On Demand Webinar
Part 107: What You Need to Know

Jessica Moody: Welcome everyone I'm Jessica Moody, Marketing Manager, here at Skyward. I'm your moderator on this webinar on Part 107 for your drone business. This is our biggest webinar audience yet and we see a lot of familiar names in the chat area thanks to our webinar regulars and those of you who are joining us for the first time.

Today our panelists will break down Part 107 for us and help us chart the best path for building us our drone programs. Many of you have sent us your questions ahead of the webinar and we'll be doing our best to answer as many as we can. Our team will also be answering live via chat. I know there is a lot of activity already of participants, panelists and Skyward team. Submit questions you'd like answered into the Q and A box and to pose your question to the whole audience, add it to the chat window. Now I'd like to tell you a little bit about Skyward and introduce you to the panel. Joining me from skyward is out Chief Technology Officer; X. X leads strategy and direction for Skyward Technology and consults with innovated companies on R and D to ingrate drones into their business, Welcome X.

X: Good Morning, happy to be here.

Jessica Moody: Here to answer your questions live throughout the webinar Tariq Rashid, an analyst on our professional surfaces team and former Navy Pilot. We also have Eric Ringer, Strategic Projects Engineer and Skyward Co-Founder, and in the chat is Rebecca Wilson our Senior Content Strategist.

At Skyward, we are committed to helping our customers run safe, efficient, and thriving operations. We do this in a number of ways. First and foremost, our operations management platform gives businesses a single place to manage aircraft, batteries and personnel, plan and log operations, and use our expertly validated airspace map to plan flights and collaborate with the flight crew. We also provide operational and regulatory consulting to help business to launch their operations and we undertake a limited amount of R and D work for major enterprises with truly innervated visions for drones.

We are really honored to be joined by Jim Williams, he is a part of Denton's UAS Division and was formerly ahead of the UAS Integration Office for the FAA. Jim helped to shape Part 107 and was really instrumental in pushing UAS regulation forward during his time at the FAA. We are so lucky to have Jim as an advisory board member here at Skyward and are looking forward to his insights on new rules. Welcome Jim.

Jim: Good Afternoon or good morning everyone as appropriate. I am very happy to be here and very proud to a member of the Skyward advisory board. I am available to consult with anyone in the industry, so if you have questions you should get my email address as part of this webinar. Please get in touch and hopefully I can help you. I am also very proud to be part of this rule. It's a great rule, I think, that really serves the industry well. I'm happy to say that it only tremendously improved after I left the FAA and my successors took over. It is a good thing for the industry and am very happy to talk to you about it today.

Jessica Moody: Great thanks Jim. Today, we are covering an overview of Part 107, Updated Airspace Access, and Part 107, Certificate Testing. Our recording of the webinar and a copy of the presentation slide will be sent to all registrants and all attendees.

Before we dive in, let's review some of the acronyms and industry jargon and I would like to draw your attention to a few of these. First off, ATC. We will be talking about ATC - Air Traffic Control a

lot in regards to air space coordination and access today. One that might be new to some of you today is "Daisy Chain"**.** This is where a pilot flies a drone a certain distance within his line of sight and then transfers control of the drone to another pilot or a line of observers that are placed along a route to maximize observer line of sight with the drone. And we will be going over what that means and how that is affected in the Part 107 rule.

So what does Part 107 mean for Drone businesses? One of the biggest impacts you will see is a much lower barrier to entry and lighter day to day administrative burden. Drone businesses no longer have to enter monthly COA reports with the FAA and in most cases they will no longer be required to file a NOTAM with the FAA before they fly. We will have more flexibility when it comes to hiring highly qualified pilots and they'll be able to connect more operations in more places.

For the industry as a whole, Part 107 is a huge step forward and I think we're about to see a rush of adoption and innovation in the drone space. Let's look at some highlights. One that I've really noticed was operations within civil twilight. This is an expansion of the blanket day light operations we saw in the posed rules. Jim, why do you think the FAA created a more permissive rule around civil twilight versus just day light operations?

Jim Williams: One of the more important things that happened why'll I was at the FAA was starting up the Section 333 Exemption process that essentially provided a bridge to get everyone to this rule to get some experience. One of the things the FAA learned eventually and allowed operations is at night. They recently in the last couple of months approved an operator to operate at night based on lighting the aircraft. So they expanded the operation based on that evaluation. They did and if you note in the rule it notes that the vehicle has to visible at 3 mile distance in order to provide a safety margin for the manned aircraft. So it was that experience that helped expand the operations here and actually at a whole bunch of other places in the world too where the experience of the Section 333 operations informed and improved this rule.

Jessica Moody: Interesting. We also saw limited Daisy Chain observers but not to pilots. Jim, where are some used cases that we would need the Daisy Chain pilots?

Jim Williams: I think the obvious one is the large procession agriculture operations with the fixed-wing aircraft. Currently, if visibility is limited to a couple miles depending on the size of the aircraft, it might even be shorter than that. That would mean you would have to move and setup over and over again to cover these large farms that are measured in square miles. So, by allowing Daisy Chain pilots, you can theoretically have you, essentially, as long as your battery lasts on operations of the aircraft by having a pilot observe the aircraft until it gets to the edge of their visibility, but there is another pilot who can assume control of it once it reaches that edge and then continue to move it forward down the field. That pilot could move or you could have a third pilot and basically keeps going as long as the aircraft can fly. Again, this was one of the things that was learned between the opening for the rule for comment and final rule. It was probably, but I am not sure of this, but it was probably of the path line work that the FAA was doing with Procession Hawk, who is in the business of doing procession agriculture using drones.

Jessica Moody: Great, thanks Jim. So let's look at Pending Section 333 applications. If you've already summited your application for 333 Exemption you're probably wondering rules will still be granted. The answer really depends on really what Tier application falls into. Tier 1 includes all pending exemptions for operations that could be conducted entirely under Part 107. Think a standard aerial photography shoot that with no special permissions or waivers required beyond visual line of sight flights. If you fall under this category, which really a majority of businesses that we have talked to so far do, then your petition will be closed. Your next step is to review Part 107 and be sure that your operators are ready for their certificate test or have taken required training. You can be operations in compliance with the new rules on August 29th when they take effect.

Tier 2 includes requests that require waivers. An example of a waiver able request is a nighttime operation. For this group, the FAA will close your docket and will consider your petition for exemptions waiver to Part 107.

Tier 3 petitions or requests to operate outside of waiverable areas of Part 107. For example, operating a drone that weighs 60 pounds or more than 55 pounds. For this group, the FAA will continue to review your request as a 333 Exemption.

So Jim, I know that those who already have a Section 333 can choose to continue to operate under their existing grant. Tell us about how that works. Can they choose between their Section 333 grant and the Part 107 rules?

Jim Williams: You can operate under your 333 until at such time that it expires. All of those exemptions were granted for 2 years. You can continue to follow them and you'll be fine, but most of them have restrictions that are much more onerous than what you would be able to do under Part 107, so it behooves people to get that Pilot Certificate and move out of operating out from under 333 limitations and into operating under Part 107. You do have to your Pilot Certificate either a manned aviation Pilot Certificate with an additional allowance to do small drone operations or new drone operator type pilot type certificate to operate under Part 107. That's really it. That's the ticket to enter into Part 107. I would imagine that most folks are going to pretty quickly transition from operating under 333 into operating under Part 107.

Jessica Moody: If a company falls under Tier 2 and requires a waiver, how can they best increase their chances of getting their waiver granted by the FAA?

Jim Williams: Well, the best would have been, take your example a night operation, if you follow the example of that has already been granted using the same aircraft that was granted to, then it would probably be fairly routine. Everything else is up in the air. They haven't really approved many large deviations from the perimeters of Part 107 previously. The best way of being sure of doing that is to put together a safety risk assessment of what you are trying to do and how you are going to provide an equivalent level of safety to what's provided under Part 107 and that is something we help people with here at Denton's.

Jessica Moody: Great, thanks Jim. Let's move onto Airspace. One of the most important questions any drone pilot must answer before beginning an operation is it safe to fly here and am I allowed to fly here? Prior to Part 107, the FAA took a conservative approach to the airspace and the airspace user which prevented all but 2% of small and medium businesses from using and innovating with drones. This is because of the limited set of the US population that holds a private pilot's license. Here we see the current airspace for Section 333 grantees.

Now with Part 107, much more of the airspace is accessible without going through the process of obtaining a civil COA. Airspace regulations are streamlined to the extent that any enterprise from a sole proprietor to a major corporation can use drones as a tool for doing business. It's really amazing to see how much the sky will be open to commercial operators Part 107 takes effect on August 29th. I know a lot of us will just be waiting that day. Overall in terms in airspace coordination Part 107 poses more realistic requirements on business owners while it'll still be prioritizing safety requirements. If you want to see how the airspace will change in your area, log in or create an account at @skyward.il. Turn off the airspace layer on the map and you'll see how Part 107 will open in your region. If you're going fly in a controlled airspace you'll need permission in a COA. Prior authorization from ACT is required, and on August 29th the FAA will open up a web based portal for authorization to controlled airspace access. It's still estimated to take 60 to 90 days for your initial permission to fly in controlled airspace. Here we see a flight that a company in Skyward for flight on crop field survey on a field near Eugene. The hazards and points of interest have been noted but we

can see from the yellow that it's located in total controlled airspace. Jim, what would this operator need to do in order to get permission on this airspace located under Part 107?

Jim Williams: Well, you really covered it well there's an online system that's being created that should go live the 29th but you can submit your request to operate in these areas. If you're not close to the approach and arrival areas for an airport and you agreed to fly at a really low altitude typically it'll be a routine. You might be required to be in contact with the air traffic control tower while you conduct your operations to deal with any flyway events etc. But this is fairly routine, today for existing Section 333 holders and I imagine it'll be a continued routine. These COAs could be proved for up to two years of operations so if it's areas up to where you're going to be going back multiple times, then it would behoove you to ask for longer duration.

Jessica Moody: That's good advice. We've heard the 60-90 day estimated wait do you feel that is accurate? If so, is there a process to speed up if a pilot has a re-occurring job and is regularly accessing the air space?

Jim Williams: Well, I don't know if there is a way to speed that up. Frankly, I am hearing that the current approval rate for existing Section 333 holders isn't even meeting that standard. I assume that is an aspirational standard for the FAA and it will depend on the numbers of people made available to process this paperwork. Before the advent of the unmanned aircraft and unmanned aircraft COAs, the FAA might issue a couple hundred of those a year for special events like air shows and aircraft that need a special permission for whatever reason. The explosion of the demand for COAS from air traffic control has not been accompanied by an increase in their budget to increase the staff to hire people to do the work. That's why I said when you get make sure it is for a long duration and you do not have to go back and do it again for another couple of years.

Jessica Moody: That's a good tip. One of the surprises in Part 107 was around the airspace surrounding vertical structures which many UAV companies inspect. Previously, drone pilots were prohibited from flying higher than 400 feet above ground level, but drones are the most efficient and safest ways to inspect structures that higher than that.

Under Part 107, operators may fly higher than 400 feet as long they do not fly 400 feet higher than the structure they are inspecting. Our client here at Skyward, Talon uses drones to inspect 1000's of vertical structures every year reducing the cost in injuries associated with falls of people inspecting those towers. This change in available airspace has a big impact, companies like Talon, who are using drones to improve the safety of their workers across the country. The vertical structure airspace allotment was a surprise that we didn't expect or see in an earlier draft of the rule. Jim, you talked a little bit about commenting and what lead to rule changes and do you think this is what happened here, too?

Jim Williams: Indeed it is, so the process that you have to go through for every rule includes public comment and then resolution of those comments. Multiple people commented on the fact that in order to inspect the tower, which is much safer than people climbing the tower, I also need to go higher than 400 feet and they also pointed out that manned aviation isn't supposed to fly 500 feet of these towers either vertically or latterly so the arch you see on the screen here if you add a hundred feet to that's where manned aircraft is supposed to go. So, theoretically you shouldn't have to conflict man and unmanned in this space regardless of the height. So it just makes sense to do this and that's the kind of improvements you get as a result of a public comment process on a rule. Even though it does take another 16 months after the initial notice was put out to get to this point

Jessica Moody: Is there a maximum height of the structure that this rule applies to?

Jim Williams: So it gets kind of squirrely at high altitudes because you eventually get high enough that you poke up into what's known as "Class E Airspace" which is controlled airspace. So

theoretically, if you were at a high mountain peak that had a tower that poked up into Class E then you would need to go get special permission to be operating in the Class E airspace.

Jessica Moody: Yes got it. Thank you for that clarification. One of the standout conclusions of Part 107 is the requirement of the commercial drone operators is to take a written in-person air nautical test that includes drones specific content. Let's take a look what's on the test and how to get prepared. For those who don't have a Current Part 61 certificate you'll need to find a test center and schedule a time to take your Knowledge Exam. Once you've passed the test, you'll need to pass a TSA background check. The initial process is expected to take 6-8 weeks per applicant and then the knowledge exam is $150. You need to be proficient in English and at least 16 years old at the time of the exam. If you are under Current Part 61, you'll need to take an online course. Jim, we received a lot of questions ahead about getting the background checks scheduled or taking care of in advance of the passing of the knowledge exam. Are there an option available for those wanting to speed up the process?

Jim Williams: There currently is not. The FAA is going to use the existing process they use for unmanned aviation pilots. So you have to file for you application to get the certificate, which you only can do after which you've taken the test. So there really isn't really way to accelerate that process yet. If it becomes a problem for TSA and there becomes a back log, then I assume the FAA and TSA will find a way to sort out to accelerate that process. At this point I've heard no changes planned.

Jessica Moody: To your knowledge is there a cost for the background checks?

Jim Williams: No, there's not. It is part of the normal process of applying for a pilot's certificate.

Jessica Moody: So, we know that the test will be 60 questions. You will have 2 hours to complete the test. You must have 70% correct to pass. You are able to retake the test, but you will need to pay the $150.00 test fee again and wait a 14 days for retesting. For those of your current pilot license or have taken a knowledge exam in the past, will be familiar with the unmanned aircraft general knowledge exam format. For those of you who haven't, it's a little different than many standard tests. You'll need airman knowledge supplement test to complete the exam. We've put 2 example questions on this slide. You can see that much of the test requires demonstration that you understand concepts like reading of the FR sectional or calculating aircraft performance. If you need support beyond the supplied practice questions or want a more thorough introduction to the concepts you'll see of the Part 107 test, there are many training options available.

Of course these are not a guarantee that you'll pass, but they are a good option to consider if the test content is overwhelming. There are many companies that are offering Part 107 prep classes and courses, including Drone Pilot Ground School, DartDrones, Drone U, and Aerodrome just to name a few. Links to these courses will be available on the copy of the slides that we will send to all registrants. Links to these courses will be available on a copy of the slides that we send to all registrants. There's also a free 2 hours course that Part 61 pilots are required to take to get their unmanned certificate but those of us who are without that certificate already can take that it's not sufficient to get your certificate but its helpful information. So X, is a former commercial helicopter pilot. You've taken your fair scare tests with the FAA, do you have any advice for the first timers?

X: Two things: I recommend that if you are apprehensive to look at a training program like the ones you mentioned in here and I've always found it helpful to have a study buddy to quiz you to work through the subjects. Someone else going through the process to motivate you, I'd use a testing center and etc. The other thing I would recommend is if you're new to aviation or aviation concepts, you might want to find someone that does have their Part 61 certification or manned aviation certificate to help clarify some of the concepts.

Jessica Moody: Great thanks X. So what can you do under Part 107 to grow your business? No matter what your business does in order to be successful, you need to provide excellent customer service, deliver the product you committed to, communicate well with you clients, honor times lines, deliver you expertise, and charge fair rates. Like many professionals in many other industries, drone service providers need to carry liability insurance and follow industry regulations. Now insurance is a not requirement but it's something that a lot of customers and others will require of you if you want to fly for them. As you can see here a few ways Skyward helps you manage all of this on the screen.

We do get a lot of questions from entrepreneurs about marketing. We always remind people to start by focusing on the specific industry, become an expert, build trust, accumulate flight hours, and create an outstanding portfolio. The Skyward badge is a great way to show your experience and credibility as an operator. It is available to individuals with basic account and it shows aggregate hours of all pilots in an organization for a Start-Up Pro or Pro Plus account. Professional operators use Skyward to manage drone operations and build the best program right from the start. Skyward helps you to know where to fly, log flights, coordinate with your entire team, scale your business and manage your information. These are all things that many insurers and customers require drone operators to show before they get coverage or win a job. We did want to give our Webinar attendees a first look at what is coming up next from Skyward. We are introducing a mobile application and the first version, launching soon, will offer offline access designed for pilots in the field and after that we will be adding checklist and mobile flight Logging tools for fast on-sight login. We've touched on the basics of a lot of information today, so I wanted to share with you additional resources we have available. At skyward.io/support, you will find a dedicated Part 107 Resource Page, Insurance Checklist, and an eBook on launching a commercial drone operation. We also have recordings on our past webinars, logs, and a lot of other helpful information.

Now I would like to turn this over to our audience and kick off our Q & A session.

I'll start with you Jim. A listener from Bulgaria, Europe, would like know how much Part 107 overlaps with the existing European legislation. No country in particular and wonders if there is a way that the FAA can recognize some of the exams and courses taken in a different part of the world?

Jim Williams: That's a very complicated question. One of the biggest reasons it is complicated is that in Europe the regulatory authority under the European Union doesn't regulate drones smaller than 150 kilos. So each state has to put in place their own set of regulations to deal with small unmanned aircraft, so there for the variation is pretty wide. The UK rules are very similar to the FAA rules. There are differences. Now when it comes to recognition back in forth between states, there are agreements in place that the FAA has to reciprocally accept other countries approvals both of pilots and aircraft, etc. However, none of those agreements address unmanned aircraft at this time. So basically there's no reciprocity between the U.S. or any other country at this point. Eventually I'm sure that we will get to that point. As a matter of fact when I was at the FAA we were actually in discussion with the Canadians about how to go about aligning the two regulatory structures so that you could seamlessly operate between the U.S. and Canada but it was just the discussion stages so everybody will have to standby before there's any international agreements that'll allow us to process.

Jessica Moody: Alright, so this came in ahead of the webinar. Jim, can you clarify the rules or restrictions for flying in close proximity to a heliport and/or seaplane base in Class G airspace? Almost every major hospital has a heliport. The rule seems to be vague and/or confusing and wants to know if the B4UFLY application is consistent with the rule when it shows a 5 mile radius circle around each and every heliport / seaplane base saying that notification is required.

Jim Williams: So the B4UFLY App was oriented and still is oriented towards the recreational flyer. The recreational flyers by laws is to notify all airports of their intent to operate near that airport.

Now the Congress and the law didn't really define what they meant by airports. If you take the broadest definition then you wind up with everything that's on a publish chart which is like 22,000 different locations across the country and that is a lot of airports. For example, we discovered the entire state of New Jersey is within 5 miles of some sort of airport. So obviously, we don't think that's what Congress really intended but they haven't really clarified that yet and the FAA hasn't chosen to try to draw a distinction. But that isn't strictly for recreational flyers. Under Part 107 you are only required to get special attention permission to operate if you are within a controlled airspace. Heliports are not in controlled airspace just because it's a heliport. Some are in controlled airspace just because there is airport nearby that has Class B, C or D airspace associated with that airport. So the way that the rule works is you are required to stay out of the way of unmanned aviation. Now there is better explanation of the rule perimeters in the Advisory Circular that the FAA published at the same time as the Rule. It's AC Number 107-2. You can find it on the FAA's website which is really easy to find. It is FAA.gov/UAS, which is unmanned aircraft systems but slash UAS. You can find that Advisory Circular and it really does explain much better what is meant by staying out of the way of manned aviation and strongly recommend everybody go take a look at that before they start operating

Jessica Moody: Great! Thanks Jim. In just a short shameless plug if you're looking for airspace information, Skyward has a valid airspace map as we mentioned before and we will be coming out with an IOS and Android App very soon with regular up-to-date airspace information that reflects Part 107 and commercial operators. Speaking of Skyward, X we had a question that came in on how Skyward changed to reflect Part 107 Rules and support Part 107 pilots?

X: So I want to highlight what Jim said on the Advisory Circular. It talks a lot about what it means to be joining the…how companies operate as companies that operate the aircraft from the airspace and part of that is record keeping, so from the beginning there's several methods within Skyward that aren't as much focused on record keeping but that generate the records you need through the operations you do day-to-day. By scheduling pilots, by planning operations in order to conduct flights, you generate those kinds of records that give you as a manager, the ability to see the health of organizations and improve the potential of the client and your professional outfit, and to adhere to the best practices that are recommend under the Advisory Circular. When the rule first came out, we looked up what was in there and we developed what we call a traffic light protocol for how we prevent the airspaces. Pretty straight forward. We just use a yellow and red, kind of what you're used to with traffic signs, and we use a dashed yellow for places where we think maybe there is something that is not regulatory in nature but should be aware of.

So earlier on, we put in the controlled airspace that we thought was going to come out based on the rule and that's in our app right now. Under dashed yellow it might say, "hey, caution, there is something here". That airspace will turn to solid yellow to say, "hey, in order to operate here you need permission from the FAA". And for those of you that are still operating off the Section 333 even those things, that entire space will be available in the application in a different way. So now what we tried from the beginning is to simplify things like the airspace by using simple ways to convey that information to aviators and non-aviators at the same time. For those that come from an aviation background, if you are a Pro Plus client, you can see the VFR section. You can use the study mechanism while you're preparing for your tests and we will continue to roll out that information for the airspace as the rule evolves and to simplify it. And to step back to the other point, maintenance, records keeping, scheduling, training programs are all things that Skyward does. I pointed to a resource earlier, the support website, that's where we have best practice manuals on all the things put together by a team of experts that have built an app to really promulgate the best practices that you see in the Advisory Circular that Jim mentions.

Jessica Moody: Thanks X. Jim we touched on this a little but we are seeing it a lot during the Q & A. Can you explain again how we go about filing a COA to access controlled airspace under Part 107?

Jim Williams: There is going to be an online system that is actually flagged on the FAA website today that the same one I gave you earlier, which says "coming soon", where you click on that and you enter the information required about what you want to do, where you want to operate and how you want to operate, and it will go into a processing system that I have been told is going to be a little bit more automated than the current, what is basically a manual process. That means that the things that are routine that are typically granted will get granted pretty quickly with relatively little oversight. But anything that is new or unique or operating in close proximity to a major airport will take some review and might even take some interaction with the FAA. That approval process will be improved and online, but again there is a limited number of people at the FAA, who can process these. So my guess as time goes on, there are more and more people that are starting to request waivers and COAs, they are going to be pretty well swamped with this effort.

Jessica Moody: Jim, will a pre-flight TSA security background clearance, that you can get to go through airport security checkpoints faster, be enough or the same requirements for the TSA clearance for a Remote Pilot Certificate?

Jim Williams: I am not intimately aware of exactly what TSA do to people that are potential pilots. This requirement came about after 9/11, for obvious reasons, to make sure that people who are getting Pilot Certificates are getting them for legitimate reasons. So, my assumption is that it will be similar to the background check that is conducted to get associated with the TSA Pre-Check or the International Version Global Entry, but I do not know that for sure.

Jessica Moody: Is there a flight simulation or check flight in the exam?

Jim Williams: No, there is no practical knowledge testing required for operating a drone. The FAA discusses that there were a lot of comments from existing manned aviation interests saying, "Why aren't you having some sort of practical training requirement and isn't that unsafe?" The FAA's response is essentially that there are so many different aircraft out there that any practical training requirement wouldn't necessarily be valid for any bit of fraction of the aircraft that are out there and the technology is changing so quickly that it would be impossible to keep that practical training up to date. They've accomplished the safety by virtue of keeping people away from the operation. So, if you cannot fly over people, so therefore the risk is low enough, that you do not know what you are doing and you crashed, the only thing you lose is the money that you paid for the drone and not causing any risk. And there are consequences if you hit someone with your drone, because you didn't know how to fly it. My guess is that the insurance companies will step in here and in order to get reasonable rates for a business insurance, you will have had to demonstrated some level of proficiency with the aircraft or have a training program as a business to make sure that you aren't crashing and damaging those expensive commercial drones on a frequent basis. But the FAA is essentially staying out of that for small unmanned aircraft.

Jessica Moody: That makes sense. I am going to throw this question out there for the two of you. How do we determine to continue to fly under our Section 333 exemption or under Part 107? How do we "declare" which one we are flying under? Jim, let's start with you.

Jim Williams: The decision is a business one. If you are operating a vanilla Section 333 approval without anything special, that's completely contained within Part 107, it makes way more sense to quickly as possible move under Part 107 because you get rid of that 500 foot standoff distance. You get rid of the air space requirements you had associated. You no longer operating under a COA. It just gets cleaner and simpler. However, if you are like the company that got the night time approval to operate under their Section 333, they are obviously going to want to continue to operate under their Section 333 approval to do those nighttime ops until such time that they get a waiver from the FAA and allows them to move under Part 107. You don't really have to notify anybody which one you are doing. If something happens and you get investigated, the FAA inspector will want to see your approvals. At that point and time you will have to show them if you are operating under Section 333

or Part 107. If you are under Part 107, you will have to show your Pilot Certificate and if you are under Section 333 you will have to show your manned Pilot Certificate, and your exemption, and your COA. Obviously, it depends case by case, but I am sure most people are going to move…to say it's going to quickly behoove them to move to Part 107.

Jessica Moody: So X, do you have anything to add to this?

X: So you know Skyward had a Section 333 since very early on and helped some the first 50 folks with their Section 333. So on the other side, as an operator, I'm sure Jim has these stories too for the work they have at Denton's, helping operators navigate the regulator system. Let's say getting to know the people the on the other side of the table is extremely helpful. If you are a number 2 or number 3 or you continue to operate under your Section 333 for a while, there is contact information on there. There are certainly things that the FAA has hosted in terms of events, that's how we met Jim, from the UAS office there, to get to know the people who control the airspace. We have a great relationship with the Port of Portland that has the facilities that the FAA uses to run the local airports. We know the FAA in DC office. That information is in your exemption, their contact information. You have to be patient, because there are 1000's of people also asking them questions. If you can things precisely with references to regulations and your certificate, there are huge potential that you can do. That's also seen in what Jim has mentioned in the pathfinder program. There are certain things that we have done in R&D, which I will mention in a moment, that really point to one thing that there are really a lot of people on your side that are really interested in the safe integration in UAS and getting to know them, if you have countless operations, or if you have questions it is just a no brainer.

Jessica Moody: That's a really good tip. I know that from talking with some of our customers here at Skyward, I have definitely heard the same thing, that they have had a lot of success in building success with their local ATC, with their local FAA reps, or even with people in DC and have been able to have a really successful two-way dialog in the way they innovate and the has really helped them to move forward in the operations they want to do.

Jessica Moody: So Jim, I am going to read this as it was submitted. One question I have is whether the UAS I register to obtain an "N" number and fly "commercially" can also be flown as a "recreational" UAS using my hobby registration number? I want to use the same UAS for both the "recreational" and "commercial" flights? Do I need to register twice?

Jim Williams: No, you do not. If you have already registered it already for commercial operations and have received a "N" number or one of the new registration numbers through the online system. You are good to operate that aircraft, regardless, of whether it is hobby or for work. You can operate a commercial as a hobby, but you cannot operate a hobby as a commercial. The differing requirements are compatible is the best way to put. If you are a commercial operator then you are pretty much always considered going to be operating under Part 107, because those are the rules you have been trained and authorized to use. Even if you are flying for pleasure, if would behoove you to operate under Part 107, because you wouldn't have to notify the local airport if it wasn't under controlled airspace. So, on the other hand, if you are a hobbyist, and you have your aircraft registered as a hobbyist, you are registered as a hobbyist, then you can have multiple aircraft with that number on it. You cannot take that aircraft with that number on it and then you go operate it as a commercial entity without registering it specifically as an aircraft for commercial operations without getting your Part 107 certificate.

Jessica Moody: Makes sense. Thanks. So X, how will this affect Skyward in terms of logging of flights?

X: Let's say that logging flights is just another best practice. When you do fly logging, it is good to ask questions. Why do you log flights? Predominately the answer has to deal with proficiency and

training with individuals, with pilots. You might have an internal policy with your company that says, "you need at least 5 hours of this kind of flying with someone who has more experience before you are allowed to do it on your own." So flight logging really hasn't changed that much in that realm. Skyward tracks this information for both your pilot and your aircraft. On the aircraft side, we often log flights in order to do their scheduled maintenance and that means you might have something that says, "after every 5 hours you have to check the underside of the propellers on your Quad copter for fractures or other manufacturer's guidance." The Advisory Circular points out that you should follow the manufacturer's maintenance recommendations. Flight logging itself doesn't change radically, but we see more indication from the FAA, and as we continue to mature as an industry, that flight logging serves the same purposes as it did before. To see whether your folks have time operating under certain conditions for training and risk production and whether your aircraft needs to be maintained. One of the other things we do is wrap the flight logging into a bigger concept which is called an "operation", which is what you are taking out to do the job. Flight logging to us is part of an overall work flow, which is get a job from a client, put an operation together, determine what resources you need, log the flight so that you can do training and maintenance evaluations as I spoke of, and you might use flight logging as part of your billing regiment depending on how you work as a company. The reports you get from Skyward help you without that by separating the flight time vs. ground time vs. in-route time for your billing. The last thing we are working on, you may have seen, we did an announcement recently about being part of the defense log. We are working directly with the OEM's in order to do flight log integration. A lot of the platforms out there they just take the files and they figure out how to bring them into the system without really coordinating with the aircraft manufacturer. That makes it very difficult to have a really has a good comprehensive maintenance requirement. So, what we will be doing throughout 2016 and well into the future, is to continue to have flight logging be tightly integrated with OEM's as we bring your information to Skyward, and make it so that it all happens behind the scenes even things like our upcoming mobile app as we continue to mature that process.

Jessica Moody: Right. So, this next question is regarding inspection and Jim, I am going to pose that to you. Under Part 107, the FAA reserves the right to request operators to submit their aircraft for inspection at any time. Would this be a reactionary summons (i.e.: after an accident), a random summons, or a systematic summons? Is this similar to the "ramp check" that we see in manned aircraft flights?

Jim Williams: That is exactly what I was going to say, it is very similar to the ramp check. If a flight standard inspector can go to the ramp and check the aircraft to determine if they're air worthy. The same thing could be done with the drone the difference is there is no standard for drone air worthiness. I think it would have to be a pretty extreme case of ill repair, parts falling off, etc. before you'd get any actual action from the FAA. Given there are no maintenance record keeping requirements in this rule that's something you don't really have to worry about. If you read the Advisory Circular, what it talks about maintenance, it says we don't really require them but it makes sense for you to protect you asset by doing preventative maintenance as instructed by the manufacture and keeping records of it. Again, a tremendous recourses is the advisory circuit explaining what the rule really means.

Jessica Moody: Alright. X, as A Director of Operations, how can I make sure as I grow and scale my business, my crew is prepared for an aircraft inspection?

X: You know exactly as what Jim said, "Its best practices that you find look in the Advisory Circular and you know this is about preparedness. What is it that you do before the flight? How do you analyze the airspace to make sure that you're in the rules? How do you make sure you're flying friendly, flying safe? All of those little day to day business practices and procedure are part of what I recommend for those organizations that aren't used to running a business, like an aviation business, we have something called a Safe Flight Package, which is manual and procedures that can help you get your business off the ground. To help develop those practices and procedures. We see that as a

common theme on both sides. Large companies that understand risk and are doing complex things around machinery. They expect that you have this sort of record keeping that shows evidence that you run professional organization. The records are a result of the day-to-day process, of a maintenance process and of a training process. So, the real key is to get your processes in place and use record keeping to inform them and to show the history of what you need. Mostly the inspection is part of it, but if you can say this aircraft keeps having a bad problem, I've replaced the engine three times, and maybe there is something wrong with the ESC or the electrical system that I need to replace now. Developed procedures using a system of record, like Skyward, to maintain those procedures. If you do not know how to develop those procedures and using something like Take Flight Package. If you need specialized one-on-one, using a company like Denton, to get access to experts like John, to help you develop a practice. If you do something like that you passing any type of inspection probably will be pretty simple.

Jessica Moody: Right. So, Jim this next one came and is focusing in on nuances of the definition of a commercial flight. This person wrote, if I take photos and videos recreationally, and I am not certified under Part 107 and post them on YouTube and then I later am approached by someone who wants to purchase them, can I sell those photos or does that retroactively make it a commercial operation?

Jim Williams: Actually this is an exact example of something that FAA has published information on. The legal folks put out a legal opinion, also available on the FFA website, it says, "no, if it is really about the purpose of the flight that you conducted. If the purpose of the flight was for hobby or recreation, then any video collected that later becomes of value and is sold or marketed is not … doesn't make it retroactively a commercial flight. It is all about your intent when you are conducting that flight on that day and not about what happens after that with the results of the flight." This is spelled out in typical government legal ease, in a legal opinion, on the FAA website if you want to get into it. It really became a very big deal as where the FAA had to respond, because the news outlets were buying video from people who just happened to be flying recreationally and would capture a fire or car accident or whatever that was an aerial video of actual news. The news agencies were asking if they were some way liable on this. It is pretty clearly spelled out. It's very straight forward. It's about your intent when you flew the aircraft.

Jessica Moody: So Jim, how does the new rules affect universities and educators? Will Part 107 replace the May 2016 guidance on the educational use of drones?

Jim Williams: I think the two are very compatible. If you look at them very carefully, you will see that rules actually talk to that. The Advisory Circular talks to that very clearly. You can use Part 107 to conduct education and it even specifically talks to the pilot-in-command not necessarily being the pilot at the control, so that you can conduct training using your Part 107 certificate with someone who doesn't have a certificate. That's all spelled out pretty carefully. I think what you are seeing in that legal opinion was the same sort of the logic that was used to create to make the rule, because they were being done about the same time.

Jessica Moody: So another one I am going to post to both of you. What is the process for applying for exemption/waiver/permission to flying over people? For example, a sports stadium that is within a 5 miles radius of a local airport and I would love to get aerial photo and video of the facility (with facility permission). What do they need to do?

Jim Williams: This is a really tough question. The FAA, has not to date, approved an aircraft to fly over people unless that aircraft has been certificated. In other words, the design has been approved. In reality, they haven't approved that so much as they have allowed the military and the customs and boarder who have been given expressed permission by the FAA to fly over people and that's based on their certification of the aircraft. So, what the FAA is saying is that they put the waiver in there to allow for it when as at such time the aircraft matures or processes matures that

they can approve as the aircraft gets approved. They had an industry panel come together to recommend a set of guidelines that could be used for small lightweight aircrafts to fly over people and they make recommendations to the FAA, and the FAA really has promised to do the rule making to implement those recommendations once they solidify exactly what they're going to look like. So it's coming and once those standards are in place, it says if your aircraft meets these standards, an aircraft manufacturer that meets these standards should be able to certify. Once we meet that standard, and then you as an operator can purchase a waiver based on a manufacture certification that meet those standards and that's when the waiver would come in. Right now, you couldn't get approval to fly over people based on any sort of aircraft based on design criteria because there's none based on the FAA yet.

Jessica Moody: Alright so X, Will there be a fact sheet, checklist, or FAQs for Part 107 users and customers who hire drone service companies? Basically, this person is wanting to know how they check if a drone project manager or a drone service company is complying with Part 107?

X: So, that really breaks down into two really broad categories. If you're doing what I considered a small job like a small videography gig or something like that. That's going to be different if you're hiring 5 pilots to go inspect industrial processes and transformers, or those kinds of things. In the first case, the industry is still new, I would ask the individuals questions certainly whether they have their FAA certificate and look for references. Again, it's somebody that comes from this background that has been around aviation and can probably could give you a perspective on how to do that. On the larger side of things, we see this in two directions. Companies that are trying to bring in drone operations or trying to get a job with a large company or trying or a contract with a large company. They're going to expect to see certain things. We've got multiple clients, and the way they use Skyward as a way that they can manage an organization and maintain consistency. To see, Jesse, you have the operator certificate which you can upload into the pilot profile, in Skyward, but to see that their policies and procedures are being adhered to within the system. On the second side, the model that we see there is that people that have maybe an aviation, small business background often run these programs for large companies, either in house or by finding a consultant that understands how to do aviation operations, to bring those programs up to speed for them.

With Skyward, whether you are the small business or the larger enterprise business that has multiple organizations that director of operations is using to audit their contractors, they are all effectively looking for the same things. From the small side, references, evidence of work, pilot license, and just the basic questions like you would ask an electrician. Are you licensed or bonded? But in this, it would be the evidence of a certificate. Do you know if it's legal to fly here? On the larger side, growing that capability within your company or organization to be able to manage a distributed system of contractors. What we found was that for those of you who are just starting as an individual or a couple of people who are trying to get work with these larger drone companies, is that every single one of these that we have scene, many or our clients, are expecting it. You'll come into their eco-system and be able to show them that I have maintenance procedures, I've got the minimum amount of hours that are required before I am allow these operations, and I have an insurance certificate. Our clients use Skyward to go look at that so that you can upload your transcript or get insurance certificates to comply with their policies and procedures. Long story short, it varies in the small category is one thing and in the larger category of business it's a little bit different. Both Skyward and Denton can both help you to answer these questions in our advisory capabilities.

Jessica Moody: Jim, do you have any advice for those companies that are not familiar with regulations that want to hire a drone service provider and be certain that they are by the book?

Jim Williams: Yes, it's pretty simple actually. Insist on seeing their credentials from the standpoint of do they have their pilot certification? Are they insured both for their liability and yours when you hire them? That's really the key. The insurance companies do a good bid of weeding out. I think

there are other intangibles. Your system of keeping track of people and showing their maturity. There is always things like the Better Business Bureau and even potentially State and local business licenses that you can ask for. I think it will come as common as hiring someone to pave your driveway, hiring someone to do your video shooting with a drone, so you are going to have to "Buyer Beware" just like in any other small business. There are ways to determine who is legit and who isn't?

Jessica Moody: So Jim, we have quite a few Canadians on the line or those living near the border and a few would like to know what an operator needs to do to fly in compliance at or near the Canadian border? Specifically in areas where the border is unclear like bodies of water. Do they need to be certified in both countries?

Jim Williams: Well to be safe, yes, you would be. I think that you would get a good bit of lead way if you strayed across the border as long as there was no injury caused etc. Knowing exactly where the border is difficult when you are in the air. I think both regulatory authorities would probably cut you some slack, but the bottom line is if you want to operate around the border routinely and be completely safe and legal, you should get approval on both sides of the border.

Jessica Moody: Alright, Jim, how will the laws be enforced and what will the penalties be for noncompliance?

Jim Williams: The FAA has a compliance not an enforcement policy. Their first response to a violation, unless someone is injured or some manned aviation asset is put at risk, it will probably be just a warning and education. In other words, they are going to tell you what you did wrong. They'll tell you not to do it again. They'll make a record of that interaction in their system, so that if you show up later as you did it again, then it won't be such a nice situation. The FAA has the authority to fine people up to $11,000 per incident. If they discover that you have been operating without approval, let's say in a Class B airspace, and they catch you once, but they find evidence that you have done it 100 times then they can fine you $11,000 for every incident. So that means that instead of an $11,000 fine it is $110,000 fine. It really gets to the point of Know the Rules – Follow the Rules, don't put your livelihood at risk. Chances are you will be fine.

Jessica Moody: We have one final question. As one of the original architects of Part 107, will you be getting your remote pilot certificate when testing opens?

Jim Williams: Oh yes. Absolutely. Even though I will probably never conduct a flight. I feel like that if I am going to advise people how to do this business I should have been through the process myself.

Jessica Moody: Great! We hope that you will share a photo of you with your certificate when it arrives.

Jim Williams: I got my drone registration on the first day that that was available. I show that certificate proudly as well.

Jessica Moody: Great! That's all the time we have for Q & A. Thank you all for joining us. We will be following up with a recording of today's webinar, a copy of the document, and an invitation to start managing your drone business on Skyward. Before we sign off Jim, what's the latest at Denton's and what services are you offering drone operators?

Jim Williams: Well, we specialize in helping the larger companies, find their way through the regulatory process, to get things approved that are not routine, to advise them on how to get out of trouble if they've made mistakes, and in general we provide complete legal services to anyone in the business. We also run the Drone Insurance Association. It is actually Unmanned Aircraft Insurance

Association, so that we can advise people about getting insurance and what it takes to get a good deal on insurance. In general, it is an advisory and legal services to support anyone in the drone business.

Jessica Moody: Great! So Jim and the Skyward team will be at Inter Drone this year from September 7 – 9 and we hope everyone listening will be able to attend. If you haven't purchased your passes yet, you can use code **SKYWARD** and save $100 a three day conference pass.

[This paragraph has been redacted regarding marketing information provided by the webinar presenter.]