A2: User Research

Kay Waller, October 8 2018
Team UX & Rescue

Project Description

We are team UX & Rescue, and our User Group is fire and rescue personnel. This includes both the firefighters responding to calls, and the administrative professionals working on fire codes and safety. We have yet to narrow down a specific user group, but expect it will be more focused on firefighters and less on the administration side. We expect to find our user group in fire stations across Seattle, where they are expected to be on call for whole days. Their context is them living, eating, and socializing at the station, them rushing to a scene, and them doing paperwork that wraps up an incident.

Interview Note

I conducted this interview on October 6, 2018 at a fire station in Seattle. I was seated around the table with four firefighters and Perry Burke. The firefighters referred to each other during the interview, so to protect their identity I have replaced their names with made up ones. Towards the end of the interview, they refer to multiple forms, show us a tablet, and show us badges. Those supplemental materials have been provided as pictures.

Interview

Kay: What is your official job title here? Do you guys have different ones, or...?

Group: Yeah, I mean we're all firefighters, and Wallace is our acting officer. So he's the commander in chief.

Kay: And what motivated you guys to become firefighters? What led you down this path at all?

Group: So everyone's firefighters EMT and Smith's the driver, so there's apparatus drivers. Someone's gotta drive us around! Someone's gotta lead us (different person). Sorry, what was the question again?

Kay: So what motivated you to become a firefighter?

Group: Um, lots of things. I wanted to be a firefighter since I was a kid, so it developed into wanting to serve and help. Growing up I was involved in scouting and whatnot, and learned to love to serve people.

Kay: Anyone got any different reasons?

Group: Not really different. Everyone's kinda the same and want to give back to the communities. Some people have memories as a kid where they interact with the fire department come to their house or a car accident, so there's stories like that. The other side is people who were in the military, so they want to stay service-oriented. Paramilitary. For me, it was kinda like that where originally I wanted to be a elementary and special ed teacher. I was a semester away and then changed my major. So for me, I wanted a career which had a lot of variety in my day, every day is completely different, which is why it's kinda intriguing. Everyday is different and we don't know what we're gonna be doing, and uh, some stations are busier than others. You go to car accidents, you go to help someone get up off the ground, you go to a fire, you go to a fire alarm that's false, I mean whatever, it's just a variety. So it's kinda exciting in that sense.

Kay: So my next question was take me through a typical day, but it sounds like you don't have a typical day! So, I guess my new question is a response like? So you get a call, and what are the steps to a response?

Group: The only thing that's typical about the day is we show up in the morning, start the day at 7:30, 24 hour shifts 7:30-7:30. Relieve the company's that there, we take their gear off and do safety checks, check the equipment, Smith checks the rigs and make sure they have water. The lights. These guys will check all the equipment, like the first-aid equipment because 80% of what we do is medical, so we check the equipment and all our personal gear. Housework, do roll call, talk about the day, maybe have breakfast together. During roll call we'll talk about the day, what kinds of business, maybe do some drills. Then after that, we plan it, but we're still in service and don't have any options so it's like you have to be flexible. Some people don't like that they can't control their day, every aspect of it, but if you can't do that it's definitely not the career for you. Because you'll get a call from the Chief at like 8:55 right when you're about to walk out the door saying "hey I need you to go to this training, I need you to go the station", or whatever it is, but there's some type of training everyday, some type of drilling training, some type of inspections where you look at buildings or hydrants. That training could be with us and what we do for the day, or there's department training. If you ever work with this guy (points to another person), he has a whole book of stuff for you to do with him. So sometimes that kinda ruins everything. Breakfast, lunch, and dinner are definitely in there, so that's kinda part of the bonding of this career. We call it clutching, where we pool money together and eat dinner together. So here we take turns cooking, some stations there's one cook, this is a single house so it's just one engine and 4 of us, she went to 17 and that's a double house, they got a medic, and so there's 11 people there, at a minimum, but sometimes they have students. That night they had two guests and more in auction so they had like 17 people there.

Kay: So it's just the four of you?

Group: Yes, and this is an older station. I don't know if you went to 38, but that's also just a single house, but it's huge. It's a brand new station, and that's where I'm typically assigned, but I'm here for now. But all the new stations, so all 33 stations either got remodeled or totally rebuilt and the new ones are huge. Like they're still single houses, but they're huge.

Kay: Is it hard to stay up 24 hours?

Group: So, we are officially allowed to go to bed at 10:00. But obviously you could get a call, so we're never not on duty. Like you'll see us in the store or wherever, but we have our radios and pagers so we'll just still have to be able to respond.

Kay: So you don't have to be here, you can go wherever and be on call?

Group: Yup, so we have districts and CAD (computer aided dispatch), and they just take the closest unit. Used to be where you're in this area and you have to go to it no matter what, but now, if you're in this area and the call's at the other end, they may take the next engine or aid car because they're closer. But we can go wherever we want. It's good to be out where the public can see us because most people don't know what we do. They assume, "hey we didn't know you did medical, or you left the station or that you work 24 hour shifts", so uh we give a lot of stickers to kids.

Kay: Yeah, so I was gonna say, what are some common misconceptions about firefighting? Because going into it, we were talking to a guy yesterday about all the low acuity stuff…

Group: So basically when you call 911, you get police dispatch first. And then they'll ask if you want fire, medical, or police. And so if it's fire or medical, they'll transfer you to our dispatchers. So we go on a lot of things the police should go on, which is actually a lot of things, but they don't realize we do medical, they assume we only do fire, they don't realize that we work 24 hours, that we sleep in the station, that we eat in the kitchen. Another misconception is that the city pays for everything, like the food, the TV… So along with clutching, there's house dues, and house dues pay for stuff like the paper, coffee stuff like cream and sugar, or things that we all share together. We have like these lockers labeled A, B, C, D, for all the shifts and then have station locks down there, so that's all the stuff we share. Pay for paper, cable, a recliner, or barbeque, we all pay for that and the city doesn't really pay for that kind of stuff.

Kay: So going back to scheduling a little bit. You said you were on for 24 hours, does that mean you are then off for 24 hours?

Group: We work 24 hours, we're off 48 hours. We work 24 hours, then we're off four days. And you can work overtime between then and do trades with different people or pick up special overtime where we work games, go down there and be there at the games, but our normal schedule is work 24 hours, off 48 hours. Basically 2 out of 8 days. So we work

anywhere from 8 to 11 days in a month. So every 7 weeks we work 1 extra day, it's called a debit day, someone in those 4 days we have off, and that could be at any station.

Kay: So how do you guys feel about that schedule? Because it's interesting schedule compared to 9 to 5, 5 days a week. How do you guys feel?

Group: We love it! So that's one schedule. Some departments, like Redmond works 48, so like 2 days on then 6 days off. We can technically work 1 48 a month, and right now we're on this trial right now, but it's a lot like California and LA. Safety is what they're concerned about. Fatigue. This is a slower station, but downtown with the A car, you're wiped out. Because if you're downtown, there's so many calls that you're up the whole time. You many get up once, twice, but if you're in the A car you're definitely getting up, so you're not sleeping. You get pretty tired. You try not to take 2 shifts in a row, but it happens sometimes. A converse to that schedule is we do work holidays. This is the calendar. So we're C shift, so this is today, we were on our 4 day, and here we're on a 2 day, we work on Tuesday right. So here, if you look at the calendar, notice it goes like that? So there's no getting out of work, if you're like sick, you're working. Unless you can do a trade, and ask another guy and be like "I need this day off", "you need a day off?" and you can do a swap like that.

Kay: So do you guys know B shift pretty well? Like is it awkward to sub in for someone on B shift and not know anyone at all?

*Group: Yeah, we pretty much know everyone, in this station. If we were to go somewhere else, like the far north end or the far south end, then you may not recognize everybody. But that's okay, we're all trained the same way, we all know what to do. Overtime, or like your debit day, you could be anywhere in the city. You're assigned here you're here, and when you do a trade you'll probably start with people in your station, the battalion, or guys that you just know well, like "hey", and now we have this trade page on Facebook like "hey who wants to trade?" It used to be 12 hour days 14 hour nights, way back when. And that was everyone kinda lived in the city, everyone was close, when we went to 24 hour there was a big uproar, and everyone started moving out of the cities, and now because we have all this time off, it's changed some of the closeness of the stations. You don't get as many off shift stuff together because people live everywhere. You got people in Portland, Spokane, and Bellingham, and that's why they're talking they don't want people working a lot of days in a row, then being off a month. In LA, there's guys that live in Hawaii, and they work for like 3 weeks straight and then they're gone for a month. So it kinda affects the whole part of the job where you learn about these guys, and teasing him *points to Smith*, and it's fun.*

Kay: Yeah so the social atmosphere is pretty good here?

Group: Yeah.

Kay: So you're training *looks towards Stratton*, what is that like?

Group: So they run you through a 16 week course. They say 10 hours a day, but its 12 plus. Everyday, 5 days a week, but lovin' every second of it (different person), they break you down pretty good. 16 weeks, and then you get sent out to a station, you work your regular schedule, the training is rough. Those 16 weeks…

Kay: So what do you do? Give me an example of your typical training day.

Group: Well you're there at 6:30 in the morning, you do your rig checks just like you do them here, everything's the same in the morning as if you were at a station, they run you through warm ups, they have set tests at the end of every week, physical tests based on skills we learned throughout the week, so we spend that whole week practicing the stuff we're tested on Friday, then we learn something else. Every morning we're out practicing that stuff, and generally in the afternoon they'll introduce side topics. Eventually, later on, you'll use all of that on a test. So it's basically building on top of what you learned before for the first 8 weeks. After that, they send to up to North Bend for a state fire training camp, up there they run you through a whole week of line fire, where you're actually fighting fire rather than treating it like it's fake.

Kay: How do you set up a fake fire?

Group: Fake fire? They use a traffic cone, basically. "This is the fire here, help put out this fire". Whereas when you have to go up to North Bend, it's this big concrete structure with palettes in it and burning the palettes, so it's actual fire, so obviously the danger and the risk is a lot higher, that's why they put you through 8 weeks on intense training beforehand so you're not like some guy off the street wearing a fire suit. So then, a couple weeks after you go to North Bend, they have a house somewhere in the city, that they need demolished or someone donates to the city, for us to go in, and do training on an actual house. So we force open doors, windows, cut open holes in the roof, same thing we did in North Bend, but on an actual house and not a concrete building. Spend a whole week there doing that, and that's generally towards the end of drill school.

Kay: So you do a controlled burn of a house in the city?

Group: They'll add like 2 or 3 more layers of drywall to make it burn longer. They'll stay in one room, and the next day they'll do another room, just to try to not get it too big. So they can actually see how they would react in a controlled situation.

Kay: So towards the end you're more of practicing procedures and making sure you do things properly?

Group: Yup.

Kay: Is training mental, physical, both, like what is a percentage? Do you do push-ups?

Group: Yes. It is physically, emotionally draining, every day it completely drains you. Later on, you can feel our gear and feel how heavy it is, and that's just wearing out gear, and not even doing any work. And the challenge mentally, is you're in a black room and smoky or whatnot, and you can only go by your feeling. You know the heat's this way, but you don't know what's in front of you like tables and chairs, so that's a big part. There's another aspect to the mental part in dealing with the medical side. Dealing with people with psych issues, you're trying to help them but they don't understand it every time, so they might be fighting, and the next minute you have to go to another call with little children, deaths, and so that's hard to manage.

Kay: How do you deal with the mental stress?

Group: It's a big thing right now, the fire service is trying to do a lot of training on suicide, like PTSD, mental health. Because people, you never know what call is going to be the one that tips it over the edge. You see the same thing all the time, where you don't think it's bothering them but then it's like your cup spills over. And some people react differently to different things. Um, part of it, when we get back in the rig we joke about it, like if people had recorders on the stuff we say is bad, totally harsh. But that's that, you get that out, you talk about it, and it helps you cope. Because if we didn't do that, we'd all be a mess.

Kay: What does that mean, talking about it?

Group: Well after a run, if it's squirrely or weird, we'll laugh, or they'll be something unique that we'll laugh about that maybe seems like we shouldn't be laughing at it. I mean we joking about it, but it's deeper even. Really, we just going through what happened, what we could of done differently. Yeah, exactly, every crew has a debrief on the rig on the way back, like we may make a drill out of something that went wrong. If it's a big event, like a kid or a death, the city will get involved with a critical stress debriefing team, and so like if I notice something with one of the guys after a call, I'll call someone out, and they'll come to us right then. They come here, so they'll do that for us. Like sometimes the Chief will just put you out of service. Like "hey I just wanna talk to you guys, how you guys doing? Do I need to send someone over here?".

Kay: The entire station?

Group: Yes. It was different, a couple years ago, we had this hanging. EMT's had already been there, and we will like "yup, we will wait, and we won't really get involved." We were going somewhere after, and we looked at the screen and they put us out of service, like "hey we saw this type of call you guys were on, how you guys doing?". We were okay, because we weren't like hands-on and didn't see anything, but they still put us out of service. They are a lot more observant about the types of calls we go on. So sometimes they do this whole thing where if the whole crew was on a tough call they'll send people home for the day, they have psychologists they can bring in, offer more training. A lot of it is just by ourselves, that's part of getting to know your crew. How do they normally respond after a call. 'Wow, they're really

quiet today", or maybe they are a quiet person and they're being loud and obnoxious. That's happened, I've had a guy where he was totally being disrespectful and rude, over the top loud, like "what's going on with that guy?", but they found out some stuff was going on with him, like okay. So it's all in people's personalities and how normal they are, and then what's different. Yeah, uh, there's some things that we've talked about that uh *laughs*.

Kay: So going along those lines, and feel free to not answer any of the questions I ask by the way, what was the most challenging part about this job, for each one of you?

Group: The day in and out stresses. You know, you almost end up being too cautious at home. And some of the challenges, you know you take so many precautions, at least I do with my kids, so they don't get injured, but it's almost too much. *Smith talking*

Kay: So like what precautions?

Group: So like when they're swinging I'll be the nervous nelly, like "don't swing so high!", just because I've seen stuff happen, right, you know, and that's the big challenge. *Wallace talking* Sometimes it's the other side of it because you seen so much stuff all the time, you're like "ahh you're not really hurt, like that's not hurt!". So we're almost a bit too stoic, like walk it off! I think for me, I'm still new in this career, I have a military background, so when you're new, you kinda get bounced around a lot. You're looking for your own station, folks that you can work with a lot of the times. And when you're getting bounced around, this person may work this way, and that person may work a totally different way, so for me that was hard to get used to, just adjust not only personalities, but how they worked together and stuff like that.

Kay: What do you mean by different work styles?

Group: *Valeri talking* How they handle different situations, So like we're all trained the same, but we may do the little things differently. So now that we've been together a couple months now, I know what Smith's gonna do, and what acting lieutenant Wallace is going to do, uhh in certain situations and I can go from there. If you go into a different station, the lieutenant or your number 4 person may count on you to grab something different than you would because that's how you work it. It's just little things that you gotta get used to. Like communication. We all have certain roles right, and this person does this, but at other stations it makes sense for you to do it. Once instance is interviewing, like interviewing a patient when you call for medical call. A lot of the time position 3 is doing vials and position 4 is doing the interview. Well sometimes some guys like the officer will do the interview because he already has the report, sometimes the driver will get in there even though the driver is supposed to be doing other stuff, like sometimes they wanna be a medic or they wanna practice their interview skills. It all depends. So if he wants to practice interviewing and he starts interviewing and the officer comes in and is like "get back", and I guess the most frustrating part is that it's not consistent. So next one he goes on, like "why didn't you interview that guy?". "Well because you did the last time". So it's kinda like micromanagers right, Like you have some officers that they're in

*their, telling everyone to do everything. Like we're all trained, everyone knows their roles, we don't need to be trained and have you constantly do this. Like telling Smith where to park "hey Smith, park right here!". And the challenge with working with different crews during debit days is knowing the crew. Some officers are like "put out the fire, I don't care how you do it, just do it". And others are like "so I want you to get in back, I want you to grab this hose, I want you to grab that hose, walk 5 steps" I mean they can really get into it, and so that's one of the challenges. And yeah, so how it works, you're in drill school for 14 weeks, and after 3 months you move to truck work. So they're trialing these 12 hour truck days where he goes up to the local ladder truck during the day and comes back at night, and he'll go over there and be full time there for a month or 2. And then he may come back here the last few months of his probation. That depends on vacancies within the department. After he's off probation, there's a vacancy list that comes out the first of every month, so he can put in for wherever he wants. Same with Valeri. He's been here for a couple months but he wants to go to another station because you like to be busier towards the beginning of your career. So you can put in for something and maybe get it and maybe not, and once you get whatever you want, you know you're based on a good crew, or a good house or like a hazmat special unit, you find your home and it's based on do you want a busy station with a terrible crew? Or a slow station with a great crew. It's always good to have a good crew that's fun to hang out with and being a little slow rather than miserable. Certain districts in certain parts of the city have different types of runs. The frequency at some stations gets a little... *chuckles*. As you can imagine the frequency of homeless trend towards downtown, and here in Madison Park we don't have that. We'll have more of the elderly fall or something like that.*

Kay: So speaking of those, we talked to a fire marshal yesterday and he talked a lot about low acuity calls. Can you explain more of that from a firefighter perspective?

Group: Low acuity, is like, you have people that call 911 that aren't, and you have to go, it doesn't matter what it's for. So you get there and it's not really an emergent type of call, and they're calling for literally anything, like they could be calling for "hey I unplugged my microwave, can you plug it back in", like whatever, there's all kinds of reasons. Basically low acuity is a non emergent call, so a lot of times the downtown core is full of those, because of the homeless for instance, or some of the other silly's down there, they're not hurt, they're just hurt, and so someone will have to staff that call because they were told to. Or someone fell and they don't want to pick them up and hurt them, so they called us to do it, so that's low acuity. Basically they don't need to call us, they need to have the staff there help them, or call a family friend, or some other service directly. They're getting the services, and then part of that is that we're gonna try to direct services to them so they call that service company instead of us. I think that that low acuity, we're trying to get them the resources they need, so they get the help, so they don't feel like they have to call 911 to get the help, as opposed to having someone else there for them because they're typically not 911 responses.

Kay: So you respond to a low acuity, and how does the service recommendation work?

Group: We'll email or call. We'll try to tell them like, "these are the types of things you should call us for, sometimes you can take your own car or a cab to urgent care, if it's not life-threatening". Sometimes we move them to a memorial gardens or something because someone needs to assist them but there's actually not. There's certain resources, so I'll come back here and do an adult form, for instance if you're over 65 and you're in your own private home, or you're in a facility and you're not getting your own private care, I can do an adult report and it goes downtown to this guy who's in charge, and he can call DSHS or these nursing lines, and they can get people to come out to the house and interview, and see what resources they would need. So that would be in home care, it could be them actually having to go to a facility, it just depends. And the low acuity deal is working with them, little things, like showing them how to lift a patient, instead of calling us to do it. And that's what they're doing, they're picking them up and putting them back in bed. So we don't get spend the time running around doing it, and they're getting the resources and a happier life. They don't have to wait for us, they aren't falling as much, their house is getting cleaned up for example, because some can be in pretty dire straits.

Kay: Is that process efficient? Going to their house and saying "use these resources next time".

Group: Well I think it's getting better, it's getting better. It's slow. It's been going on for a few years, but I think we're making headway. I don't know the numbers, you'd need to speak to whoever's doing that, but it generally seems positive in the reading that I've done on it. Besides, putting it into the report, which our supervisor does, in the actual report we turn in it has a button that has low acuity so they try to track it and they'll be able to see that these people call all the time for the same things, and they'll try to manage that. Yeah, it's hard to help someone who is still ucid, still capable of helping themselves, but you can tell is kinda going downhill and they don't want to be in a facility and they don't want the help, that's where it gets a little frustrating. If they call constantly, we use a computer to do our reports now, I can look up and see how many times we've been there. Some people it's a lot.

Kay: Do you find these calls frustrating, or enjoyable because you get to interact with the community?

*Group: Yes. *everyone laughs, Smith starts talking*. I like the end result, that they're getting better help, but I don't enjoy the initial run, just because, I mean we're trained for more emergencies, and this is less of an emergency situation. Not that it's not important to this person, but when we go on a run and it's code red, we're kinda ready for something. And so, I wouldn't say it's a let down, but it becomes a little more administrative and less critical.*

Kay: What happens if you get a code red during a low acuity?

Group: Well a lot of the times we get a code red and we go there with sirens because that's how dispatch has deemed it. Like a fall, they don't know how bad so they'll send us code red. And it could be bad, but it takes us out of service for something that could happen. There have

been times where we get a call about a fire on a low acuity. We don't leave because then there's surrounding engines, trucks and aid cars that will then respond. It's still gonna be quick, just not as quick. We're not gonna leave. So like, we don't transport, we call for AMR. If they happen to be on scene we can transfer the patient to some equal or higher service. But so, as the driver, if it's near the end of the call and we're wrapping up, I'll start scanning the screen to see if anything is popping up, and if something does come up, we'll be like "hey we can take this". Yeah so yeah, we have to respond. Based on what the call says according to dispatch it's a code red which means lights and sirens, or it's code yellow, which means we're driving normally as a car, which takes longer, but if it's just a fall and they need help getting back to bed or getting up, that's normally what we call personal service, and that's code yellow. If it's a fire response, but we know it's false, like burnt toast, we'll go code yellow for that. We'll still go, just not lights and sirens. But we won't send, you know some buildings based on their size they do what's called a 2 in 1, two engines and a truck. If they call right away and are like "hey, it's just a false alarm", no one else will go with us and we'll just reset the alarm.

Kay: So just to explain why we're asking these questions, as designers we look for places of opportunity, inefficiencies, and it could be literally anything, from physical to an interface, to a social atmosphere. So that's why we asked about low acuity's, and the mental health aspect is really interesting to us too. Going off that, can you describe the technology you work with on a day to day basis?

*Group: *Wallace says to Stratton* Get the tablet! I mean that's the technology we're dealing with, right. So our medical forms they were called 20 B's right, so they were basically a form that asks their personal name, address and then the vitals we got. And then down below we have this narrative where we're like okay "this is where we're at, this is what they told us. And now it's all on a computer, and they problem we're having with it is that it takes forever. It's supposed to be data driven, because they want the data, and there's different companies that do this, but it's the EMS online reports, and we chose this one but you can literally spend a half hour on the reports. Every time you click the button it will open up something else for you to do, ya know. The 20 B literally took 5 minutes, but now you can spend a half an hour. Another thing is that it logs out all the time. There's a bunch of frustrations for this. So if this sits idle for a long time it takes you all the way out so you have to log in, and that was one of the debates, so part of the job in the front seat is helping him *points to Smith*, ya know with cars and traffic and going through intersections and if there's cars parked in front of hydrants and paying attention to wherever we're going, so I don't have time to log in to this thing. I just hand it to the guys in the back and say "hey, log in for me". The officer has this while he's driving. So we have our radio, our pagers, there's a computer on the rig that gives us all of our dispatch information, so like right now, if we got dispatched, it will show an automated computer voice and tell us basically the fire or need and the address. So we get in the engine and I press the response button and everything's time stamped. So we'll push when we're responding, when we're at scene, when we're on service, and there's a map function on there so if you go 2 districts over you can look at the last few turns or see where the hydrants are.*

Kay: So when you get in the car the address is already plugged in?

Group: No. The automated voice says it in the station and you just go there. There's a map if we know it's a weird area, there's maps on the way out and on the rig, so our dispatch tells us if it's an EMS and we'll switch to 6, and we'll talk to a live dispatcher and they'll tell us some stuff about the call. "Hey this an issue, or the caller said this".

Kay: So how are you getting there?

Group: You get the address and you drive to it. You just have to know your district as best as you can. You know streets of rotation and avenues, and study your district.

Kay: So are you limited to this district?

*Group: *Smith talking* No, we go everywhere. I don't pretend to know all of them (he does *interjects Stratton*), but I've worked at station 2 so I kinda have the center core pretty well, but if I go, the north end I have that pretty well, but the south end I rely on everyone to guide me, and yeah.*

Kay: So how did you learn all of that?

*Group: I learned all of that by driving, before shift and after shift, during shift. Part of his deal is his monthly test. Our new policy and guidelines has him take a test every month, it's part of the district too. It's different now- now it's just to different stations, to hospitals, to different buildings, used to be where you'd study your own district, because that's where you'd be on probation, but now they don't really assign that anymore because he could be anywhere in the city, so they took away that piece of studying in their district- the avenues, the ways and courts, the streets. But, so Valeri's the backup driver. So what he's been doing is he's been driving every shift and then Smith's been taking him on off shifts to weird addresses, but his job is to learn the district on his own, because when he's gone *points to Smith*, he has to run to drive on his own. So he's gotta learn the district. If he doesn't, we just use the computer or we gotta use our phones, or... Everyone should know their district, and the high frequency districts around them. They should know the districts surrounding them, but the third district over, I mean they'll have an idea, but...*

Kay: Would a map that was easily loaded be helpful?

Group: I mean yeah, if it was easily loaded and worked well. So again, your project, just so we can be helpful and we're on the same page, what is it?

Kay: So we are in the Human Centered Design and Engineering program at the University of Washington, and basically we practice user-centered design. The typical design process is we choose a user group, then do some research like we're doing now, and we go in and get some

contextual information and then we as designers look for design opportunities or design challenges (*Smith interjects* like the computer system or…?) possibly! Or physical prototypes as well, but I think we're leaning more digital at this point. So we look for anything, then design a prototype as a group and produce a low-fidelity one, and then we'll test it with our user group and see what needs to be changed, and then re-iterate on it and improve it and improve it, and then eventually our class ends when we present our prototype to industry professionals in the area. So that's what we're here. So we chose firefighters as a user group because we think there's good opportunities there.

Group: So do you want to focus on low acuity then?

Kay: Not necessarily! We're still open to anything. We're just doing research and seeing what all is out there. We have 2 other group members and talk with them as well. But the map thing is really interesting.

Group: I think it's just one of those things that's just instilled in Seattle, like you just start learning your district. I mean your station is your station, and we have little maps up on the rig, and then there's a map, I can hit the map button if I want to, I can say "get route" and it will bring up turn by turn directions. But that's how it says to go, doesn't mean we're going that way. Some roads are narrower than others, or hills, so I just mainly look at it for the last 2 turns. There's things in there to help us get there. I mean that is a good idea, I'm not sure which way the department wants to go right now. How it is right now is you are assigned to a station, and this particular shift, and if the driver leaves then the backup driver basically takes the spot if they want and so they've had a chance to learn the district. The thing is, is that the city's proposing to is having more of a pump academy where drivers want to be drivers and focusing on hydraulics first and district second where we've been focusing on district first and hydraulics second. And so, if they choose to go with more of a testable position, and if they have someone working on the north end now getting a spot on the south end, having a map on the rig with an address and a route of travel would be helpful for the driver. The low acuity is a great idea too, because I know that needs help. Um, ya know the challenge too is the computer system we're working with. Seattle seems to low ball it and we get what we get, and it's a challenge.

Kay: So can you show me that form that you guys fill out that takes 30 minutes?

*Group: Is it still loading? *refers to tablet* (*Wallace says* No.) You can just do a make believe one. One of the frustrating things is like we go on a lot of falls, or seizures, and you'd think we'd be able to like go "boom, boom boom", quick. Well here it's like 3 layers down, I gotta hit all these buttons to get to what I really want, right. So it's been sitting on the rig since this morning, and it was frozen out, so I had to type in my password just to get to this screen, where I have to type in another password. So I'll be on the engine and then I gotta sit there and try to bounce along and remember my password, or I can wait until I get there. And lot of times I wait, because if we're already there I can import, instead of make a new one. Now I can delete. That was one of the things they added. If I import the run, to fill out, before I couldn;t delete it.*

I'd have to go through individually and click delete delete, and someone downtown in the office would go through every month and wipe out the deletes. Now I can do it right here, so I make a fake report in training, and then just delete it. And they're slowly making changes, so this company sells it to everybody, so they're not designing it for one department, so anyway…

Kay: Do you mind if I take a picture of this?

*Group: I don't know. Just do it. Do whatever you gotta do to make it better. I'll take the names off so I can show you what you see when you log in. *takes picture of tablet**

Kay: So what types of information goes on this form *pointing to 20 C form*?

*Group: On this form here, name, birthday, chief complaint, medical history, what drugs they might be taking *points to 20 C form*. So, again in the morning too, a lot of what we do, here's another thing you could take a look at, a lot of this is incident accountability. So one of the things we do is we all have radios, and I go in in the morning and log us in for specific radios, so if I press the emergency button they know exactly who it is, if I key Wallace, they know it's me. We have this little passport on the rig, it basically has our name tags, so when we go to big events I can hand it to the chief, it's basically incident accountability. It's also on our helmet shiels, a big 34, so they know "hey, that's engineer 34", right. So I'm automatically there, that's me, because I logged into the system, everybody has passwords to this. So I'll log in and set the shifts in the morning based on who's working. So this is a 20 C form. I was trying to find a 20 B, and we liked it. I'll rip off a copy and I'll give it to the ambulance company, or the patient. 2 or 3 copies, it was perfect.*

Kay: So question on that. You mentioned you were logged in personally. Is there any personal information on those accounts? Why can't there be a "fire station 34 account"?

*Group: So when you wanna find out who was on that run *someone comes in with a 20 B form and changes track of conversation*. So we love this right, just because it has straightforward information. So we'll use this one still, the 20 C if this one goes down *points to tablet*. Like if it freezes or the battery dies, or if we have a lot of patients, I'll be doing one and the guys will be doing another, and I can add those in the tablet later. Or if I wanted to be really nice to AMR, I can use the 20 B form and just give them a copy. Because they have to do their own report too. In Seattle we don't transport in less it's life threatening, so our aid cars will transfer, but we more frequently use the AMR's that we contract with to do the transports. And so we page them and give them a report of what we did. This report I can transfer to a medic, but that's one thing is that right now, AMR uses a different software than what we're doing. So like they're ahead of us, but now we're like "hey guys can you use our system" so we can transfer it to them. Because then they wouldn't have to fill out their whole other report and redo it again.*

Kay: So they want to know who is making the report?

Group: Yeah, so sometimes we have to go to court, right, and like who was on that run? So, on our computer, its called CAD view we can look at our history and be like, "what runs did we go on this week?" or the year. So we have to go to court, "who was on that run?" so let's call them and ask them to come in, or if we're exposed to something, "who was on that run?" because we'll get called in if we're exposed to something.

Kay: Do you guys have an ID number? A number that belongs to only you?

*Group: So you see how he brought that in *refers to a badge type thing that was placed on the table*? We have a city number, which is a long number, and our alias, mine is my 2102 number, so when we sign for radios, we'll sign documents and put that in there, we'll put our name, our alias number, so 2102, and our assignment number (34, C 11). So engine 34, C shift, and 11, that's my off day, my debit day. So, like C 11 *shows us calendar*, that's when I'm going to work my debit day. So every 7 weeks I look for that number, and it's going to be on D shift, it could be here, if there's a whole here, or it could be wherever they need me. And the alias number builds on when you got hired. So I work with a guy that works at my assigned station that's been working for 49 years. His number is 608. His number is *pointing at Stratton*, 2483.*

Kay: So, ideally, instead of individual passwords you could have a station account? What is the importance of having a password and your own unique account?

Group: I think it has to due with the confidentiality, to where it constantly has to be changing.

Kay: I'm noticing a lot of pages to go through to submit a report. Is it possible to give a verbal report?

*Group: Yeah, we do that. Over the radio, or in person. So when the ambulance gets there we give them the short report "this is a 6 year old female with a history of PD and asthma and her chief complaint is this, these are her meds, she wants to go to this hospital", you know, whatever. *points at tablet* So I chose this shift, and I this is our unit, so station 34, we're C shift, and if we get a run and get into the engine, I can either do a new record, and it's just generic-- at some point I have to import, because it's an assignment with an incident number and it starts timing. There's always national codes, like we try to get everywhere within 4 minutes, we have to leave the station in a minute. Everything's time stamped, so like when we get to the patient or inside (some departments do that), and they track how long we were there. So I would input from CAD. So right now these are all the current, these are the last 3 runs that the station had and then you import into CAD- this one probably got canceled or something Like this is how it would work. So I would make sure this is running, and when we're responding I would click it, and then import, so it has to have a Wifi connection, right. And if I walk away from the rig and I haven't imported, I have to do a new record, and just a generic form will pop up. And later I'll do the CAD import and I'll select whatever response I was supposed to be on. So some of the things that are stupid are like run type. As you select this,*

*but it's always a 911 response. It's always emergent at first until we get there and determine it's not *refers to a drop down box with emergent and non emergent as options*. So and we don't mess with these things. *Smith speaks*, and you told them that this was initially designed for inner facility, it wasn't even for us originally. But I think it's less expensive. This is a new one, that they just started making us do, and it's level of care. Well we're all EMT's, so that should be highlighted constantly too, and this one they added too, before we didn't have to do this, so this little box right here, after we're done answering, if this is blank it will say lock record, and at the minimum I have to do all the things in red. But every time I click something else, the list gets bigger. This is one thing you think would stay consistent. I have to go select driver, officer, and 2 others even though it's always driver, officer, 2 others. When I did that set shift, I did it right there. They know who's in what position, And every station has this, everybody has to do this. When I log into the radios, those are set positions, officer, driver, and position 1, 2, 3, 4. So they would never train unless he goes to a training for a couple of hours *looks towards Stratton*, but then the radios would still change. So why would you need to fill it in if the radio already knows? So the things I have to do while we're on the call is the patient stuff right. *Smith speaks*, so if he can get logged in, he's doing this on site, then he grabs this *motions to a 20 C form*, then transfers this to the tablet later. So the minimum I have to do is "Kay", what's your birthdate" *I say 8/13/1999*, so we input here and have a little pinpad, or your can use the numbers, or sometimes if you push the right button a keyboard will pop up on screen that you're constantly fighting with it. So at a minimum I have to do these things right here, and if I don't, later it will say "you don't have their last name", or I can just write a fake name in there too, like John Doe, because sometimes they won't talk to us. So then I can search, right *types in my name*, and you have no records. So I can select you right, and that will load your meds, your allergies, and your history if we've entered it before. But it has to be spelled exactly the same way to bring up anything.*

Kay: So my name is Katherine, so it wouldn't pull up anything? But if he did a report and entered your name as "Katherine"? No. If I look on your medication bottle and see "Katherine", where you might say Kay, or if you had a middle name and then don't do it the next time it will do that too.

Group: Well it would if that's what we put in before. And some of this stuff, I don't have to add now, But if I'm just sitting there, wasting time, I'll start to ya know click, click, click. And so they want you to stay out of service until this is all done. Some people do, some people don't. It's different here because it's a slower station, but if you're on an aid car-- they try to get aid cars to take runs for the engine so there's a lot of pressure on them to get in service quick. So they're trying to get out of that happen, you know "get in service, get in service", because you let these stack up, and they take a while to fill out. So there's certain minimums right. I don't have to click this certain address or scene, but one thing I have to do is I have to say whether you're homeless or not homeless.

Kay: It's really interesting to me that there's a lot of fields there that you don't have to fill out, and so you're spending a lot of time scrolling through when you could be doing something else.

*Group: So if you click on this it will tell you "what do I have to do", and you can go right to it. So now watch when I do this part. So this is, *goes to another drop down menu* we're either going to treat and transfer to EMS, or we're going to leave you on scene because you know what "you're not really hurt, or someone else calls". You can say they refused treatment, without care, but there should be an in between button. There's no "no injury button", like it's either refused care or taken to the hospital. It might have been you just weren't hurt, or it was a personal service like I just picked you up off the ground. So you'll see like dead on arrival, or we left you with the PD, so now watch when I click this. You see how many just popped up? How many was that? 8 different things popped up? There were 4, right? There's 16 now just from me saying I transferred you to AMR. Because now it wants to know, okay, where are they going, what are their meds, what are their allergies, So you saw there was 4. And I clicked 1 button, and there's 16 now. So if I say you're hurt, it will ask "well how were you hurt?", and they want all these details right. I clicked 1 button to say you're going to go with AMR and it opened up all of those. *Refers to another drop down menu* So the ambulance is either place of choice, closest facility or protocol, right. Trauma you're going to Harborview, right. So we'll say place of choice, and you're going with EMR and I have to say what hospital you're going to, so I'll say Harborview. That's all I have to do there, and then these are the timestamps, so they got the call at 19:01, what is that? 7:01, that's when they were dispatched. So dispatch was talking to them, they pushed the responding button, and that's when they pushed the on scene button, and we don't do these two. And then they were closed. So that means they probably got there and were code greened, that means they canceled. And it tells you how long the total call was. So a lot of this stuff is for other departments, smaller departments that track all this stuff. So they do billing, like here's the signatures. The only thing I do here is sign the report. And then refusal. So if you say "aw I don't wanna go", but we think you need to go, I gotta read this to you and you'll sign it.*

Kay: So by other departments do you mean other stations?

Group: No, other departments. Like Tacoma fire, or King County. Or AMR does this right, they bill. They would use this whole billing section and get insurance, we don't care about insurance or any of that. We just care what hospital you're going to. We don't even need the billing tab, you could take that whole tab out. So this whole incident page, almost everything on this incident page could be standardized, where it's always checked. And then patient side, well you gotta enter that, enter their meds, their allergies, and whatever their history is. And then you get their vitals. So this little red button is a quick button, but it's the same thing that's in these. So if they say "hey, I'm ready to give you vitals", I'll click this and enter their vitals, whatever it is. So here's the other vials page. So I just entered this, I can edit this. This is what it really looks like, if you go into the other tab. It's that detailed.

Kay: So if you go to the vitals tab that's red, it's different from the vitals tab over here?

Group: Right.

Kay: So which one do you use?

Group: I use that one at first, when they're talking to me like "these are the vitals", boom boom. But if I need more details I'll come here. Like palp for instance. So palp is when we do it by hand, pump up the pressure cuff and they feel your rate, so you're only getting this top number, so you'll have to say it's palp. It won't let me lock it without a diastolic, so I have to go in there and click palp.And if I don't lock it, it stays up in the cloud somewhere where no one can find it. So I have to lock it.

Kay: What is the purpose of locking it?

Group: Can't change it. For legal reasons, so people can't go make changes to it. Like "oh, you changed that after the fact!", and everything is timestamped, right, so they know exactly when we took the vitals. If this was a medic call there's a whole thing with medicines, and if it was CPR, the whole thing is timestamped. So here's the assessment part. A lot of the times they'll like to hear mental status, like how alert or oriented are you. So do you know where you're at, are you confused, that kinda stuff. The rest of the stuff you don't have to do, it doesn't let you not lock it, but there's the headache, the narrative piece. So primary impression, so you have this general category, like general weakness, and that will open up all these things, right. So I have to sit here and scroll through, so if there was a matrix...If I click this and start typing, it will bring up whatever, but that's one thing I've thought about, is if they had a matrix, like how do I get to falls? Well I got to go under impressions, click this button, click this button, and then under supporting signs, it will just say "fall", right, because what you do up here supports the sign and symptoms thing down here. But you see, that's just general weakness. Now if you go and choose something else, like substance abuse, this brings up just things about substance abuse.

Kay: I guess I have a question about typing stuff in vs using the boxes. Why can't you just type in "substance abuse, by this drug"?

*Group: *Valeri speaks* Because we are firefighters, and most of us can't spell! *Smith speaks*. Well but I think it's tracking, every little box can be tracked. Right, I mean I think that's the point of this.Data. It's easily to do a search for substance abuse where all these runs had substance abuse, whereas if it's in the narrative, maybe that won't come up in the search. *Wallace talks again*. So like falls right, I still haven't found falls yet. So you can't choose fall, you gotta choose something else. Like is he hurt? Is he dizzy because he hit his head? Like if I choose childbirth, now all these things related to childbirth will pop up. But a matrix would be helpful though. Like this is how you would get to a seizure, if that's all you wanted to say. Like on here *grabs 20 B form*, I would just say what it is, like it would take me 30 seconds. Versus now I gotta sit through things and search. *Stratton chimes in* Like it would be nice to have something like "falls" , and up pops your primary, secondary. *Smith chimes in* And then what fields are data driven? Because maybe some aren't, and you can just write those in. Maybe they're only concerned about homeless and substance abuse, and if it's not those key words then if falls*

*isn't one of them, we don't even need it as a drop down and it can just be written. And I found probably that I was way more detailed on here *touches 20 B and C forms*. On here, some people are like "how do I close this the quickest", and so they'll just hit that little button, I mean there's still a lot of things here right. And you don't normally use the keyboard on a run. *Wallace responds* I think I normally use the keyboard because I can type faster. Some people will just use the stylus because you can bring the keyboard up on here, right. And this is all a perfect setting, I mean we're in a room, a table, it's dry, I mean this is ideal. When we're outside, sometimes it becomes a bit more challenging. Some people take off the keyboard and leave it on the rig, but I think I normally take it with me. It depends on how much typing I'm gonna do, right. If there's a drop down people will just use their fingers real quick, but if it's a lot some people use the keyboard on here, or the other day I saw this guy literally typing 1 letter at a time with his finger. So I'll use the keyboard. But I hate the one on here because it pops up on both sides and it's blocking the screen. So I think I'm typing! That's the newest piece of technology. That's what's making people want to retire.*

Kay: And so where do you send that form?

Group: Nobody right now, that's the other funny part. SO the hospital has access to it because they have some master code. The only people who have access to it is the medic. So I'll get there and I'll get the basic name, birthdate, meds, and allergies, and vitals, and I'll do a transfer and I'll get a code and they'll either write it down, or we can put a note on our CAD view, so later when they get to the hospital they'll open it up, see the report, and finish it. But other than that, no one sees it.

Kay: And when they finish it, does it write on your form as well?

Group: Nope, and so I give it to them, and I'll delete mine. Before, I couldn't delete it and they'd have to delete it for me. A lot of times they just start their own report.

Kay: And with these papers, where did you drop these off to?

Group: Station 25. One of the copies would be AMR, one of the copies would be for the station, and 2 would be given to the patient and downtown. And it would go into file for a year. And then we can shred it. Now you have to go to a computer to find the one you were on, and you have to open a report, and it's not very easy. Like that you can just go look in a file cabinet downstairs.

Kay: So my last question. Would you be willing to take us on a little tour?

Group: Yes!

end recording

Insights

1. It seems one of their pain points is the inability to do things quickly. They want to quickly get on scene (4 min response time is the goal), quickly fill out the necessary forms, and quickly learn the communication styles and work styles of their partners.
2. I believe that one of their motivations is each other. I noticed they were all very close, and in answering some of the questions about mental health, tough calls, and communication, I realized that they are all motivated to get to know each other in order to do the most efficient work they can while staying mentally healthy.
3. They all share a common goal of wanting to help the community. The goal of fighting fires seems secondary to the fact that they want to make people live happier lives. This seemed clear to me when they agreed that there was an aspect of the low acuity calls that they liked-- that making someone's life better was rewarding.
4. It seems that another one of their pain points was some overhead, Seattle organizational stuff. They mentioned the new driver course and how it puts hydraulics over district (and they believe that will decrease the comradery), and how Seattle adopted a new computer system even though it wasn't made specifically for firefighters.