

Video Transcript: Mics & Sirens Episode 07

[Silvana Pulitano, Podcast Host] You're listening to Mics and Sirens, the official podcast of the Department of Fire and Emergency Services in Western Australia. DFES acknowledges the traditional owners on the land on which this podcast is created, the Whadjuk people.

[Sirens sound while news footage of fires play]

Drones. Robotics. AI. Are they the way forward for emergency services?

[Jon Broomhall, Assistant Commissioner Future Capability] Absolutely they are. If you could imagine in the future we have a drone that's on a permanent loop, and when a 000 call comes, the ComCen's got the ability to turn that camera on and have intel. There's a role for robotics in areas where we don't want to put humans. We have a lot of change coming in Western Australia. I like change. I like to make things better.

[Silvana] Imagine the year 2075. Firefighting robots navigate burning buildings guided by intelligence from AI powered drones in the sky. Or a fire truck extends its retractable legs, stepping over a traffic jam, to reach an apartment fire in record time. These technologies could be ten, 20 or 50 years away. Or they may never leave the realm of science fiction. But what we do know is that technology and innovation are transforming the world of emergency services faster than ever before.

We've come a long way from the horse-drawn fire carts and street alarm boxes with break-glass panels. Over the decades, new equipment, smarter processors, and stronger partnerships have reshaped how we respond to disasters, improving communication, safety and intelligence on the frontline. Natural disasters, both in Western Australia and around the world, continue to push us forward. They challenge us to adapt, innovate and build more resilient communities.

Our guest today is at the forefront of that change. As Assistant Commissioner of Future Capability, Jon Broomhall leads a new division within DFES, dedicated to exploring emerging trends and technologies that could redefine emergency response. So what's next? How do we improve? And how do we prepare our communities for the future? Let's find out. Jon, thank you for joining me.

[Jon] Thank you. Good to be here.

[Silvana] Last year, the career Fire Rescue Service celebrated 125 years of service. Back to the horse and cart style of firefighting. Is that really how we fought fires?

[Jon] Of course. Yeah. It literally was. Being a, you know, a career firefighter originally when I joined, which is a, you know, a really lovely way to start in the agency. We did do that way. My grandfather was in the job and served at Perth Station and, yeah, he rode horse and cart. So yeah, we did that. And then I think, you know, we graduated to the bike and bucket, and you know, and then, you know, motor vehicles came in in the 20s and 30s, and here we are now. But yep, horse and cart.

[Silvana] How has firefighting and emergency services in general evolved over the years?

[Jon] Yeah, look, we've evolved enormously in Western Australia. The formation of FESA, then DFES was huge, and amalgamating all the emergency services into one agency was a little bit unique and a bit of an experiment. QFES did it and they've now undone it. But I think we've held the course and we're getting the efficiencies of it now and, the good management structure where we've got coordination and good arrangements across all the State. We didn't have that before. We had a lot of lines on maps where people would, you know, do some work and then not do some work. And having all that amalgamated and sorted is a good thing for WA.

We're too small a population to have, you know, discrete agencies. I know a lot of people want that, but having seen it from both sides in my career, I think what we've got now works a lot better.

[Silvana] What's the biggest change that you've seen over the years?

[Jon] Oh, the creation of FESA, which then became DFES was massive. I joined the WA Fire Brigades Board and then we had the SES separately and the Bushfires separately. And having that all amalgamated, has been a good thing for a lot of people's careers. It's certainly mine. You get a lot more opportunity to do a lot of different things and see different parts of the State.

Bringing back in or bringing back on an emergency helicopter. We lost that in the late 1980s when Westpac pulled out of that, that kind of sponsorship and we didn't have one for about ten years. So, the government investing in that and then giving it to us to run and all the things that we do now with Marine Rescue, we've really got a good end-to-end business and service for the community. So that's a good thing.

[Silvana] What are the drivers for change? Is it, you know, do we go based on post-incident reviews or are we looking to overseas?

[Jon] Certainly. Certainly, what happened in WA, is we had a bad run with reviews, and we had a bad run with Royal Commissions, and that was the same right around the country. The fire services hadn't really matured, and we were kind of forced to mature. And the same happened in Western Australia.

We had a bad run with some really bad incidents and not necessarily the people that ran them, but the systems that were used and the arrangements we had. And we've now kind of sorted that out. You know, they've been tested. But we have to continually improve. We can't just rest on our laurels. We have to continually look and actively examine how we operate and what we're doing.

[Silvana] How do we find out about innovative tools in emergency services.

[Jon] Yeah. Look, we're very isolated in WA, and we do need to look internationally and interstate. I think the advent of AFAC has helped us a lot. It gives the opportunity of staff members to move around the country. And...

[Silvana] Can you explain AFAC?

[Jon] AFAC is the Australia Fire Agency Council. So all the fire agencies and emergency services around the country and New Zealand and Australasia, get together, currently led by

our commissioner, he's the president of AFAC at the moment. But there's a whole lot of subsidiary groups within AFAC of areas of expertise, where we get to mix with our interstate counterparts and understand, you know, what we should and what is best practice and what's not, and where we can improve and where our shortfalls are.

In my career, I worked in rescue branch and technical rescue for a while. And when I was mixing with my interstate colleagues, that gave me a great breadth of knowledge, and the ability to pick up a phone and phone a friend and say, well, what are you doing here? What do you know about this? Because we are very isolated in WA. We're the most isolated capital city of, I think, anywhere in the world. And we don't tend to travel much. But, you know, when we do get out and about, it's good for - to bring the innovation and change and new opportunities back to us.

[Silvana] Do you find that when you go to things such as AFAC and when you meet people from interstate and overseas that things that they may suggest or things that they're doing don't exactly work in the WA landscape?

[Jon] In some instances, yes, but in others they do. So I think in the bushfire context, a lot of Australia is very similar and a lot of the innovation and change is transportable and transferable. I think in Western Australia, the digital transformation is something that is upon us. And as an emergency service, we have to respond to that. I think some of the limiting factors for us is the availability of data. We've got a massive landscape, 2.5 million square kilometres of Western Australia, and it doesn't have the same data coverage, you know. And a lot of our improvements I see are around intelligence and the ability to get the information to the people that are going to the fires or the floods or whatever we're going to. You know, and we're getting the low or low-Earth orbiting satellites that are coming in. There's a range of those that are happening. They're not fully covering the State yet. We've also got the Federal Government looking at public safety, mobile broadband, and they've talked about that for ten years. But that's something that really affects WA.

[Silvana] Is that more for remote places?

[Jon] Of course. But also, you know, in places where - of blackspots because not everywhere has good coverage of 4G, 5G, telco, you know, and so we need to have a redundancy and whatever we're using, we need a redundancy. So our radio network, for example, is quite old, and it still operates on analogue. And we're working with the police to get it onto the police digital system. But that will still only cover a portion of the of the population. So we need to have solutions, via satellite or via, you know, other means of operating everywhere.

[Silvana] So are those types of changes a quick fix or are they things that take time and obviously a lot of planning?

[Jon] Oh, a lot of them are beyond our control. So the mobile safety broadband we're waiting on, you know, the Federal Government to fund it. And then there's market forces. So the Starlink is being done by a commercial provider, which we're using at the moment. But there's - Amazon are coming up with a solution and there'll be other solutions. So, we can't rely on them, but we have to be able to use them and use the redundancy that they provide.

[Silvana] You're the head of Future Capability. Can you talk me through that role and what you oversee?

[Jon] Yeah, for sure. It's a brand-new role, and I think it demonstrates that there's opportunity for improvement in the Department, and the fact that we're focusing on it now. It's been for three months, four months now that I've been in the role, and I'm looking at a range of different things of what we can do in the future. One of them is how are we going to communicate in the future? We have a lot of change coming in Western Australia. The AUKUS program is coming to WA, which means nuclear powered submarines. And so we need to look at how we're going to combat that hazard. It's likely that our commissioner will become the HMA for nuclear powered warships, which will mean we have to up our capability, up our training, our SOPs.

[Silvana] How do we deal with those new areas?

[Jon] Exactly. It's again, it's about relationships. It's about working with the Navy, the Australian Submarine Agency, with Defence, and having those links across government. It's really important that we're not inwardly focused and that we're out, and part of my job is to get out and network with those people so that they know who the point person is to come to DFES to talk to. And then I can direct them in the right direction within Operations or Strategy and Emergency Management or whoever it might be, that can help them.

I'm also looking at our CAPAs in the future. So, for the career Fire Service, you know, we're evolving to have a CAPA truck, which will mean, you know, we have a lot more aerial platforms to deal with working at heights issues. We're also looking at how we're going to do technical rescue in the future. And I'm building business cases that can go to government to seek the funding, because....

[Silvana] What's technical rescue?

[Jon] Technical rescue is a range of different rescue techniques, from heavy rescue, truck rescue, train rescue, bus rescue, right through to vertical rescue, swiftwater rescue...

[Silvana] So these are things DFES does already, but is it just improving?

[Jon] No. Some we some we do. We don't do swiftwater yet. We've got a very small emerging capability in swiftwater. We've trained I think four or five people. But we need to roll that out across the network of where that risk exists. But we also need a coordination in terms of the training and how we're going to do that in the future. We've done it piecemeal. But we also now need to expand our capability. And that's what I'm looking at. You know, we've covered it. But we could do it better. There's opportunity for improvement.

[Male Narrator] Ever wondered what firefighting looked like almost 100 years ago? The trucks, the buildings, the uniforms. They were all very different from what they are today. Join Fireman Jack for a new tour visiting the old buildings that make up WA's firefighting history. Visit the DFES website: [DFES.wa.gov.au](https://www.dfes.wa.gov.au) to find out more now.

[Silvana] You're listening to Mics and Sirens. I'm here with Jon Broomhall talking about the future of emergency services. Let's talk drones, robotics, AI. Are they the way forward for emergency services?

[Jon] Absolutely they are, and it's something I'm also looking at. I think, you know, one of the things and, you know, the enablers are the access to data, again, and what I was talking about before, in terms of you rely on that structure that is provided either by government or commercially, in the background to enable all those things. For example, one of the things I'd love to see would be, you know, a persistent drone over Perth that we could share with other emergency services so that when we do get a large fire, we can have a camera that can be eyes straight on a bushfire or a large structure fire. So, if you could imagine in the future we have a drone that's on a permanent loop over the population of Perth. And when a 000 call comes, the ComCen's got the ability to turn that camera on and focus it on a bushfire, a structure fire, a bad traffic accident, and have intel.

[Silvana] Would that impact aerial firefighting?

[Jon] No. You could just have it a lot higher. You can stack, you know, planes at different altitudes and you could have that up very high. They have the ability and with gyroscopic cameras to work at very high altitudes and be out of the way of, you know, the controlled airspace. But you know, the one thing that you know, as I was coming through the system that bothers you the most is a responder is not knowing what you're going to get when you get there and not being - having to plan.

If we have the ability to beam vision of an incident to a responding crew on a tablet or on another means, that's one way of providing our responders with the information and the intelligence and that they need so that when they get there, they can do the best they possibly can. You know, a lot of these situations, they're awful. And but, you know, if you've got the opportunity to have a little think, you know, on your journey of, you know, 5 or 10 minutes, it puts you in better shape. And it removes a lot of the anxiety of working as an emergency responder. So, you know, things like that, that is the future.

I think with AI, it's still an emerging technology. And I think it'd be in the emergency services, it's more of a decision aid. You wouldn't want AI making decisions for you.

[Silvana] But you'd need that human intervention to...

[Jon] Completely.

[Silvana] Quality control.

[Jon] That's right. You know, if AI could be presenting you a range of options, that would be helpful to the responder. But I wouldn't like to see AI making decisions at this point. You know, and it's a bit scary. It's a little bit Skynet.

[Silvana] What about robotics? I know it's been used for electric vehicle fires. Or tested, at least. Do you think that's a way forward?

[Jon] I do. I think there's a role for robotics in areas where we don't want to put humans. So we have recycling plants that burn regularly around the country because of lithium-ion batteries that people put in the rubbish. It'd be better to put a, you know, a robot into a, one of those fires than a human. We've got a lot of tunnels being built around Perth. If we have a fire in a tunnel or an incident in a tunnel, it would be better to put a robot down a tunnel than humans.

So there is a role in firefighter safety for robotics. And that's where I see us using it in the first instance. But yeah, they're very expensive and they're not at the expense of people. You still need, you know, multiple people to run a robot. So it's not about replacing people, but it's about the safety of our staff and volunteers.

[Silvana] Is WA, in general with this sort of stuff, I guess, is WA behind the rest of the world or Australia in terms of our innovation with emergency services?

[Jon] Look, I think the fact that the Department's created this role, indicates that we need to, you know, there's opportunities for improvement. A lot of innovation costs money, and we run a very, very, very lean Department. So we need that investment from, whether we partner with industry or we get money from the government to do this. But yeah, I think there's an opportunity for improvement in what we're doing.

[Silvana] Where do you, say in your role, have you done much travel? Have you gone to overseas to speak with other people about, you know, future things that we may be able to steal ideas from?

[Jon] No, I haven't, but I have - you know, I can use the internet. [Laughs] I know how to use a computer. I think a lot of innovation is on - is available without having to travel. I do Teams with people in America. I've been doing some work on the LA fires and I've been Teams meeting with people in America, to understand what happened there. Yeah, you know, we're lucky we're going to host the AFAC Conference this year so we don't have to travel. It's coming to us this year. So that the trade show, and a lot of the innovative, things that are happening are going to come to us this year. So, there is a role for some travel, but I think, it needs to be targeted, and it needs to be justified. It's not about me tripping around the world. It's about, you know, working out what we really need for WA, and then going out and researching.

[Silvana] Do we have partners overseas? Sometimes we do a bit of work with Singapore.

[Jon] Yeah we do. Yeah that's right. Singapore Civil Defence Force. We operate very well with - we have a partnering agreement with them, and they lead Southeast Asia in terms of innovation. They're lucky. They're very cashed up. And you know small country but with a huge economic base. And we've learnt a lot from them over the years.

[Silvana] What do we learn from them?

[Jon] Yeah, we train our USAR people with them. And...

[Silvana] So that's Urban Search and Rescue?

[Jon] Yep, that's right. And they are a certified team INSARAG certified team in Singapore. And so they do a lot of work internationally with the way USAR operates. And we've learnt from that. And it'll be good as part of their technical rescue uplift to have our team work more closely with Singapore.

[Silvana] Where are we leaders in the space of emergency services and future capability?

[Jon] I think, you know, the Emergency WA app that was recently launched. That's a really good example of where we're leading. The way we communicate with the community is

really good, and it's something that we've learned and something that we've had to learn after a lot of our bad incidents. And I think if I could hold that one up as something that's really good. Anni and her team have done an amazing job on launching that app, and they're continuing to improve it. So, the bushfire space is probably our strength.

[Silvana] Where - what obstacles do we face with introducing new technology?

[Jon] I think humans don't like change. And emergency responders and firefighters tend to be the same. We need to be open to it. We need to understand that, you know, change is coming, and we need to adapt, and we need to be a little bit more open-minded that it's not going to be perfect the first time. We trial these things, we try them out. We have an idea, we invest. And then we improve it, and we continually improve it. And that's something that we have done with a lot of our appliances, our PPE. We continually improve it. But it takes time, and it takes money, and it takes a lot of effort by people in the background. But I think it's about being open-minded and knowing that we can improve these things. And if we all work together, it'll be a better outcome for everyone.

[Silvana] Are you afraid of change or is that something that drives you?

[Jon] No, I love it.

[Silvana] I guess that's why you're in this job.

[Jon] Yeah. Look, I've always tried to improve whatever area I work in, in DFES, and I always try and leave it better than I find it. I like change. I find it personally stimulating, and I like to make things better, and that's what drives me personally.

[Silvana] Can you talk to me about the LA fires? So you are looking into the review from those fires?

[Jon] Yeah. So it's early days. They haven't even completed an after-action review themselves. But...

[Silvana] Because the fire was only in January.

[Jon] That's right. And it's taken them a while to recover. They're still dealing with a lot of homelessness and people displaced, and they're in that recovery phase. And then there's the political, you know, who's going to be blamed. So, that's going on. I'm talking with people in Cal Fire. I'm talking with people in Los Angeles. And we'll see what happens. But, you know, there are comparisons with Perth. It's a mediterranean climate in both LA and Perth. We do have katabatic winds off the Darling Range like they have the Santa Ana winds. And we do have high fuel loads. The difference is, a lot of the building stock in California is built out of wood. It's wood-framed homes because of the earthquake risk. And they also have combustible roofs. So a lot of their roofs are, you know, tar tiles, which, when there's an ember attack, it will get a roof going very quickly as opposed to what we have here in terms of, tin and tile roofs.

[Silvana] So would it be unlikely for us to see anything like that?

[Jon] It's, yes. It would be, we also don't have, or we do have some areas of Perth that, you know, are suffering from legacy planning, legacy urban planning, but we're improving that.

We're learning from it. It would be unlikely. And I think what caught LA out from my observations is it was their off season. And I know they didn't have as many firefighters on duty as what they would normally have in their high-risk periods. So, that's something we are aware of. We crew up appliances here in Perth when the risk dictates. And so I think we have a better eye on things, but never say never, right? You've always got to be vigilant. You've always got to be addressing the risk and looking at things. So it's not a never, but you know it's a maybe.

[Silvana] You were - a firefighter. You mentioned earlier. What was something at the time that you wanted to see change, I guess?

[Jon] Yeah, I think I talked to it earlier about the intelligence that you get. You know, you don't get much from a 30 second 000 call, and then that's Chinese-whispered down to the trucks. I think that's an area where we can improve in. We currently have an IRIS system on career trucks. I'd like to see a system similar to that improved, and across all our emergency responders.

I think it's incumbent upon us to make sure people who are responding to emergencies have all the information that we can possibly give them, from the condition of, you know, a structure they're going to, to, you know, road conditions on the way. So if we can meld all those things into one system that protects their safety and also relieves a lot of the stress that's involved in responding to emergencies. So I think that's an area which we've got the capability of improving, and it's something I'm actually already looking at.

[Silvana] Thank you Jon, thanks for joining me. Thank you for all your insights and look forward to hearing what's next.

[Jon] Terrific. Thank you.

[Male Narrator] Are you looking for fast, accurate and official information that helps you to make informed decisions to stay safe during an emergency? The Department of Fire and Emergency Services Emergency WA app lets you set up watch zones for places important to you. So, if an emergency happens in your watch zone, you'll receive alerts and warnings. The best part? It's sent direct to your mobile device. Download DFES' Emergency WA app from the App Store or Google Play today.

[Silvana] This is Mics and Sirens. I'm Silvana Pulitano. In the next episode, I sit down with the Fire and Emergency Services Commissioner. For more information on this episode, visit the show notes.