Fire Alarm Troubleshooting

Finding out why that Yellow LED is on!
What does AFAA-NE do?

- **Education**
  - We supply the tools our members require to perform within the guidelines of our code driven business

- **Influence Code and Standards**
  - Members sit on various boards and governing bodies that help influence and create codes and standards

- **Provide a Communication Network**
  - www.afaa-ne.org, FaceBook and Dinner Meetings

- **Promote Public Safety**
  - Raise awareness for Life Safety in the communities we serve
What we will cover

1. Laws of Troubleshooting
2. How do circuits work (NACs, IDCs & SLCs)
3. Understanding the machine
4. Follow the lead of the Fire Alarm
5. Programming
Laws of Troubleshooting

- Troubleshooting is easy if you know the rules:
  - Gather information
  - Was it raining
  - Has anyone been working anywhere in the building
  - Were any new systems activated or old ones shut down
  - Ask the owners if they or anyone else has touched the Fire Alarm.
- Know how the system is supposed to work
  - “I was in the elevator, there was a false alarm and I ended up on the first floor, what gives?”
- Look for the source of the problem
- Fix it, then test it… If the problem was miss-use or environmental then enlighten the building staff...
How do Circuits work?

- Notification Appliance Circuits (NAC)
  - Is the panel using Regulated or Non-Regulated 24VDC
  - Polarity reversal
  - 24 VDC supervision voltage drop thru EOL = Normal Circuit
  - No voltage return to panel = Open
  - 24VDC return to panel = Short
  - All NAC Appliances must be either Diode or Capacitor blocked for proper supervision
How do Circuits work?

- Initiating Device Circuits (IDC)
  - Non-polarity reversal
  - 24 VDC supervision voltage drop thru EOL = Normal Circuit
  - No voltage return to panel = Open
  - 24VDC return to panel = Alarm
How do Circuits work?

- Signaling Line Circuits (SLC)
Understanding the machine

- Learn to trust what the panel tells you until you PROVE it wrong.
  - Including the programming
- Know the system
  - 24VDC, what it is with and without load? (Regulated or Un-Regulated)
  - What is the Ground Fault Reference Voltage
  - Is the Addressable Protocol Digital or Analog
  - Max Battery charging capability
Let’s talk

Questions?
Field issues?
What’s next in this series of Fire Alarm Tech Presentations