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Reflection Paper 3

04/04/2026

ODU Spring 2026

Stafford County Fire and Rescue

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Internship Reflection Paper

Third 50 Hours

Working in Information Technology in a Fire and Rescue department can be like nearly every other IT helpdesk job in the world. The fundamentals of a career in this environment revolve around being willing to go the extra mile to help someone. This effort helps to make the entire department run a bit smoother.

I spend a significant amount of time doing what may be considered normal helpdesk tasks. Resetting passwords, helping people into accounts they are locked out of, and even the occasional hardware fix or replace. These tasks, while sometimes repetitive, are needed to keep people working on the tasks we need done daily.

One of my favorite hardware repairs so far has been a broken laptop screen. One of our employees had a screen break while carrying it in their bag. This was of course accidental, and I got to work right away figuring out the repair process. The first broken screen I encountered was sent back to the manufacturer. This process went well but required sending the device and being without the resource for about 2 weeks. In some

instances, this is adequate for turnaround. But some positions require a smaller window. When the second screen broke, I investigated some other options.

The manufacturer offers several options in the repair process. The device can be sent back to them through mail, the manufacturer can send a technician to the office, or the manufacturer will send the parts directly to the office. I had attempted to use the mail and technician options before with some problems and headaches. Sending the device through the mail led to long return times and unexpected labor costs. Using the technician led to scheduling issues between my busy schedule and his equally busy schedule. This time I opted to have the parts sent to me.

The parts were sent the next day. I had previously taken a screen apart on a decommissioned laptop out of curiosity, so I had some idea of how the process worked. Using this and some YouTube videos, I was able to complete the repair in less than an hour. With some clever scheduling, this led to nearly zero downtime for the user.

While these tasks are what I would consider normal for any IT Helpdesk, there are several things relevant specifically to the Fire and Rescue Department. One example is our radio system and relevant hardware.

The Fire and Rescue Department relies heavily on the use of portable and mobile radios for the effective accomplishment of their jobs. Firefighters need excellent communication on scenes where face to face communication is impossible. Paramedics rely on communications with the hospital to communicate needs as they approach.

Dispatch needs to be able to share information with the field units and bridge communication between law enforcement and the fire rescue personnel.

My job requires me to continue learning about this system I knew little about when I started. My experience with radios was rudimentary at best. Walkie Talkies need to be on the same channel to communicate. Press the button to talk. If you get too far away, you may lose the connection. This was the extent of my knowledge walking into this position. Thankfully we have a volunteer who knows far more than me to bridge the gap, but I have been learning as I can.

The first thing I learned was updating radios. Currently this process involves plugging my laptop into a radio through the microphone port, opening a connection to the radio, and uploading the program. Each radio receives the same program, but it is vital to ensure every radio receives a unique identifier. This identifier is sent to the radio system during communication to prove the radio is allowed to transmit on that system. These radio IDs are programmed into the system by our Radio Administration, and it is vital we use the ones provided.

In addition to the IDs being unique for our radio system, these IDs are also unique compared to the counties surrounding us. This makes sure that if our units go into a surrounding county to help with an emergency call, the other units do not have the same ID as our unit. This process requires detailed notes and attention to small details. Missing even one number in this ID can prevent the radio from communicating on the radio system.

After learning this process, I have started learning more about the radio system as a whole and even started some small programming projects on a device that can listen to the system. This device is called a pager, and it can be used to listen to calls and to page specific individuals for specific calls. While we are not set up for the latter, being able to listen to the system means the device needs to be set up to listen to the system.

Walkie Talkies are a good basis of how any radio works. There is a frequency that the channel receives on and either the same or slightly different frequency is used for transmission. To program my pager, I needed some pertinent information. Primarily the frequency with which we as a county operate our radio channels, the system ID number, and the channel information. Some of this information is easy to import as some of the information is available for me to export from other programs. Other information requires me to fill it out myself. After a few hours of experimenting, I was able to create a channel that could scan through the transmissions on our system.

Getting this successful channel to work inspired me to find other things I could do on the radio. I created custom audio files for channel names. Now when I change the channel, it tells me the area or other custom message I curated for it. Using text to speech software on the web, I was able to make these as custom as possible. I was even able to pull specific sounds from audio files to use in place. While some of these names and sounds are just for fun and would never be deployed in actual use cases, this fun as made the process more approachable. I have since finished the original channel by uploading some of our radio IDs to the pager so I can see who is talking at any given time on the

Stafford radio system. This is the first step into what I hope is a growing and wonderful new learning experience.