

- Sean McGowan: Hello everyone, and welcome back to Thompson Coburn LLP's Three Lawyers and a Drone podcast coming to you from Washington, D.C. My name is Sean McGowan and I'm a partner in the Firm's Federal regulatory practice group and co-chair of the Firm's UAS practice group. As always, joining me today are associates Tyler Black and Mike Deutsch. Today, we have invited professional commercial photographer Justin Barr of Justin Barr Photography and STL From Above out of St. Louis, Missouri to discuss his company's recent Part 107 Certificate of Waiver approval and how he goes about using drones in his commercial photography business. Justin has flown drones recreationally since last 2015 and obtained his remote pilot certificate with a small UAS rating in May 2017. Justin, welcome to the podcast and thank you for taking the time to be here today.
- Justin Barr: Thank you for having me here.
- Mike Deutsch: Hi, Justin. It's Mike Deutsch. Again, thank you and welcome to the program. Can you tell our listeners a little bit about your background and your commercial photography business?
- Justin Barr: Sure. I started doing, well, I call it now ground-based photography, but, you know, regular family photos, shot a bunch of weddings. I shoot for a studio out of St. Charles, Missouri, which isn't too far from St. Louis. And you know, I found ourselves shooting in the same places over and over and you know a lot of our pictures were looking the same and I thought it'd be kind of cool to get a, kind of a drone perspective, you know, of the wedding and wedding party and everything, to show more of an overall kind of environment for wedding pictures and you know, you see the pictures of like a sprawling landscape or mountains in the background low-like. In St. Louis we don't have any mountains so I thought getting kind of an aerial shot of maybe downtown or wherever we might be doing the photos, just to give kind of a different aspect to wedding pictures and kind of set ourselves apart from the other wedding photographers here in town.
- Mike Deutsch: Interesting. So at what point did you decide that you needed a remote pilot certificate, because you're flying for business purposes?
- Justin Barr: Right. Yeah. I started off actually with racing drones. My wife got me a little drone for Christmas and I started getting into the FPV [first person view] style racing drones, and after that is when I started looking into getting into the photography and videography drones. And once I started looking into all that I found information about needing a license to use a drone for commercial purposes. I bought a Mavic Pro in February of 2017, practiced with it for a couple of months just taking pictures and flying it around. I got

my 107 in May and then that summer is when I started using it for wedding photography.

Mike Deutsch: Right. So you got the 107 - it sounds like that's all you would need as a photographer. What made you decide that you needed an additional waiver from the FAA [Federal Aviation Administration]?

Justin Barr: Yeah, the additional waiver I got was for night. I started getting contacted to shoot events that were happening in downtown St. Louis, so there's a lot of stuff that goes on in the evenings, and I found myself, you know, they'd ask me to shoot from just before sunset and since I'm limited to 30 minutes past civil twilight, I decided to go ahead and get a night waiver. They do lights downtown with a tree lighting ceremony and all that, and that always happened right at, I mean it was almost right up to the cut-off of being able to fly, and I was able to get some cool pictures but it still, even at civil twilight the horizon still is glowing a little bit. So you can tell it's not really dark. I wanted to get the waiver so that I could get the nighttime shots where you don't have the horizon, the lights all glow a little bit more, it was mainly because of different events and things that I've been asked to shoot in the St. Louis area.

Tyler Black: Hi, Justin. This is Tyler. My wife's actually from St. Charles, so small world.

Justin Barr: Oh, cool.

Tyler Black: Yeah, yeah. I'm wondering, from a process perspective, once you made the decision to get a waiver from Operating Rule 107.29 for the daylight/nighttime operations, what was your experience with how the FAA's system works functionally.

Justin Barr: It was slow. It took a lot of revisions on the waiver. They have a guideline that is published on the UAS [unmanned aircraft system] site for the FAA, and it gives points to follow and what to address as you're filling out your form. I found that if you're typing up different mitigations you might come across - if you just happen to mention something about flying in an area that you might not be familiar with, you kind of have to backtrack and say, you know, if I'm not familiar with this area but I will scout it during the daytime, make notes of obstacles in the area. You really have to go into detail of every aspect of where you might be flying or what might be going on, and then detail how you would help alleviate any risks. For example, if you're unfamiliar with an area you'll put up, you say oh well, I will make notes of any wires or light poles or anything that might be a hazard. But then they'll say how can you check to make sure there aren't people on the ground in that area? You also have to make that kind of note. I will also make notes of where people may enter and exit a certain area. Because a downtown space will have walkways that come in and out, and you want to avoid those so you don't fly over the people. So there's a lot of detail and then finer detail you have to get into when submitting these waivers to really cross all the T's and dot all the I's.

Tyler Black: Absolutely. Did you consider getting a waiver from any other FAA operating rules?

Justin Barr: I haven't really had a need yet. The night one was kind of a big thing. I've looked into the flying over people waiver and I think the only one that's been granted has been to CNN. That one's almost impossible to get. I really don't need a visual line of sight waiver because anywhere I fly is typically surrounded by buildings anyway, if I'm flying downtown. We have Kiener Plaza which is about two or three blocks of an area in the center of downtown St. Louis. It's kind of like a big outdoor event space. If I'm doing an event down there, I can see the entire space from one spot down there. So it's not really been an issue to go beyond visual line of sight. And then, the only one that I kind of, it wasn't really a waiver per se, but I did shoot for the Gateway Arch. In filing the airspace request, I did put in an 800-foot request, just because typically when they grant you the waiver request for zero grid, which most of downtown is a zero AGL grid. You put in the altitude that you need. My client was wanting a top-down shot of the Arch. That means I have to obviously fly up above the Arch. But when they would grant the waivers, they would put an absolute altitude of 400 feet.

Tyler Black: Right.

Justin Barr: And obviously that's not going to get about 630 feet up, you know, the Arch is tall so I put in a request for 800 foot, and they approved it. We had to discuss – I had to call ATC [Air Traffic Control] when I would be flying up that high and basically I gave them an hour, from nine to ten o'clock, that I would be up that high so they were just aware. But that was kind of the airspace waiver and kind of the only time I had requested to go above the 400 foot, which, in staying true to the 107 rules, technically I could go 400 feet above the Arch, but since it is a real high-traffic area down there I kind of limited it to 800 feet because there's airplanes and helicopters that tend to up and down the river there for sightseeing purposes. And I was fortunate to get granted up to 800 feet.

Tyler Black: Right. I'm imagining you'll be following the rulemaking developments regarding operations over people. That one will be relevant to a lot of folks out there. If I could go back for a second to the types of risk mitigation commitments you are having to make to the FAA, in addition to kind of the daylight scout that you talked about, what are some other kinds of nighttime precautions that people should expect to make or at least that you made regarding your operations?

Justin Barr: Yeah, so, one of the things is having an LED strobe on the drone that's visible up to three nautical miles. I have a couple from Firehouse LED that it's just a small, maybe the size of a postage stamp, LED. It's basically a battery with lights on it. I just Velcro it to the top of the drone. Three-mile visibility on there. The other thing is having a visual observer to kind of help with spotting the drone, not that I was flying outside of my visual range, but just to help with a second set of eyes because you have to be a little hyperfocused when you're flying at night because it's just, you have to pay more attention trees and tree branches that might have one straggly little

branch sticking out, you know, you have to watch out for. But helping with that, and also to kind of help with spotting the drone in the sky.

It's kind of weird – if you're looking at the stars on a dark night and you look at the star and it seems to disappear while you're looking at it, but if you look away from it, it comes back. It has something to do with the rods and cones in your eyes so you have to sort of divert your vision periodically so you can keep your focus on what you're going to look at. So, that's one of the things that we had to kind of do when flying the drone a little bit further away. If you stare at it your eyes tend to get a little bit tired and you sort of lose clarity on it, so just know that you have to look at it for a minute then kind of divert your eyes and then look back and you can refocus. Just having a second person there to help with that is a good back-up to have. And then also just help with the ground. Where we flew from was a well-lit area but they want you to make sure you can, make sure you have a good well-lit area so you can see if there's anybody coming into or out of the area where you may be landing from. But yeah, those are kind of the big ones on the waiver that you want you to comply with.

Tyler Black: That's interesting. You describe the visual illusions caused by darkness and other night-related phenomenon. It's interesting to hear you talk about it. My perspective coming at it from a private pilot is always coloring the way that I look at those requirements, so I recall from my training looking, kind of making a sweep in a box so that you are continuing to change your visual focal point and you'll notice things, either stationary things like stars, or things that are moving a little bit quicker. I'm wondering if there are any other aspects from an unmanned aircraft perspective, I guess, you know viewing from the ground up that might be a part of your waiver application or interesting to note.

Justin Barr: Yeah, I mean, I use the Phantom 4 Pro to fly at night and there is an option to turn the front heading lights on and off. They're just bright red lights that stay on all the time. The rear lights are green that flash. The red ones stay on all the time but I turn them off for shooting because it sometimes can kind of throw a little glare across the camera. But coming in or taking off, any time I'm moving it around I have the red lights on so I can orient it, having all four lights going, plus the strobe on top really makes a huge difference in getting the bearing of the drone. Just relying on the flashing green ones on the back is kind of weird because they don't really stay lit long enough to give you a good sense if you're doing like a rotation around the axis. They'll flash and then, as you're turning the drone, and the next time they flash it could be a 90-degree turn and you're not sure which way you're facing. So having the extra red lights on there too makes a huge difference.

Tyler Black: That makes sense. Do you have to do any sort of documented training with your visual observer to show that they know these requirements that are in the waiver application? How do you handle that aspect?

Justin Barr: Well, the waiver application says that any visual observer that will be involved needs to do the training. I didn't come across anything that said you have to have official documentation submitted to the FAA or anything on,

since I completed the training. But when we did the big project with the Arch, I had to submit a, gosh, eight or nine-page flight safety procedure pamphlet. One of the things in there was you know, the visual observers that were helping with the night flights would do the online trainings and be able to assist properly after having the training. We didn't do a whole lot of night flying, but the person that helped me, she did do the training online and was there to assist with being a visual observer for the night flying. There's several documents through the FAA that are available for what to look for and it tells you about the fatigue that you can get when you're looking at things, how you kind of have to sweep the sky or divert your attention sort of, not attention but you know look away from the drone periodically to keep your eyes from getting too tired. And it was mainly things like that that they need to be aware of and more or less trained on to be able to properly assist for a night flight.

Sean: Hey, Justin. It's Sean again. I have a couple of questions because I'm curious about the documentation. We noticed a bunch of other provisos in the certificate of waiver. You just went over the nighttime flying and everything that you're doing and thinking about flying, which obviously seems a lot more difficult night-flying than daytime-flying. One of the provisos was the site must be fully illuminated or the site assessment must be done in daylight before the flight. Can you tell people just a little bit about like what's in your flight bag when you go out to a project. What kind of documents do you have on you just in case somebody kind of, law enforcement or somebody, comes up and challenges your right to be there. What do you suggest having on you when you go out and do a commercial job like you're talking about?

Justin Barr: Sure. I always have my official FAA 107 card on me. I also have my renewal document when you go back for the refresher after two years. They give you a sheet that's notarized and everything and it says, "Please keep this on you at all times," so I have that on me. And then I also have my night waiver document. I keep that because I just keep that in my case all the time. But then like for the job with the Arch, I had the safety plan and different documents from the Arch saying that we were cleared to do all this. And of course, in dealing with a big project like that, they notified the park rangers and other security down there and even sent a note to the St. Louis Police Department that there's going to be a drone in the area because there's hotels down there and whatnot, just in case there were any calls. You know how people can get when there's a drone in the area.

Sean: Sure.

Justin Barr: I had all my documents on me and then we also made sure that the local authorities knew what we were going to be doing that night as well.

Sean: Right. And would that include something like the "Before You Fly" kind of printout, or something like that?

Justin Barr: Well, yeah, I mean anything that has to do with the flight, even if it's not for a big project like that. If I request any type of airspace waiver through the

website, I always get a pdf back from the FAA that says "Approved." I'll print those out and keep those on me. If I do one of the LAANC [Low Altitude Authorization and Notification Capability] requests through the AirMap app, if it comes back with text messages that gives you a flight code – I guess that is what the reference code that the FAA would use. And I mean that comes back to my phone, so I keep that on me when I'm flying as well just in case anything comes up. Fortunately, the police department in St. Louis has been really great and very receptive for drone use in the downtown area. I know in places like New York I've heard of people being stopped and almost detained for flying drones down there, which I get, because it's a huge safety risk. But in St. Louis they've been really good. I've flown for a lot of events and parades and whatnot and if I take off away from the crowds, if there's a police officer nearby I always let him know that I'm flying for this event and they're usually okay with it. I haven't had any problems where they've told me not to. But, yeah, I mean keeping the proper documents on you at all times just in case anyone were to ask is always a good idea.

Sean: Good best practice, definitely. I was going to ask you if anybody approached you and like challenged your authority but it sounds like you've done a good job of communicating your intentions ahead of time so that really hasn't been an issue for you so far, so that's good to know. Just wondering back to what Tyler was talking about, that waiver application process: Is there anything, like any pitfalls that occurred, maybe somebody listening might benefit from hearing you like something that happened to you that you wish you knew ahead of time, or anything like that?

Justin Barr: Yeah, the hardest part was just kind of finding out what, or I guess figuring out what the FAA wanted to see in the waiver request. Like I said, I had it denied several times because it always said you know, lack of mitigation detail, and like what I said before where like if you mentioned something about an unknown area, they're going to come back and say well how are you going to know if people are coming into the area. You know it's stuff that kind of a common-sense. I would do that, but you really just have to put it on the paper. You can't just assume. And they're not going to assume that anybody knows to do that. They want to see it actually written down on the paper. So it's like if you're going to put something down you also got to just make sure you have every avenue of failure addressed or risk addressed and how you would kind of get around that. But, yeah, that's kind of the main thing is just making sure that you follow their guidelines for submitting the waiver and really address all of the safety issues.

Sean: Okay. And how long was the entire waiver process from start to finish?

Justin Barr: Each time I submitted it, I would say it was probably, I think it was about maybe two to three weeks before I heard back on it. We had started the process, I got the nighttime waiver to work with this Arch project and it was the main driving factor in when I submitted it. We started on that in January of this year, January of 2019, and it was kind of round and round with the FAA on sending the waiver in and getting it denied. And each time I would call them and find out what part of this needs to be addressed, because I would always get back kind of a generic letter that said not enough risk

mitigation. It never really went into detail that would say, oh well you didn't say this or you need to address this. They kind of let you figure it out. But then at the same time it's one of those deals where if you don't know what question to ask, if that makes any sense. So it's like, on one hand, I followed the guidelines. I answered all the questions, I thought, but then they had a couple other things that they wanted to address that I wasn't quite aware of, so. It's kind of a back and forth process, but you just have to make sure that everything that you might encounter would be covered.

Sean: All right. And from your waiver it looks like it was approved on April 12th, so three months in the Federal government world. That seems fairly reasonable, but maybe not as fast as we'd like it.

Justin Barr: It was just a few back and forths. It was approved in April but our original date for filming was I think the middle of May. So when we started in January and I had to send over several revisions, once it got to April I was kind of starting to sweat a little bit because we were getting so close to the timeline. But fortunately, well not fortunately, but everything was delayed several months because of all the river flooding that happened over the summer. So that was approved but then we were able to have a little bit of extra time to get everything put through because one request was pending, some of the flight air space requests and whatnot we're requesting for night flying but I didn't have my waiver yet, so. It was, we had to get the waiver first before we could put in a request for air space flight at night, so. Everything else was kind of hinged on getting that night waiver. It went through relatively quickly but given our timeline we were kind of getting down to the wire on it.

Sean: Ha-ha. Understood. Mike?

Mike Deutsch: Yeah, Justin. It's Mike again. A few things real quick: How do you insure your drone and drone operation to protect you from accidents or a flyaway situation? You know we hear that more and more insurers are getting into this area and we're curious to know about how you protect yourself and your business.

Justin Barr: Before I started with drones I had an insurance policy for commercial photography, and it was just the standard liability insurance. I think I had a one million dollar policy on that because it was all just standard photography, you know, if a light fell over or a flash fell over on somebody it covered any medical expenses that might come up. With the drones obviously flying overhead you have more chance of more damage happening whether it comes down on a car or falls on somebody, but I do have a two million dollar policy for liability for any mishaps that may happen while flying.

As far as preventing flyaways, just standard you know normal procedures in place for that. Obviously make sure the GPSs is working properly. You get your home point set up before you take off. Should a flyaway happen, normal steps are call local police department and let them know what direction it's heading. If you're in the air space, call the ATT tower and let

them know what's going on, and do your best to contact all the local authorities and let them know that something has taken off from you and you can't recover control of it. But if anything should happen, end up crashing into a car or a building, that's where the insurance policy will have me covered and cover any damages it might incur from that.

Mike Deutsch: Just to clarify, your policy, is it a flight-by-flight basis or is it more of a blanket coverage for flights during a specific period, or does it cover all flights?

Justin Barr: It covers all flights. Mine is through Allstate Insurance, I've got all the info at home in my drone case, but it is like a blanket policy that it covers all flights in all 50 states. Before I had this insurance policy, the one I had previously was just for Missouri, and I got contacted to do a multi-site job up in Chicago and since my insurance didn't cover Illinois I had to use Verifly up there on a point-by-point or flight-by-flight basis so that each time I flew it was anywhere from like 15 to 40 dollars per flight just for insurance coverage.

Mike Deutsch: Oh, wow. Okay. Interesting. Now have you flown projects for people and are you capable and authorized to fly for people?

Justin Barr: Like, you mean like businesses or companies, or what do you mean by people?

Mike Deutsch: Yeah. That's exactly what I meant. Yes.

Justin Barr: Oh, yeah, yeah. Yeah, so for the Arch project I was hired by a creative company that was doing the advertisements for the Arch. Just like any other photographer that they would hire to take pictures and video for events or whatnot. So yeah, it's kind of just, I mean it's a flying camera, so just to get some aerial photography shots they'll bring me in to do those for them.

Mike Deutsch: Interesting. Well it sounds great. Now Justin, if people who look at you or your work wanted to engage you for a project, how can they get in touch with you?

Justin Barr: My website is stlfromabove.com and [stl_from_above](https://www.instagram.com/stl_from_above) on Instagram and Facebook. Usually the easiest way, message me on there or there's a contact me page on my website if they wanted to send anything over. I get a lot of messages from people even that are looking into buying a drone for their kids or they want to get a drone to fly just for themselves then I'm always more than happy to answer questions just to make sure everybody's starting off on the right foot and following the rules and everything.

Sean: And Justin, it's Sean again. I've been on your website and I've seen those photos and they are amazing so I encourage everyone to check them out if they get the chance. Any other questions or comments – Mike? Tyler? Justin? -- before we sign off here?

Tyler Black: No. Thanks for joining us, Justin.

Mike Deutsch: Yeah. Thank you, Justin.

Justin Barr: Thank you. Thank you for having me.

Sean: Yeah and just, you know, we have to put the legal stuff in there, Justin, before we getaway. Thanks again for attending and providing listeners with your comments. It was great. As always, if any of you have questions please feel free to contact us through our thompsoncoburn.com website or by direct messaging, the Three Lawyers and a Drone Twitter page which is [@tcdronelaw](https://twitter.com/tcdronelaw). Thanks again everyone. Appreciate it.