



# aef/fyi



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THE OFFICIAL NEWSLETTER OF A.E.F. SALES ENGINEERING COMPANY

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"America's  
Favorite Newsletter"

DECEMBER 2009

TEAM AEF



Our 45th Year

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### SECRETS EXPOSED!

Legendary Service: How AEF does the whole AEF Thing.

### KNOWING, THINKING

Two things that are no longer in style are still 'in' at AEF Sales. Can that help you?

### GROUND BREAKING

Another reason to hate expensive GFI breakers, along with the way out.

### JUDGE ROY BEAN

The self-proclaimed 'Law West of the Pecos' was quite an original character.

### ASK BERNADETTE

The World's Only Answer Cow dispenses technical expertise and common sense.

## Secrets of Legendary Service

Inspired by that TV show where a magician shows how tricks work, we expose the magic behind TEAM AEF's Legendary Jump-Through-Flaming-Hoop Service.

It starts with serious training, making sure all AEFers are ready, willing, and able to do whatever it takes to take care of our customers, no matter what. (See photo right.) It's not fancy; in fact it's pretty old-fashioned, but it's the right way to do things---the way we've been doing it for forty-five years, and the way we'll keep doing it.

Then there's the technical training: staying ahead of the curve isn't easy. When we're not bringing in experts from the factory to us, AEFers are going to them. It takes time, money, and effort, but we can't do what's best for our customers if we don't know what the best is.

The next step is to make sure we've got what our customers need, in stock, ready to go, as soon as they need it. And since we have no way of knowing what you'll need, we just put a whole bunch of EVERYTHING in stock. Then we put in a little extra (a lot extra actually), just in case. This time of year you need heater cable, not excuses, and we're loaded for bear.

When you look at it, we really don't do anything fancy: we work hard, treat people right, and put our money where our mouth is when it comes to training and inventory.

Now that we've given away our secrets, are we worried? Not really. We don't think anybody else will go to the lengths that we do to serve our customers.

So if you want Legendary Service, you want TEAM AEF.



You have to be willing to bend over backwards to help your customers out. Here Cirque du Soleil's Fifi Schwartz shows AEFer's how it's done. Fifi is next to the actual training hoop used by TEAM AEF.



In a world where no one seems to know what they're doing anymore, we do.

## Know Thy Stuff

Knowing your stuff, and actually THINKING, seem to be something of a lost art these days, but at AEF we think it's still the way to go. Here's a frinstance.

Recently we were working on a decent sized heat trace system, about 3,000 feet of pipe from 2" OD up to 12". The spec called for 4" of fiberglass insulation on the 12" pipe, and 3" on everything else. That's what the spec spec said, and that's what we did. But we didn't stop there. We wondered what would happen if we re-did the design, with 1" less insulation? Turns out that a couple of the lines required higher watt densities, which bumped up the cost of the heater cable by \$170, and we figured the owner would spend an extra \$500 on electricity, but the cost of insulation would be **cut by \$40,000!** How'd you like to walk in and tell the boss you just saved \$40,000?

Remember, on a typical heat tracing job, the heater cable and controls (the stuff you should be buying from AEF!) averages only about 40% of the electrical side of things, with another 40% for labor, and 20% for conduit, breakers, and that sort of thing. Insulating the pipes will run about *double* the electrical dollars. A smart design saves money in each and every one of these areas. And you know who to call for a smart design, right?



One does not discover new lands without consenting to lose sight of the shore.

Andre Gide

The habit of being happy enables one to be freed, or largely freed, from the domination of outward conditions.

Robert Louis Stevenson

Cease becoming unreasonable.

Ephesians 5:17

You may not realize it when it happens, but a kick in the teeth may be the best thing in the world for you.

Walt Disney

We are all of us in the gutter, but some of us are looking at the stars.

Oscar Wilde

The only difference between death and taxes is that death doesn't get worse every time Congress meets.

Will Rogers

No man is useless who has a friend, and if we are loved we are indispensable.

Robert Louis Stevenson

There is no safety in numbers.

Or anything else.

James Thurber



## We Interrupt Our Regular 'Memo From' With This Important Alert!

The slowdown in the economy is also slowing the pace of many construction projects, which could mean **unanticipated problems** on jobsites for sprinkler lines and temporary water lines.

The slower pace of construction means that many of these lines that were to have been enclosed and heated before winter will now be **EXPOSED** to freezing temperatures, and the damage it can cause. **These lines need to be heat traced.**

There are major potential **problems even on heat traced lines.** In the real rough and tumble world of construction sites, heat trace is likely to be fed from whatever breakers are handy, ground fault or not. This can lead to failures --- **frozen pipes, wet insulation that has to be replaced, wet wire fires --- leading to extra costs as well as serious SAFETY ISSUES.**

The solution is to use electronic controllers on these heat trace circuits that provide the ground fault protection required by the NEC no matter what kind of breaker is used.

TEAM AEF has the cable and controllers (and the expertise) you need. Call today; we'll have your material on site tomorrow.

## Another Good Reason to Hate GFI Breakers

*EDITOR'S NOTE: In the interest of full disclosure, the publisher/owner of this newsletter, AEF Sales, sells the stuff mentioned in the following article.*

For many years AEF has been at the forefront in the battle against GFI breakers, for two BIG reasons.

1. **They Are Too Darn Expensive!** There's no good reason in the world that a GFI breaker should cost three times what a regular breaker costs. Nobody can afford to waste money these days.

2. **There Are Much Better Ways to Provide GF Protection on Heat Trace Circuits!** Whether you're looking at a single circuit or a whole system, whether it's self-regulating cable or M.I., AEF has what you need. Today's electronic controls provide the GF protection required by NEC 427-22 while also providing alarms (loss of voltage, high temp, low temp, whatever you require), AND automatic testing and remote alarms. **Nobody has a wider selection of electronic thermostats and control panels. Nobody.**

**Startling New Evidence!** An exhaustive undercover investigation by aef/fyi revealed the shocking evidence shown in People's Exhibit A at right. (Actually we just opened up the box a 30mA GFEPD breaker came in.) This is a sticker thoughtfully provided by the breaker manufacturer, with instructions to the installer to post it prominently so that the building owner will remember to test the breaker "at least once a month" and record the result on the handy-dandy little chart. (The chart provided space to record the first 144 test results; after that you're apparently on your own.) Anybody that thinks the monthly testing will actually take place, please raise your hand. We thought so.

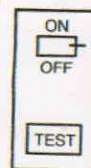
(This might be a good place to mention that the electronic controls TEST THEMSELVES --- a much better approach, yes?)

### TEST REMINDER FOR CIRCUIT BREAKER WITH GF EQUIPMENT PROTECTION

INSTALLER: Place this test reminder card in a conspicuous location to remind the building occupants to test ground fault circuit breaker monthly.

OWNER: For maximum protection against electrical shock hazard, operate test circuit on the unit at least once a month. Keep these testing instructions in a conspicuous place and record test data each month.

Testing Instructions



NOTICE: This panel is equipped with one or more ground fault circuit protectors. When properly installed in accordance with installation instructions each unit provides overload and short circuit protection for the circuit controlled and in addition provides optimum protection for equipment from line to ground fault hazards. This device does not provide protection against the shock hazard of user contact with two or more circuit conductors.

OWNER INSTRUCTIONS: To verify operation-test the device monthly by:

1. Insuring that panel is energized.
2. Insuring Protector is in "ON" position.
3. Pressing "TEST" button; handle must trip to center position. If not, call electrician for correction.
4. Resetting Protector by moving handle to "OFF" then "ON".
5. Recording test data below.

|  | YR | MO | JAN | FEB | MAR | APR | MAY | JUNE | JULY | AUG | SEPT | OCT | NOV | DEC |
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PEOPLE'S EXHIBIT A





**Bernadette**  
The AEF Sales Answer Cow

DEAR BERNADETTE:

We installed a submersible transformer 15 years ago. Now we need to replace it with an identical unit, same dimensions, same impedance, same everything. Problem is the manufacturer won't build it for us; their closest available standard unit won't fit in the existing vault. This is going to cost us a fortune. Help! J.B.

DEAR J.B.:

Between corporate takeovers and diversification many manufacturers of electrical equipment have actually forgotten how to manufacture electrical equipment. Many of these companies have replaced engineers with Marketing Specialists and Public Relations Persons. What you need is a company that still designs and builds transformers. R.E. Uptegraff has been doing just that for over 80 years, so you can go to people who understand what you need, and build it for you.

(EDITOR'S NOTE: The Uptegraff rep in your area is A.E.F. Sales.)

Need help? E-mail [bernadette@aeftsales.com](mailto:bernadette@aeftsales.com)

DEAR BERNADETTE:

I've got a mystery on my hands and you're my last chance. My plant has a water line, normal operating temp is 140 degrees F. It needed freeze protection, so we went ahead and steam-traced it, and it worked fine. But the pumps for that line aren't pumping like they're supposed to. Discharge pressure on the pumps is fine, but the capacity keeps dropping. What's wrong with them? C.B.

DEAR C.B.:

I just came across an article about a problem just about identical to yours, and your problem isn't with the pumps. After a lot of head-scratching, they finally figured that the water line was fouled, even though it was regularly acid cleaned. They cut the pipe, and found so much build-up that the 4 inch pipe had only a 1 inch effective diameter.

Many water systems contain carbonates, bicarbonates, and sulfates. Calcium carbonates are especially common, and its solubility drops with rising temperature. At 140 degrees, the occasional acid treatment should have kept everything running smoothly, but the 400 degree steam caused the build-up, and the headaches. You'll save on maintenance costs, and agita, by using self-regulating cable that will maintain your 140 degrees without the excessive heat that's causing your problem.

DEAR BERNADETTE:

Why are manhole covers round? R.T.

DEAR R.T.:

Because the manholes are round.

*Idealism increases in direct proportion to one's distance from the problem.*  
John Galsworthy

*Even when all the experts agree, they may well be mistaken.*  
Bertrand Russell

*Since we reap what we sow, you'd think we'd pay more attention to what we sow.*  
Dooms Madigan

*Never order Chinese food from a place called Ralph's Pagoda.*  
Lois Lane

*Constantly choosing the lesser of two evils is still choosing evil.*  
Jerry Garcia

*Quiet minds cannot be perplexed or frightened but go on in fortune or misfortune at their own private pace, like a clock during a thunderstorm.*  
Robert Louis Stevenson

*Rabbit's clever. And he has Brain. I suppose that's why he never understands anything.*  
Winnie-the-Pooh

*I have enough money to last me the rest of my life, unless I buy something.*  
Jackie Mason

## Outside, Inside

When you've got a lot of stuff coming into stock, there's a lot of work to do, unloading trucks and putting everything in its place.

Brandon gets to do the fun part, using his newest toy to take pallets off of



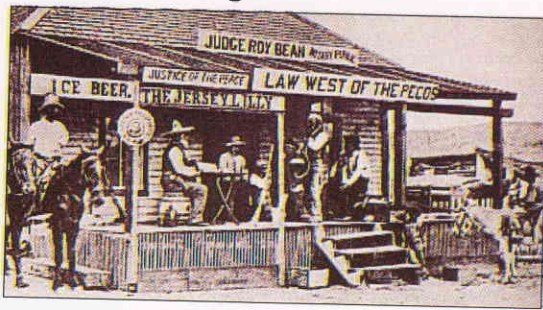
the truck and bringing them inside the warehouse. Then his son Malachi takes over, doing the grunt work.

Malachi started big-boy school in September, and working in the warehouse is his first after-school job. While on the job Malachi gets regular breaks, and snacks. It will probably be another few years before he gets to operate any machinery.



## Judge Roy Bean

No doubt about it, Roy Bean was one of the great American characters. Born in Kentucky around 1825, Roy headed to New Orleans at the age of sixteen, and then West, to Mexico, and then California. (Most of the moves seemed to have been precipitated by misunderstandings with various government authorities.)



By 1849 Roy had landed in San Diego, where he was considered quite the ladie's man. This rep led to a duel, which led to jail on attempted murder charges, which led to an escape, which led to another re-location, this time to Texas. For the next thirty years Roy pursued various shady enterprises, finally setting up a saloon near the Pecos River in 1882.

This was a great location, smack in the middle of 8,000 thirsty men who were building the Southern Pacific Railroad. In that tough neighborhood, Roy was the closest thing to a solid citizen, and since the nearest actual court was 200 miles away, Texas Rangers started bringing their prisoners to him for judgement.

Roy was ready and willing, if not actually able. Trials were punctuated by recesses, during which Roy sold liquor to the lawyers, the defendant, and the jury. There was no local jail, so most cases were settled by fines; in many cases the fine just happened to be exactly equal to the amount of money the accused had on him. (Roy also charged \$5 for weddings and \$10 for divorces. He had no legal authority to grant divorces, but that didn't stop him.) All fines and fees were supposed to be sent to the state of Texas, but the state never saw a dime.

By the early 1900's the times were changing, and Roy's style didn't really lend itself to a more 'civilized' setting. Roy pondered his future, and he didn't seem to have one. After a bout of heavy drinking about it, Roy died in his bed in 1903.

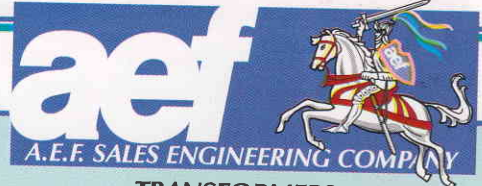
## Backwords

### Just Plain Nutty

The gray-white songbird known as Clark's Nutcracker calls the forests of the West home. Every year it collects 33,000 seeds, and stores them in 2,500 different locations in order to be prepared for the frigid winters. Not to be outdone in nuttiness, TEAM AEF has collected 400,000 feet of primo heater cable, including over 160 MI cables. (And you thought nobody was nutty enough to stock MI cables.) We have all that stored in just one location. We may be nutty, but we're not crazy.

### Tastes Like Chicken?

Finally, a transformer that's good enough to eat. In response to a transformer required by a utility here in AEF Land (we can say no more) for installation in an extremely environmentally sensitive area, R.E. Uptegraff built a transformer so green that the insulating oil is edible. (We here at aef/fyi do NOT recommend ingesting any part of this or any other transformer, and assume no responsibility attached thereto.) Nice to know there's a company that can handle your ~~oddball~~ special transformer requirement, yes?



### TRANSFORMERS Central Moloney

[www.centralmoloneyinc.com](http://www.centralmoloneyinc.com)  
Single Phase Transformers: Pole Type, Padmounted, Vault, and Stepdown  
Three Phase Padmounted Transformers  
Components: Bushings-Switches-Accessories  
JSRP Job Site Ready Padmounts

### R.E. Uptegraff Manufacturing [www.uptegraff.com](http://www.uptegraff.com)

Liquid Filled Transformers to 20mva  
Subsurface, Load Center, Station Type  
Rectifier Applications, Zig Zag Grounding  
Phase Changing and Phase Shifting  
Traction Power, Current Limiting Rectifiers  
Rebuilding and Rewinding Services

### HEATER CABLE & CONTROLS

MI Cable for Pipe Tracing & Snowmelting  
Self-Regulating Cable for Pipe Tracing  
Hot Water Maintenance Cable  
Self-Regulating Cable for Roof & Gutter De-Icing  
Electronic & Mechanical Thermostats & Controls  
Heat Trace Monitoring Systems  
Microprocessor Based Heat Trace Control

Heat Tracing Since 1964

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**ELECTRONIC EDITION COMING MARCH!**  
Readers who have requested the 'e'-dition of aef/fyi, will begin receiving it with our March Issue.

**WE HAVE ENOUGH HEATER CABLE  
IN OUR WAREHOUSE TO REACH  
FROM HERE TO THE MOON.\***



\*Advertising claim based on our calculation that the Moon is approximately 76 miles from the earth. Other estimates of the distance from earth to the Moon are significantly higher.

### OUR CALENDAR GIRL

This year's calendar girl is Molly Fasolino, the Official aef/fyi Staff Puppy. Molly was about six months old when the photo was taken. She is theoretically half Beagle, half Boston Terrier, but we think there might be some sort of Spaniel in there too. She is as sweet as she looks.