |
| CURRENT PROJECTS | 2 |
| BRAGGING CORNER | 3 |
| Mich-Again | 3 |

SENIOR THESIS

In an earlier article, I had talked about my Senior Thesis project and its topic. My Senior Thesis is going to cover the engineering study for the construction changes on the Prime Spraybooth, per our Energy Saving Optimization Project at the GM Doraville Plant. The Prime Spraybooth was picked for my Thesis topic due to the fact there are many necessary changes and interesting engineering solutions, to achieve the desired results of the energy savings. At the time of the last article, I was developing the Plan of Attack, under Phase 1 of the Thesis development. In this phase, a schedule is made to outline the steps needed to finish the project. Currently, I'm in the last steps of the Thesis project under Phase 4, which includes the actual write up of the Thesis. The Thesis Project consists of four phases:

Phase 1 – Concept and Development

- Develop plan of attack and schedule.
- Begin concept phase.
- Define energy savings opportunity.
- Calculate potential energy savings opportunities. (Long Hand Method)
- Develop Scope of Work.
- Develop Budget pricing.

Phase 2 – Customer Approval

- Create business case summary.
- Participate in presentation to customer.

Phase 3 – Construction and Start-Up

- Provide on-site construction supervision.
- Provide on-site start-up of energy systems.
- Assist in on-site systems prove-out.

Phase 4 – Field Analysis and Thesis Write-up

- Documentation of test results.
- Field Start-up report.
- Draft Thesis report.
- Review of draft.
- Final Thesis report.

The Senior Thesis Project is a very long and drawn-out engineering process. This project has taken roughly nine months to develop and is very close to completion. Many of the steps I took in the Senior Thesis Project are the typical steps OMEGA engineers would take on any Energy Savings Optimization Project.

It was a very rewarding experience to be on-site at the GM Doraville Assembly Plant and see the designs and solutions developed on paper come to life. Being a large project and seeing everything come together on-time for the start of production was truly a gratifying experience as a young engineer. There were a few flaws during the start-up of the system but those were assessed properly and now the system runs very efficiently. Working hands on with the equipment in the field provided me with useful lessons for future projects of similar nature.

*Contributed by: Kevin Dunbar
Kettering Co-op Student*

CURRENT PROJECTS

- ❖ OMEGA has been awarded contracts by HM White for spray booth services, Honda Canada for feasibility studies. As well as other contracts for balancing services.
- ❖ A second phase of the GM energy initiative has been awarded to their Tier 1 supplier – ROI Energy/Atkins Benham. OMEGA and Duckworth have been awarded engineering projects for this second phase at Doraville, Bowling Green, and Fort Wayne plants.
- ❖ Currently, as the only authorized supplier in the United States, OMEGA continues to provide sales and repairs to Gill Instruments. Please contact Bill Ringrose for any questions regarding Gill products.

BRAGGING CORNER



New Babies



Congratulations to Paul and Susan Carthew on the birth of John Curt Carthew. John was born on May 14th. He weighed 8 lbs 7ozs and 21" long. Grandparents, Max and Annick, are very excited to have this special addition to their family, as is sister – Mary Margaret.



Bill Ringrose, now also known as Grandpa, has something new to brag about! Heather gave birth to Nathaniel William Douglas on April 5th. He weighed 6 lbs. 8 oz. and was 19.5" long. We all know how spoiled he will be!

Graduation



Jeff and Julie Wallis' daughter Rebekah has graduated from Waterford Kettering High School with honors as a Valedictorian. She intends on attending college and pursuing a degree in Zoology. Congratulations Beka!

Mich - Again



<http://www.cedarsaunas.com/saunpic.htm>

THE SAUNA, A FINNISH-AMERICAN CUSTOM

What we refer to as a "steam bath" in colloquial English is actually the Finnish art of "going to the sauna" and "taking a sauna."

The sauna is probably the best known of Finnish-American customs. Many Finnish-Americans have settled in the Lake Superior regions of Michigan. 80% of these families have saunas. Family saunas are opened to "have-nots." To keep a sauna to oneself is un-Finnish.

When the Finns first came to Michigan, they built a detached one-room *savu*-sauna (smoke sauna), undressed in their homes and, Finnish style, walked to their sauna in the nude, causing their puritan neighbors some anguish. Soon they were forced to attach a dressing room to their sauna and get undressed THERE.

For Finnish-Americans, sauna is the only proper way to really clean your body; heating it up, sweating profusely and dashing outside to cool off. The bather enters again, throws water on hot rocks to increase steam and heat, and begin whipping every inch of his/her body with a shoot from a living tree to "kill the germs." After one more trip outside to cool down comes the scrubbing followed by the grand finale of jumping into an icy cold lake. Only then does a Finn feel clean. At one point saunas were considered as sacred as churches. To this day Finns observe proper rites: tough ones at the top where the heat is most intense, toddlers on the floor, and no talking, no playing.

The sauna cures everything, from colds to depression to many other physical and mental ills. A Finnish proverb states that, "if a drink of liquor and sauna won't cure an ailment, it is a fatal one." Maybe we should all have a sauna, but make sure its dressing room is attached. Remember your neighbors!

Contributed By: Annick Hivert-Carthew
Based on "The Sauna: An Expression of Finnish-American Identity"
by Yvonne R. Lockwood



OMEGA Productive Services, Inc.
MISSION STATEMENT

TO PROVIDE PAINT SYSTEM – PROCESS IMPROVEMENT SERVICES THROUGH CONTINUAL IMPROVEMENTS OF OUR QUALITY MANAGEMENT SYSTEM, TO ENHANCE OUR CUSTOMERS' SATISFACTION OF SERVICES PROVIDED; ON TIME, ON BUDGET, EVERY TIME.

OMEGA Productive Services, Inc.

2925 Waterview Drive
Rochester Hills, Michigan 48309

You may choose to be placed on our email list to receive our newsletter in PDF format, or wish to have your address updated or removed from this mailing list. If you have any changes, please notify us by e-mail to: jwallis@omegapro.com



Something Told the Wild Geese

Something told the wild geese
It was time to go.
Though the fields lay golden
Something whispered, - "Snow."
Leaves were green and stirring,
Berries, luster-glossed,
But beneath warm feathers
Something cautioned, - "Frost."
All the sagging orchards
Steamed with amber spice,
But each wild beast stiffened
At remembered ice.
Something told the wild geese
It was time to fly, -
Summer sun was on their wings,
Winter in their cry.

- Rachel Field