

**TINA** All right, so flying at night is really fun. And in order to get your private pilot, you actually have to fly at night. You even have to do a short cross-country flight at night. So it's really important for you to understand the dimensions of flying at night. And it's something else to set personal minimums about.

But overall, I love flying at night. It's one of my favorite things to do. And this is actually a picture that the person sitting on the right seat took when I was landing in Bedford.

So what do you see in this picture? Who can identify where the runway is? Can you at least see the runway? All right, this just-- yes? In the yellow shirt.

**AUDIENCE:** It's right after the yellow cross. And there's red and yellow lights on either side of the runway. And the very end of it is marked with a line of green lights.

**TINA** That's right. So the green line is marking the threshold of the runway. Along the sides of the runway, it's yellow and then becomes red at the end. What are those lights to the right of the runway?

**AUDIENCE:** Glide slope.

**TINA** Your glide slope. What is it called?

**SRIVASTAVA:**

**AUDIENCE:** PAPI.

**TINA** PAPI. All right. Come on, guys. We've covered VASIs and PAPIs. So the VASI was the vertical one where the two lights are on top and then two lights are at the bottom. And the PAPI is the horizontal one. And so as you can see in my beautiful picture, because it's my perfect flying abilities, I have two red lights and two white lights. Thank you very much. Yes?

**AUDIENCE:** It doesn't look like you're level.

**TINA** It either looks like I'm not level, or the person taking the picture isn't level. But it's definitely not level. I agree with you. Now I would tell you how I'm getting bounced around by the wind. But in fact, at night, usually, there isn't that much wind.

So let's talk about the definition of night. We actually had a good conversation at dinner last

night with Mark Nathanson. And he was talking about his FAA exam where he was examining a friend of mine, Emily, on her oral exam and asked her when's sunset? And she said, well, which sunset do you mean? So there are a lot of different definitions.

And so if you're just flying at night and you want to log hours that you're flying at night, then it's really any time after sunset or after civil twilight. But there are specific requirements in terms of having landings at night. And you can log whether your landing is at night or during the day. And they're a little bit more strict restrictions.

So the landing has to be a full hour after sunset. And if you're in the wee hours of the morning, then a full hour before sunrise. And that's because it's still pretty light during that time. So even after the sun sets, it stays bright for about an hour or so. And so they want to make sure that you're really familiar with flying in true night conditions.

Yeah. I love flying at night. One thing that's a lot easier is sometimes seeing the traffic, so seeing other aircraft. If you get notified, hey, there's a traffic 3 o'clock. You look out, and there it is. You can see the light.

There also aren't that many other planes. So sometimes you get the airport to yourself or the tower controller to yourself. And depending on the weather and the climate, it can be really great.

What's really interesting is that in the US, there is no special rating. So we talked about this. You don't need your instrument rating to fly at night. Now that's not the case in other countries. And I wouldn't say that we're, as I think Philip noted, we don't think that the Mexicans know-- we think that maybe they know something we don't, which is that you really need to take a lot of precautions. Flying at night is, in some ways, similar to flying in instrument conditions. And we talked about some of the visual effects and cues that you can get disoriented in.

So during your private, you're going to have three hours of night training, which is really cool. So you're going to fly at night. You're going to also do a short cross-country flight. But in terms of currency requirements, some people were asking about currency requirements, this is one of the currency requirements that you really want to keep in mind. So this after you get your pilot private pilot license, in order for you to fly with passengers, you have to have three takeoffs and landings to a full stop within the preceding 90 days.

So this is important. If you go on a trip during the day. And if it's going to be night, you might

have to land somewhere, kick out your passengers, do your currency, and then continue. I've had to do that at least once.

So night vision, so we talked a lot when we're talking about human factors about your visual system. So one thing I think people might have heard of the different rods and cones in your eyes. So I'm getting a lot of head nods. So the rods are actually the thing that can really help you see. But it's a lot easier to look on the sides.

So looking straight during the daytime, that's where you can see. But your rods that do a better job at nighttime are your primary receptors for night vision. And so, unfortunately, the problem is if you stare right at something, it might actually be harder to see it than if you were scanning, and you were five to 10 degrees off of what you were looking at. And so one thing when you're flying at night, when you're looking for traffic, instead of just looking in one spot, try to scan to look around.

Another thing is that it takes you a long time for your eyes to adjust to the darkness. So you can just probably have noticed this yourself when you're in your room at night or working on something, your eyes take a little time to adjust to that night light. And so what you want to do, if you're flying at night, is to give yourself a chance to adjust to that. You don't want to be in a very bright place right before you go flying at night because your eyes won't adjust.

Another thing you can consider doing is using red lights. And I actually do that. So this is a super fashionable picture of me wearing a giant headlamp. And I actually have a red light headlight.

And there are pros and cons. I think it's great because it really helps. You can have illumination without it destroying your night vision adjustment. But it also washes out red color. So you just want to keep that in mind.

But also, just in general, having that lamp on your head is really helpful. Although, you look not so great. It's a good thing that even if you take off in the evening when it's still bright outside, if you already have that light in place, then once it gets dark, once you need it, you have it right there. Again, you're not bending over, moving your head a lot, and searching the ground or your bag to look for a flashlight after it's dark when you're trying to fly a plane. That's not a good thing. If it's going to get dark or could possibly get dark while you're still flying have those flashlights available. Make sure you know where the light buttons are for all of your instrument panels.

**PHILIP** Yeah. It's important to mention that if the airplane, if everything is working properly, it should

**GREENSPUN:** have a dome light or a map reading light or something that's in the airplane. So you don't absolutely need the flashlight unless something is broken.

**TINA** Well, it depends. You might need a flashlight, for example, just to conduct your pre-flight

**SRIVASTAVA:** inspection, so to walk around the airplane, make sure all of the control surfaces can move free and clear. You want to use a light to do that.

I won't get into the details, but there was an accident in Hanscom a couple years back. And one of the concerns was that they had a lock on one of the control surfaces. And it was nighttime when they were trying to take off. And so having a flashlight, I think, is really critical in order to do your pre-flight inspection and make sure your airplane is safe to fly. Yes?

**AUDIENCE:** I've had this question for about the last year. Can you do anything special with your iPad at night because that's enough to ruin your night vision.

**TINA** Yeah. So that is a very good question. Do you do anything special with your iPad because it's

**SRIVASTAVA:** enough to ruin your night vision? Yeah. So I actually think it is definitely something I keep in mind always. You can adjust the brightness setting on the iPad. It still can be very bright. And then sometimes it has a night mode, and that does work for some things. It doesn't work for other things.

I think the approach plates are still pretty bright. But you can make your whole map and the weather information in night mode. And I think actually Garmin default mode is a much better viewable on your iPad than for flight as well. Yes?

**AUDIENCE:** You could also try inverting colors. It makes something that's white to black. I

**TINA** Yeah.

**SRIVASTAVA:**

**AUDIENCE:** Some of the colors that go on a map are the colors that won't show correctly. But it's something you can try.

**TINA** Yeah, so the suggestion was when you're using a tablet to invert the colors, and that can help

**SRIVASTAVA:** make everything white that's black. Would also be where the other colors might change. So if you're looking for cues like we talked earlier about the VFR versus IFR lights, make sure the

green didn't turn red and the red didn't turn green.

OK, so night illusions, so this is something to keep in mind. Especially in the Northeast, there's so many airports but also cities everywhere. And a lot of times, you can accidentally think that certain lights are something else.

We talked about the black hole illusion earlier when we were talking about human factors. That if, for example, there's a lot of snow around and it's dark, it makes it even harder to see features on the ground. And if it makes it, you might actually be lower than you are, than you think you are just because if there aren't any visual cues where you see exactly where the ground is.

Another concern is if the runway lights are too bright, it can make it seem like the runway is closer to you. So that's why a VASI or a PAPI, some sort of glide slope reference is a really good idea at night to make sure your eyes aren't playing tricks on you, and you're actually where you think you are.

So there's a whole bunch of equipment ratings that you need. This is you need everything that you need during the day for VFR flight. But you also need some additional lights. And certainly, if you want to think about another issue is the electrical system. So that's a more difficult thing. That if you lose your electrical system when you're flying at night, you don't have the ability to look outside to see where you are quite as easily.

**PHILIP**

Yeah. And if your airplane has circuit breakers and doesn't have fuses, then you don't need the spare set of fuses, just so you aren't concerned.

**GREENSPUN:**

**TINA**

And then this is a reminder of all that equipment that you need anyway during the day for flying. So speaking more specifically about the lights that are required on an aircraft, so you actually have to have lights related to navigation. And so there are different type of navigation lights.

**SRIVASTAVA:**

In general, you have a red light on the left to try to say, red is like port. Port is red. The port wine is red. And so red is on the left. That's one way they suggest that you remember that.

There's also this big anti-collision strobe light that blinks. Sometimes you actually have to have that light all the time like even during the day to avoid collisions. But it's especially important at night.

But what's also especially important is when you turn it off. You don't want to keep that anti-collision strobe light on when you're taxiing on the ground. Again, when you're flying, sometimes it's hard to tell if something's on the ground or if it's in the air. And if you see a bunch of lights, you might think it's a plane that's flying, and it can get confusing. So once you're off of an active runway, also turn off your anti-collision strobe light.

This is where it talks about that red light on the left is port. But the basic idea is based on where these are. That if you see a red light, that it's probably an airplane. And so if the red light is on the left wing, and you see an airplane, it's usually if I'm flying an airplane and this is another airplane crossing me, if it's flying in this way, I see the red light. If it's flying the other way, then I see the green light. So the colors help you figure out which way the plane is going.

**PHILIP**

Yeah, I realize this slide is a little confusing. That flashing red is not one of the navigation

**GREENSPUN:**

lights. That would be like an anti-collision beacon or something rotating.

**TINA**

Yeah. And we'll talk about beacons next. So one thing that's really fun is when you're flying is

**SRIVASTAVA:**

to look for airports. So even if you're on a commercial flight, I really recommend just staring out the window while you're flying over a city and try to see if you can see one of these beacons. And odds are, you probably will. Even if you're in a tall building and look out, the Northeast has so many airports, you might be able to find one of these beacons.

So it'll basically be flashing green, white, green, white. Or if it's a military airport, slightly different. And so this little video, if you pay attention on the top right corner, it's showing that green, white, green. And the way that I just said it where you see it, and you say what's happening, that's a good way to check with your co-pilot or just the person sitting next to you if they're seeing the same thing you are.

So there's so many lights in a city. And they're different colors. And they're same color as street lights and other lights. And so to really make sure you've identified an airport and the other person sitting next you identified the same airport and you both agree you're heading to the same place, it's good to make sure that you guys are following the beacon. And you're making sure you've identified the same airport that you're heading to.

So this is that just seems like people had a lot of familiarity when we even just started with the first picture of me landing at Bedford. So you can see all the different lights on a runway. The types of lights that you see on the runway depend on the runway itself. So a smaller airport might only just have lights on the boundary of the runway. Whereas a really big, long runway,

Boston Logan has a whole bunch of lights going on.

The blue lights are actually the taxiway lights. And again, so if you're on a commercial flight, really highly recommend getting a window seat even if you have to pay \$20 bucks for it. And while you're taxiing, look out the window, and you'll see all these blue lights while you're taxiing. And you can look at the runway markers as well. Yes?

**AUDIENCE:** At the beginning of the runway, there's another [INAUDIBLE] parallel and then [INAUDIBLE]

**TINA SRIVASTAVA:** Yeah. So you sometimes call those approach light bars. And those are at big, big airports. And even some runways even have what's called a, is it a rabbit or a ribbon, where they have lights that--

**AUDIENCE:** It's a lead in, the lead in light.

**TINA SRIVASTAVA:** A lead in light. So it's not even that they're all just on but a light that turns. So there's a row of lights, and they turn them on in a row. So it looks like a line that's pointing towards the runway.

So even here at Hanscom, one of the runways has that. The one with the ILS approach has that. I think they call it a ribbon or a rabbit light.

**AUDIENCE:** It can also be called a rabbit, yeah.

**TINA SRIVASTAVA:** A rabbit. Yeah. So this is a story I just wanted to share with you. Recently, I did a flight to Lawrence Airport. So Lawrence is very close by. It's just north of here.

And I was going to land at this airport. And I know that from all the markings in the book that this runway that I was landing at had a PAPI. But as I was coming in to land, so this is-- so if you look in this, so the runway is up in the left corner of this picture over here.

And so that's what the runway looked like. This is the picture. As you can see on the left and the right, there is no PAPI. So there's no PAPI there.

And so as I was coming in to land, I wanted to make sure I was in the right place, everything was working properly. So I asked the tower controller. It was a towered airport. Is the PAPI on? Is it active? Is it broken? Is there something I missed in the no tam that the PAPI was out. And he said that the PAPI was on.

And so this confused me because, obviously, the PAPI is not on. And so I didn't know exactly.

Something was wrong. Either it was out, or maybe I was at the wrong runway. I didn't want to take any chances.

So I executed a go around. And I told the tower controller, I don't see the PAPI. He was like, no, the PAPI is definitely on. So OK. I did my go around. I proceeded in the traffic pattern. I came back. And miraculously, the second time around, I could see the PAPI very clearly.

Tower controller stuck to his story that it was on the whole time. But I have photo evidence that that wasn't true. So here on the left, you can see the PAPI.

I think the reason that story is relevant also, though, is that you want to make sure that you are seeing what you expect to see, right? We talked about the importance of a PAPI certainly to help with issues in terms of what your height is and visual illusions that are going on. But also, if you expect something to be there and it's not, maybe there's a lighted wind sock. And the lighted wind sock's not there.

You might want to check. Did I miss a notification of it being out? Or am I in the right place? You don't want to proceed, especially at night, into an area that you might not be familiar with. It also obviously helps to have a tower controller to talk to you. If you're at an uncontrolled airport, there is something called pilot-controlled lighting that we'll get into.

So this is just talking more about lights at big runways. OK, pilot-controlled lighting. So you'll see in this little video, so it starts off there's no light at the runway. And then, all of a sudden, the light pops up. So we're looking right over here. And that one has that ribbon light or rabbit light that I was talking about. So you see the white light that's moving. And then it lights up the whole thing.

So pilot-controlled lighting is kind of cool. So at non-towered airports or even at airports that are usually towered but at night they might not have the tower controller working overnight, they can turn off the lights. And the way that you turn it on is you actually do pilot-controlled lighting. So there's a frequency. Sometimes it's the same frequency as the tower frequency. And you basically on the same button that you hold down when you're speaking, you just click it. So you keep pushing that button. So if you push it five times, it turns on the lights. The number of times you click it, impacts what the brightness is of the intensity of the light.

One thing to also keep in mind is that the light is usually only on for about 15 minutes. So if you're still very far away from the airport, it's not a good idea to turn the light on because you

don't want a situation where it takes you 15 minutes to get there. And then as soon as you're landing, the light turn off. So it's good to just wait until you're actually close to the airport and do that.

Now one thing that maybe isn't recommended but is really fun to do, one time, I was flying at night. And I was flying over a bunch of untowered airports. There are a whole bunch in the Northeast area. And just to get used to pilot-controlled lighting, we would look up untowered airports we were flying over. And we would just light up various airports.

That was really fun. But it's generally a bad idea. Again, because if somebody is coming in to land and the lights are already on, they might off when they're not supposed to. So you really want the pilot who's landing to control when it turns on, so they get their 15 minutes. So I just wanted to have a-- yes? Go ahead.

**AUDIENCE:** Are the PAPI and VASI light always on the left or sometimes on the right?

**TINA SRIVASTAVA:** No. The question is, are the PAPI and VASI lights always on either the left or on the right of the runway? And no. I think I've seen both situations.

**PHILIP GREENSPUN:** Yeah. I think left is kind of standard. But for whatever reason, you also may see them on the right.

**TINA SRIVASTAVA:** Yeah. I think they were on the left here in this Lawrence picture.

**AUDIENCE:** At what point in the approach do you typically want to see the lights?

**TINA SRIVASTAVA:** So at what point in the approach do you want to see the lights? Well, usually, before you're making your approach, you see the lights. So when you're identifying the airport is when you see the lights.

So we didn't talk about it much today but how you usually do a landing, we discussed a little bit on instrument approaches. But when you're just flying VFR, including VFR at night, the way that you do an approach to landing actually involves flying. Let me draw it over here.

**PHILIP GREENSPUN:** And while you're doing that, I'll point out that the runway lights are directional. So they'll be substantial-- if you're lined up with the runway, they'll be a lot brighter. Still not as bright as the surrounding clutter and the shopping malls and so forth. But they'll be much, much brighter

when you're lined up with the runway than if you're looking from straight down or from the downwind leg as Tine is about to draw for you.

**TINA**  
**SRIVASTAVA:** So if this is your runway, and so it would have all of its runway markings. So let's say this is runway 29. You don't just-- you could do a straight in where you just kind of come to it. But most of the time, you would practice doing an approach where you actually enter the traffic pattern 45 degrees, so at a 45 degree angle here.

And then you enter this is kind of the midpoint. So you enter in at the 45 degrees, and then you continue this way. And so that's considered being on the downwind leg. So why would it be considered being on the downwind leg? Anyone?

**AUDIENCE:** The wind's blowing that way because you're landing this way.

**TINA**  
**SRIVASTAVA:** Exactly. Exactly. Very good. So the wind is going to be blowing this way. Because when you land, you want to land into the wind. And so if you're flying in the opposite direction of the runway, the wind's going to be behind you. So you're on the downwind leg.

This point over here is called being abeam the runway or abeam the numbers. And then, you fly out about to here. Usually, you'll start getting used to what this angle is. It might also be 45 degrees. But sometimes it depends on if there are noise abatement areas, and you're supposed to make a close approach or a different approach.

But essentially, you come out over here. You can see the runway out your wing. And then you turn your base leg, so that's this way. So then you're on base.

Pretty much, depending on the airplane, when you're abeam the numbers, you might start getting into runway in your landing configuration. You might start putting 10 degrees of flaps, slowing down your airspeed. You might want to be 80 or 90 knots of airspeed.

Then you turn base. You might want to put in another 10 degrees of flaps. You're at 20 degrees of flaps. And then, as you come in, you might want to be between 80 and 90 knots.

And now when you turn final, that's final. And as you get much closer, it's short final. And here, you want to be trying to be very aligned with the numbers and the runway. At the beginning, you want to be looking at the VASI and PAPI. But once you get closer, again, you want to look at the runway itself.

So the question was when do you want to see the lights of the runway? Before you enter the traffic pattern, you want to see that. Because otherwise, you don't know exactly where the midpoint is. You don't know how to enter. You don't know how to make sure you're exactly flying alongside the runway.

**PHILIP**

Yeah. And just keep in mind, this is called right traffic because you're making right turns. At a towered airport like Hanscom, depending on what direction you're coming from, you'll be assigned either right or left traffic to keep you from crossing the runway. At an untowered airport, it's conventional, usually, to fly left traffic pattern unless there's terrain or some other consideration that'll be published. And they'll tell you that right pattern is preferred. But if they don't tell you anything, then left traffic is the convention.

**GREENSPUN:**

**TINA**

Yeah, absolutely. And just for completeness, once you take off, you're in the upwind. And then you could turn crosswind and then downwind again. And there might be other people that are flying the other side of the traffic pattern at the same time. So that's usually the case at Hanscom. There are people doing both. Is there a question? Yes?

**SRIVASTAVA:**

**AUDIENCE:**

Are there any situations where you have to call an airport to turn on the lights like you were saying?

**TINA**

Oh, yeah. So the question was, do you have to call an airport to tell them to turn on the lights?

**SRIVASTAVA:**

So Hyannis, in the story I was giving before, had the lights on. But as we talked about procession, your heading indicator, in this particular plane, was really, really not good.

And regardless, you have to keep updating your heading indicator with your magnetic compass during flight. So your heading indicator is going to drift and get a couple degrees off. And so throughout the flight, you have to continuously look at your magnetic compass and adjust your heading indicator.

And so usually, you only have to do that every so often, maybe every 30 minutes, every hour. But this particular plane that it was in it was just a terrible instrument. And it would get 20 degrees off within five minutes. And I was basically just moving it all the time. The thing was basically busted.

And the problem with it was I was flying at night. And at nighttime, although you can illuminate your flight instruments, you can't illuminate that magnetic compass. And so that little ball with the liquid in it, I couldn't illuminate it without having my headlight on and then losing my night

vision. So it very difficult for me to figure out exactly what heading I was on at that particular moment.

And so that's why I wanted to call up Hyannis, which had two intersecting runways, to just double check and double confirm I was going into the runway that I thought I was going into. And the really nice tower controller at Hyannis lit up to a higher light intensity the runway that I was going to land on, so I could make sure, yes, that's where I was going. And then he reduced the light intensity back down.

**PHILIP GREENSPUN:** That was a great commercial for a glass cockpit or an HSI, which is slave to a magnetometer out in the wing. All right, we should wrap this one up.

**TINA SRIVASTAVA:** So the last thing is just I wanted to do it a little bit of a discussion on where you might try to land if you had an engine failure, and you weren't able to get your engine restarted. Most of the time you have an engine failure, there's a whole flow that you go through. And turns out, you probably messed something up. You didn't have enough mixture of whatever it was, and you can get the engine restarted.

But if you can't get the engine restarted, and you have to do a forced landing, where would we go? So in this picture, the red x is where I'm saying you had that failure. You don't think you could make it all the way to Mansfield or another airport. So I threw up a couple letters.

But where? Let's talk about the thought process. How would you decide where you would land? Land in the Hudson. OK, one suggestion.

**AUDIENCE:** Not A or C because they're populated areas.

**TINA SRIVASTAVA:** Great. Not A or C because they are populated areas. Very good. You would get that right on the FAA exam. All right, what about B or D? Which one? Bravo or delta?

**AUDIENCE:** Bravo.

**TINA SRIVASTAVA:** Yeah, bravo. Why would you choose bravo?

**AUDIENCE:** It's a road.

**TINA SRIVASTAVA:** It's a road. Why is a road a good place to land at night?

**AUDIENCE:**

**AUDIENCE:** As compared to water.

**TINA** As compared to water. D is not on-- delta is not on water. That blue line is a mode b  
**SRIVASTAVA:** transponder line.

**AUDIENCE:** Illumination.

**TINA** Illumination, that's it. A road is likely to be illuminated. So you can actually see it at night. And  
**SRIVASTAVA:** it'll be this nice long runway that you can land on. Yes?

**AUDIENCE:** I was going to say it's paved.

**TINA** It's paved.

**SRIVASTAVA:**

**AUDIENCE:** It's a little bit more forgiving.

**TINA** Yeah, absolutely. It's much better to pick a paved surface than landing in a dark field which  
**SRIVASTAVA:** might turn out to be a lake, and you didn't realize. Also, D, if you notice, is towards the mountains. So landing in the mountains is not a good plan. Trying to see mountains at night is not a good plan. So it's probably not a good idea to go north in this picture. All right.

**AUDIENCE:** What's the blue line again?

**PHILIP** That was the airspace. It's part of the Boston bravo.

**GREENSPUN:**

**TINA** Yeah. That's the blue line surrounding the Boston class bravo airspace.

**SRIVASTAVA:**

**PHILIP** Yeah, and then that magenta one down there at the bottom is the 30 nautical mile mode c veil,  
**GREENSPUN:** it's called. And then these here, that's one tower. And these M things, that's multiple radio towers.

**AUDIENCE:** Now how would the risk of hitting a car impact your decision to land on a road?

**TINA** Yeah. So what's really interesting is actually the speed at which you land. So this is true for  
**SRIVASTAVA:** day or night operations. When a Cessna is landing, it usually lands at about 40 to 50 knots. And turns out, that's actually very similar to the miles per hour at which a car would be

traveling on a highway. So what's really cool is if you did have to land on a highway, you'd probably be going about the same speed as the cars.

**PHILIP GREENSPUN:** Even on busy highways, people seem to have just walked away. You never hear about somebody landing on the highway and then was killed by a car. All right, let's--

**TINA SRIVASTAVA:** And the last point on that is that, in Alaska, you're actually required to do a landing on a highway because they have so few airports.

**PHILIP GREENSPUN:** In a couple places. All right, we've got one more presentation and then the ForeFlight guys. So we'll wrap this with my final advice based on I've done a fair amount of night flying. It's good to take off before civil twilight. That gives you time to adjust to the world of darkness. So I like to take off on when it's still a little bit light. I don't mind landing in the dark, especially at a familiar airport.

I treat all the non-local night flights as instrument flights. The FAA says you can fly at night. That doesn't mean that you should do every flight at night, especially without a co-pilot. So either bring a co-pilot or use an IFR approach. That helps you to find the correct runway at the correct airport.

Remember your two-pilot airline crews have, quite a few times, landed at the wrong airport altogether. Bigger airports are better at night. You know? Landing at Hanscom at night is a lot like landing during the day. There's just a million lights. And that's a nice big space. And the serious parachutes good at night.