



Digital Photography

Susan: Hello and welcome to Tech Talk from the University of Minnesota your source of information on the technology that surrounds us everyday. I'm your host, Susan McKinnell. We all have photos like those we've just seen; photographs have always been a way to record important events in our lives. But we didn't know if they were out of focus or if grandma's eyes were closed until the film was developed and that was often weeks later. With today's digital technology we can tell instantly if we've taken a good picture or if we need to take it again, not only that, there are lots of options for sharing our photos with family and friends. Today, we'll be talking about digital photography. Some of the terms you'll hear include: ISO, megapixel, digital zoom, and optical zoom. Joining me today is Patrick O'Leary. Patrick worked as a commercial photographer for Eighteen years specializing in editorial photography. He has a master's degree in Mass Communication/Photo Journalism and is the staff photographer for University Relations. He has spent much of the last twelve years learning the digital and interactive worlds including running an interactive media company. It's great to have you here, Patrick.

Patrick: Thanks, very much. It's nice to be here.

Susan: Now tell me, why would...what are some of the advantages of a digital camera over an analog camera?

Patrick: Well, the big advantage is that people now are feeling free to take more shots than they ever used to. In the analog world we used to think about, just you know, putting in a roll of film and maybe taking photos at special occasions and I've had people tell me over months and months that they would have the same roll of film in their camera for six months or a year.

Susan: Well, you take it for the birthday; you take it for Christmas and you don't necessarily want to take it out and pay for much more than that so, yeah!

Patrick: Exactly. So now, with the digital photography, we have a lot more advantage in taking pictures at all occasions and really not having the storage, or you do have a bit of a storage issue, but not having the idea that you'd have to pay for the film, you get to look at the photos right away and some people will edit them right on the camera or they'll put them on the computer and edit them before they ever print them and people, with today's world, have the option of printing them on a home printer as well. So you don't have the expense is the biggest thing probably that you once had with the analog cameras and you have a way of kind of looking at things and going through them ahead of time.

Susan: That kind of instant gratification, I almost wonder if it kind of loosens people up with the camera a little bit, so that they're not quite so hesitant to take a shot.

Patrick: Right.

Susan: And one of the things that I have noticed is people handing the camera off to kids.

Patrick: Right. And that's one of the things that I've been doing too, with one of my, a couple of my kids, they will ask for the camera and I feel very, very free to give them the camera because there isn't the expense involved. And they can see it, you know, we don't really talk about it, but you know, you could talk about it you could look at what's going on so you get a much different perspective on how people do that. People were very resistant once upon a time to actually hand their camera off to their kids.

Susan: Not after you've paid for the roll of film and you pay to develop it and you never know what they're going to do with that camera.

Patrick: A lot of pictures of their shoes, yeah.

Susan: Exactly. I've got some of those in my photo album. Let me ask you, there are so many digital cameras out there right now. It's really the hot thing. Is there a reason to stick with analog at all?

Patrick: Actually there is. I was an analog or film photographer for years and I really do like it. It has some qualities to it that you really don't get with digital. And also when we look at what's going on with the black and white world, we don't see too much in the way of black and white photography anymore and I do believe that will start coming back. So like you would think of an artist who maybe is going to new techniques in art, they still preserve the old techniques. So, I'm an advocate when people call me and ask me and ask me about, you know, should I keep my camera, especially because you can get almost nothing for them in a trade-in or a sale, then I always say, "Yeah, keep your camera." Because at some point I think you'll understand there is a difference in the way film reacts to the way digital reacts. But for the most part what we are looking at for one of the big advantages of digital cameras is that you're really just trying to create memories rather than art; most people are. So, the fact that you can take so many more pictures and you feel so free to take pictures at any time, that really to me open up a lot for people and we're getting much, much more information than we ever...many more images than we ever used to get because people feel so free to take them.

Susan: That's a very interesting thing; many more images. And we have all this information right now from all other sources as well. But you're saying we're having more photos than we ever used to have.

Patrick: I think so, yeah. I mean my background is in documentary photography or I really like documentary photography so, I'm intrigued to see what's going to happen, 10, 20, 50 years from now when we start to look back at what we have because now we have a record of life, you know, daily life that we never used to have because we only had the pictures, or when I grew up,

Susan: From birthdays.

Patrick: Yeah, birthday parties or whatever and now people will feel free, you know, the kids are doing something cute, they'll take the camera, they'll snap it, if they're at the ball game, they'll take pictures of the kids at the ball game and so there is a lot of that going on and I don't know if anybody is really looking at what's that's going to do, but in terms of documenting daily life, I think that digital is going to change how we really do that.

Susan: It's very interesting, you know, I think a lot of people have talked about the lack of journaling, you know, that people used to do a lot more diary writing, but it's, we've got it a different, different way.

Patrick: I do it visually.

Susan: Some people still do, but yeah, we've got a visual documentation going on right now. That's really interesting. I think that some people have the perception with the digital camera; it's even better than a point and shoot. You just take it, you click it, you don't need to know anything about taking pictures, is that really the case?

Patrick: No, that's not really true.

Susan: I'm leading you a little bit, here.

Patrick: There are a lot differences. Digital cameras have wonderful things in them that in many cases you have many different adjustments and one of the things that I think comes up a lot is that what we used to call ASA is now called ISO, or the speed of the film (it used to be) but they still have that in a digital camera. A lot of people don't even know that exists.

Susan: The speed of the film, like if you're buying 200 or 400 or even 800?

Patrick: Exactly. They do often in digital cameras, they make them in all different ways, they are pre-set and there is nothing you can do about it but for the most part you can actually change that. And I was over helping somebody the other day and they said that every time they took a picture that it was just completely dark because they were trying it inside and they just couldn't get any exposure even when they used the flash. And I look at that setting in their camera in their menu and it was set at 50 ISO which would be very low and you would need a lot of light and I set it up to 200.

Susan: It would have to bright, bright, bright outside.

Patrick: Yep, and I set it to 200 or even 400 and that gave them much...you know they had more light all of a sudden because it's the speed at which the camera reacts to the light. So, digital does maintain that and you have control over that but once upon a time when you bought film it said it right on the box and you knew what you were getting and somebody told you to buy 200 all the time because it's good both indoor and outdoor or 400 or whatever.

Susan: yeah.

Patrick: And you were really aware of it. Now you're not really aware it's there if you're not paying attention.

Susan: You may not know that you're camera is set to one thing or the other. So, that's a good thing to look for in your camera. See what the, again, it's the ASA or is it the...

Patrick: ISO is now the

Susan: ISO speed.

Patrick: It used to be the American standard and now it's the International standard.

Susan: And 200 is a good thing to set it at?

Patrick: 200 is good, you know...

Susan: For just general.

Patrick: For just general, a lot of people say 400, but if you do mostly outdoor stuff you're using something that you don't need to use. I usually go for 200. But 200 or 400 is a good one.

Susan: Sounds great. What are some other picture taking techniques that are good to keep in mind?

Patrick: Well, part of it, digital or analog it doesn't really, you're still taking a picture, back in the core of it, you're still back to taking a picture and you still need to apply all the same principles that you'd be working with and one of the common things that people talk about is the rule of thirds. It's a very basic composition technique which is to take whatever the frame is and divide it into thirds this way and to divide it into thirds this way (vertically and horizontally) and wherever the intersections are or wherever the plane is is where you want to frame something. So a common example of that is when you're taking a scenery picture and you have the horizon out there (and by the way, you try to keep the horizon straight; even if the horizon isn't straight, you kind of turn it.) You might want to put the horizon in the upper third or the lower third, you know, giving more sky or higher detail or lower detail depending on what it is. If you're at the ocean, you might want to see the beach, the ocean and the horizon in the upper third.

Susan: Rather than smack dab in the middle.

Patrick: In the middle which is how people want to remember that stuff.

Susan: So there are a lot of good, simple tips that people could keep in mind and make them have better pictures in the first place. Are there some good places for people to go to? How can they learn about this?

Patrick: Yeah, and I think we talked a little bit about some of the web sites you can go to, but just doing a search on photo tutorials or photo techniques or things like that.

Susan: We've got a couple up here right now. Kodak, it looks like, has one that has a lot of just basic, top ten tips for taking a great picture.

Patrick: Right.

Susan: So just looking around going into Google and looking for how on how to take good pictures or something to that effect.

Patrick: I don't know if they're still showing this, but the top one shows the rule of thirds.

Susan: Right there!

Patrick: Yep. And where the intersection is there, sometimes when you're framing up people, I'll but the people a little off center, mostly because dead center, and sometimes dead center in a photo is fine, but a little off-center sometimes will make it more comfortable for the eye to look at.

Susan: Interesting. Okay. Great. Now, I wanted to ask you, just relatively briefly, you mentioned a little bit earlier all the pictures that people are taking it's really easy to be overwhelmed by that. How do you keep track of your pictures?

Patrick: It's a filing system I use. I mean, you learn that now because you're not just having film which we all knew what to do with it. You got it processed, you stuck it in a drawer somewhere and that made sense.

Susan: You lost it there.

Patrick: Yeah, but now we've opened up a whole different way of doing things. So what I do, is I generally, because I take so many pictures, I'll file them as say, they're work photos or they're personal photos, so I'll have a generalized photo system to put them in and then I'll make a subfolder within those generalized...so it's filing like filing anything.

Susan: Just like having a good filing cabinet.

Patrick: Yeah, so a folder inside of there. But I always do it, and I've talked to a number of people who do it the same way. I start with the year (I think it's the European dating system, or something. So, I will start with the year as '05 as opposed to 2005, I'll go 05 and then depending on what month it is

Susan: 11 or?

Patrick: Yeah, 11 or...and then the day say it's the 18th.

Susan: Following, mm hmm.

Patrick: But it's 051118 might be the date and then I will put a name that will be logical to me to help find that file. So I do it first by date so that everything ends up in my folder system in a chronological order and then I do it by topic or whatever it might be.

Susan: So it immediately sorts in the order from when you took it.

Patrick: And then what I would do is immediately I would try to make a copy of it and I would put that off to a CD storage way of doing that. But then, I might go back into that folder, if you have several different events going on, I might separate it out based on the events.

Susan: Now before you start doing that, the first thing you do is make a copy of the entire folder so that these are your backups because you don't want to lose anything and usually you just put it on a CD. Obviously you can back it up multiple times if you need to.

Patrick: CD or DVD depending on how much you want to...

Susan: I think you had a very good point about how to keep these safe. CDs don't last forever and we want to keep our CDs as safe as possible.

Patrick: Right.

Susan: How do you store yours?

Patrick: This is based on a little bit of reading but also based on talking to other people that do it, but I usually put them in Mylar sleeves which are...

Susan: The kind of sleeve we have right there. It looks kind of like a...

Patrick: Like an envelope. They also make these out of paper. I understand. It's all in the archival process. Paper isn't as archivally safe as the Mylar; it apparently doesn't leak as many chemicals onto whatever you're using. And then when you put it in the sleeve you also store it upright. And as I understand it and if you store it flat like I guess libraries have been doing this for years, if you store it flat over time, eventually it can warp just by the...

Susan: The pressure.

Patrick: Just by the pressure, yeah.

Susan: Just like with records.

Patrick: Right, yeah.

Susan: Thank you so much, Patrick. You've had lots of wonderful information for us today.

Patrick: Thank you.

Susan: Now that we know how to take a good picture with a digital camera, what is the best way to share all those images?

A slide show of photos is shown

VO: There are many ways to share your digital photos once you get them into your computer. Check with the instructions that came with the camera to see how to move the files onto your hard drive. It's often as simple as plugging your camera into your computer and dragging the files from one folder to another. Once the files are on your hard drive, you can use imaging software to crop out unwanted sections, reduce red eye, and adjust the color. After you get them all cleaned up, you can attach them to an email to send to friends and relatives, post them to the web using an online service, or burn them to a CD to send through the mail. CDs are also a good way to make back up copies of treasured moments. If you would like to have actual prints of your photos you can use a color printer. Or you can take that CD to a photo mat or department store that offers photo processing. Often you can get digital prints for the same cost as film prints. And if you want to share your pictures like an old fashioned slide show some cameras come with a cord that you can plug directly into your TV so you can proudly display your vacation photos for friends and family.

Susan: There are so many ways you can share your digital pictures but what do you need to get started taking them? With us today to discuss this is Mike Neuharth. Mike is an information technology specialist at the University of Minnesota. When not on campus assisting staff and faculty with their technology needs, he spends time sharing his reverence for documentary photography and interest in all things electronic with family, friends and strangers. It's great to have you here today, Mike.

Mike: Thank you.

Susan: What are some of the things you want to consider when you are looking for a digital camera?

Mike: Well, I mean the first thing that you want to look at is what you want to do with it. I think that's the most important thing that's going to determine a lot.

Susan: Excellent.

Mike: Most people are only looking to get a quick snapshot here and there; not do anything major so, really, you can get in on a pretty low end and do pretty well or you can spend a lot of money if that's what you're interested in doing.

Susan: And still take snapshots!

Mike: That's right. But, most importantly, I think, it's not all hype. You do want to look at the megapixel rating of the camera.

Susan: I hear that megapixel number a lot, three megapixels, four megapixels, four point two. What are does that mean really?

Mike: It's just the amount of information that the camera is going to soak in from a particular scene. So, it doesn't matter, necessarily, for if you're viewing things just on the web or displaying them on your computer, it's more going to give you more better resolution when printing things out.

Susan: Okay.

Mike: That's where it's really important, actually.

Susan: Okay, so if I know that I'm going to want to get some high-quality prints, then I'm going to want to go for a higher megapixel number?

Mike: It may do well for you to pay a little extra money to get a higher megapixel rating. But you can do...I mean they are making some pretty powerful camera for relatively cheap these days.

Susan: Okay. If I just want to have standard size 4x6 does that matter as far as the megapixels go?

Mike: A Four megapixel would do fine and actually I think you're pretty hard pressed to buy anything smaller than that these days, so yeah. A base model would do just fine for 4x6.

Susan: Just like anything those numbers just keep on going up and up. Great.

So, other than megapixel, what are some other things that I might want to think about?

Mike: Just whether or not there are any other options, if you want to be able to set the camera up manually, play with the shutter speed, and the ISO, do you want to be able to do anything like black and white pictures or CPO tone.

Susan: So different things might be in different cameras.

Mike: And one other thing that I would recommend for people, before they make a decision based on what they read is to go out and actually play with the cameras. Visit your local shop, pick it up, run through the menu, see what the options are and see if it makes sense to you.

Susan: Absolutely something to consider. I'm going to pick this guy up right here. I mean all the cameras that we have here are different sizes, they feel very different and getting something just that you're comfortable with.

Mike: Absolutely.

Susan: Would be an important thing.

Mike: And another complaint that a lot of people have is you'll notice you pick up some digital cameras and you take a snapshot and there's a little bit of lag time between when you press the button and when the picture is actually captured. That's something to watch out for.

Susan: A lot of us are still getting used to that!

Mike: Exactly.

Susan: So, play around with it in the store. Good idea. Any other research you ought to be doing?

Mike: I would definitely go online. There are many good review sites out there. That you can get opinions from people who are not trying to sell you on a camera but just sharing their experiences.

Susan: Mm. Hmm.

Mike: And that's a great resource.

Susan: That's one of the beautiful things about the web. Any particular websites out there you want to recommend?

Mike: I really like dpreview.com (digital photography review) and photo.net provides some good information.

Susan: Photo.net and dpreview; sounds like some good places. Now I hear a lot about digital zoom. Some of those digital zoom numbers sound great. It sounds like I can get some real good close-ups of maybe my kids from you know, across the soccer field. What's the scoop on that?

Mike: For you, the marketing is working.

Susan: (Laughs) I'm buying into it, huh?

Mike: The digital zoom? It's not the greatest thing to rely on. You are going to get a much clearer picture with an optical zoom if you have to rely on digital you're asking the camera to make up information. Because it's basically taking the large image that you have at your maximum optical zoom and just cropping it and enlarging it. So, if you've ever taken a photo on your computer and doubled the size, you notice how it gets jagged and looks blurry; that's essentially what you're doing with the digital zoom.

Susan: It's just making up that information. So an optical zoom, a digital zoom, it sounds like it's something that my computer is doing, some software type thing. What is an optical zoom doing? Why is that different?

Mike: Optical zoom is just using the physics of optics to amplify it and bring the subject closer to you.

Susan: That's like using a fancy schmancy lens. By the way, that camera there looks like it's got a nice lens on it. You want to hand that guy to me?

Mike: Sure.

Susan: Is that the main difference between this guy and the one I was looking at a minute ago? Is this a...?

Mike: That? The big difference between a digital single reflex lens camera, an srl like this, and one of these is that this is going to tend to have more manual features and also interchangeable lenses.

Susan: Okay.

Mike: So you would have a wider range of options in terms of focal length on lenses and things. Digital zoom wouldn't normally come into play with something like this.

Susan: So, it sounds like there's a pretty wide-open area. I can go with something simple if I'm just looking for point and shoot stuff, or I could go with something really fancy if I want to do a lot of playing around.

Mike: Absolutely.

Susan: And the main thing is to do my research to make sure that I get something that fits for me.

Mike: Do your research. Listen to people who have been out there and made the mistakes for you.

Susan: Great. Sounds good! Now, I talked a lot with Patrick about how to take a good picture. I just want to talk about some of the technical stuff with taking a picture. Well, first of all, storage. I know that I need to have a place on the camera to keep the stuff and we have a couple of different media types here.

Mike: Absolutely.

Susan: What's going on with these guys?

Mike: Just two basic media types; the SD memory and the compact flash.

Susan: Mm. Hmm. And there are more out there too.

Mike: There are a few more out there as well. You can get card readers for just about any media type that should work with just about any computer.

Susan: I've got a card reader, so I just hook this guy up into my computer and read the card.

Mike: Yep.

Susan: So that's another consideration, I suppose to add to the initial cost of my camera is what sort of card reader I might need.

Mike: Possibly. A lot of cameras you will be able to hook directly up to the computer. So, it's not as big of an issue.

Susan: With a cable like this guy right here? This is another USB cable but it's got an end for the camera.

Mike: Correct.

Susan: Little end for the camera, big end for the computer.

Mike: Yep.

Susan: Great! So as far as, I do have to have something with my card. I see that these are different sizes.

Mike: They are different sizes, yes.

Susan: We'll go back to these cards, one is 16 megabytes and one is 256 megabytes.

Mike: And the 256 is a little bit smaller isn't it?

Susan: Mm. Hmm. It is actually! How'd that happen? So I take it the bigger the card...the bigger the number the more I'm going to fit on there.

Mike: Right, the more pictures. And it also depends on what types of images you're shooting and whether it's jpeg or raw as to how many will fit on an individual card. But yeah, you can buy either of these in all different megabyte size.

Susan: Again, something I might want to invest in is a card that's going to be big enough to keep all of my pictures for me.

Mike: Certainly.

Susan: What's the difference between jpeg and raw? I know that I can fit a lot of jpeg images on my camera. Why would I take raw ones?

Mike: Jpeg images are basically a compressed version of the raw image. What they do is take out pixels that are very similar from the image and replace it with identical pixels so that there's not as much information stored in the image. But the more it's compressed, the more the quality goes down. We're kind of back to that thing with the digital zoom.

Susan: Absolutely.

Mike: Yeah. So.

Susan: So, why would I want to take a jpeg image then, it sounds like raw is the way to go if I want a really good picture.

Mike: Well, if you're only displaying things on like web galleries or something like that. The maximum resolution that a computer monitor can display is 72 dots per inch. So, anything larger than a jpeg isn't going to improve the quality of what you see.

Susan: So 72 dots per inch, the dpi, I hear about sometimes.

Mike: The dpi.

Susan: So there are 72 little bits of information across an inch. When I'm printing something is there more than that?

Mike: Typically between 250 and 300.

Susan: A lot more information for something that I'm printing.

Mike: A lot more.

Susan: Okay, so is that why sometimes when I'm looking at my computer and I see something that looks great on my computer and when I try to print it out...

Mike: And you try to print it out and looks terrible. That's exactly the reason.

Susan: Okay. So that's something I want to consider.

Mike: Mm. Hmm.

Susan: So I know that once I get my pictures and if I put them onto my computer I can do a lot of manipulations with them.

Mike: Sure.

Susan: Is that one of the things I want to be looking at as far as figuring out how much...is that a number I want to pay attention to so when I'm printing it it's going to look good?

Mike: Absolutely. If you pull images off in a raw format, for example, at 300 dpi, you'll be able to do a lot more manipulation, cropping or resizing and still retain the quality, than you would with a jpeg at a lower dpi.

Susan: Okay. So another reason to take raw in the first place is so that I have all the information I need if I want to do more later I can.

Mike: Right. But it's really only a consideration if you're thinking of printing it.

Susan: Okay. Or, what about if I'm going to blow it up?

Mike: Absolutely, yeah would be helpful as well then too.

Susan: Sounds good. A little bit about photo manipulation; what are some of the software options available for me out there?

Mike: If you're feeling a little like you'd like to spend some money you can go and throw money at Adobe's Photoshop application. They also have a light version of that and a couple of other products that are more geared toward generating images for the web specifically.

Susan: Great.

Mike: But there are plenty of software packages out there and plenty of free ones too.

Susan: Good to hear. I know that sometimes your camera comes along with an option as well, so free software that comes along with the camera.

Mike: Most companies do include some sort of software for at least managing your images.

Susan: That may be a good place to start, play around with that and then see.

Mike: See what you need after that.

Susan: Sounds good. Thank you so much for being here today, Mike.

Mike: Thanks for having me.

Susan: You've given us lots of good information. We've covered a lot of information on digital photography today. Here are a few highlights we've selected *for your files*.

Susan (VO): Patrick O'Leary, photographer at the University of Minnesota says that digital cameras often come with the same tools as regular film cameras but the names have changed.

Patrick: In a lot of cases you have many different adjustments and one of the things that I think comes up a lot is that what we used to call ASA is called ISO or the speed of the film; it used to be. Digital does maintain that, you have control over that but once upon a time when you bought the film it said it right on the box and you knew what you were getting and somebody told you to buy 200 all the time because it's good both indoor/outdoor--or 400 all the time--whatever. And you were really aware of it. Now you're not really aware it's there if you're not paying attention to the menus.

Susan (VO): Patrick also gave us a few tips on how to manage our growing collections of digital pictures.

Patrick: Do it first by date so everything ends up in my folder system in chronological order and then I do it by topic or whatever it might be.

Susan: so it immediately sorts in the order from which you took the photo.)

Patrick: And then what I would do is immediately I would try to make a copy of that and put that off to a CD storage way of doing that, but then I might go back into that folder and if you have several different events going on, I might separate it out based on the events.

Susan: And Patrick outlined some precautions you can take to protect the storage media itself.

Patrick: I usually put them in Mylar sleeves. 3:25:00 which are...

Susan: The kind sleeve we have right there it looks kinda like ...

Patrick: An envelope. They also make these out of paper. And as I understand, it's all in the archival process, paper isn't as archivally safe as a Mylar; apparently it doesn't leak as many chemical onto it; whatever you're using. When you put it in this sleeve you also store it upright and as I understand it, if you store it flat like you I guess libraries have been doing this for years -- if you store it flat, eventually over time it can warp. 3:49:19

Susan (VO): Mike Neuharth, technical specialist at the U gave us some pointers about how to decide on a digital camera.

Mike: It's not all hype, you do want to take a look at the megapixel rating on the camera.

Susan: What does that mean really?

Mike: It's just the amount of information that the cameras going to soak in from a particular scene. So - - It doesn't matter necessarily for if you're just viewing things just on the web or displaying them on your computer. It's more, going to give you better resolution when printing things out. That's where it's really important.

Susan (VO): Mike says someone shopping for a digital camera should consider looking online.

Mike: There are many good review sites out there that you can get opinions from people who are not trying to sell you on a camera but just sharing their experiences. I really like DP Review -- Digital Photography review and photo.net -- provide some good information.

Susan (VO): Mike cautioned against using some digital features.

Mike: The digital zoom, it's not the greatest thing to rely on. You're going to get a much clearer picture with an optical zoom. If you have to rely on digital you're asking the camera to make up information. It's basically taking the large image that you have at your maximum optical zoom and just cropping it and enlarging it. So if you've ever taken a photo on your computer and doubled the sized, you notice

how it gets jagged and looks blurry, that's essentially what you're doing with a digital zoom.
07:13:46:12

Susan: What is an optical zoom?

Mike: An optical zoom is just using the physics of optics to amplify and bring the subject closer to you.

Susan: If you have a question about digital photography you can post it on our website to have one of our specialists answer it. The address is techtalk.umn.edu. Next week we'll discuss what you need to know to make sure that nobody is spying on your computer activity; it's all about spyware and security. Until then, I'm Susan McKinnell.

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Pavek Museum of Broadcasting

Antique Telephone Collectors Association

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