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"Please stand by for realtime captions."

We will get started in about four minutes.

[Captioner standing by]

Good afternoon and work the best welcome to the Academy webinar, . My name is Jamie haste and with me as Laura Flint. If you have any technical problems please message her and she can help you out.

We have two presenters today, the first is Suzanne Carol, at the University of Montana. And Mike Mansfield in Missoula Montana. As government documents library she promotes interesting and sometimes strange state and federal publications available and enjoys helping to find information packed resources they need. The other presenter is David wall that he is responsible for developing strategic initiatives for presentation and lifecycle management of both tangible [indiscernible] for the library services and content management program at the US government publishing office where he's been the preservation library since 2010. Before we get started I will walk you through a few housekeeping reminders. If you have any questions or comments on the presentation please feel free to chat them in the chat box, located in the bottom right-hand corner of the screen. I will keep track of all the questions that come in and and that that end of the presentation we will have the presenter respond to them .

We will be recording today's session and will email a blank to the recording and slides to everyone who registered for the webinar. We will send out a certificate of present dissipation participation using the email you used to register. If anyone needs additional certificates because many people watch the webinar with you, please email [indiscernible] and include the title of today's webinar along with the names and email addresses of those needing a certificate.

If you need to zoom in on the slide shown other presenter click on the full-screen button in the bottom left-hand side of your screen. Enter full-screen mode and mouse over the blue bar at the top of the screen so it expands then click on the blue return button.

Finally at the end of the session, we will share webinar satisfaction survey with you. We appreciate if you would fill out that survey.

That's all of my housekeeping. I will hand the mic over to David.

All right. Thank you for joining us this afternoon. For everything you need to know about microfiche.

As near as we can tell GPO began disturbing publications to federal repository libraries on microfiche around 1977. About 40 years ago. By now of course, the last 40 years, there are hundreds if not thousands of titles and millions of fish in the libraries. We also recognize the libraries do have microfishe and film through 1977 because they were able to collect and select publications for the collection development.

The idea of miniaturized text images on film is almost as old as photography itself. In the early days, microforms were frequently part of fantastic design providing huge amounts of information content to people remotely. In the picture on the screen is one such fantastic vision.

Microfilm didn't become a reality until the 1930s when it was used to begin to record and copy large newspaper vaults that were again eating libraries out of storage. So microfilm becomes a way, because there's [indiscernible] format to record things like newspapers, journals, publications that come out serially. However him microfiche to the topic of the discussion today. Didn't appear until decades later.

The early 1960s, CO Carlson working for national cash registered company in Dayton Ohio change the information world find librarians everywhere by eight developing microfiche. Micro card was already taken. With tiny text printed on it. Carlson used existing and modified existing microfilm technology, took a rolled film and hundred 5 mm format, and decided to cut the film into the size following the ISO standard for international 86 [indiscernible]. And create individual sheets of film where the text would be separated by a grid pattern for the individual pages.

The original idea was part of the much larger information retrieval system that never really materialized. The idea was to sort of created information database with the microphone cabinet serving as a jukebox. And the recall using an optical camera loading system, someone would sit down at the screen and find the fishe in a cabinet in the system would move that out of the cabinet, to a reader that would then shine the camera onto the film through the reader and bring the image to where the reader happen to be. Like all visions of future, we ended up with something perhaps more practical.

So all microfiche starts as 105 mm wide roll of film. In the early days all was black and white using the same silver highlight image technology that was used in every camera in the world. In the diagram on the screen, this shows the basic layers if you turn a sheet of microfiche sideways, and blowup and enlarge what you are looking at. This is what you would be seeing if you are looking at silver highlight film. You essentially have all the film starts with a plastic base. On top of the plastic base is an emulsion layer with the process for capturing the light-sensitive image which then has to be chemically fused and below that layer is something they put in called and anti-how elation layer, think of it as an anti-halo light layer that keeps light from bouncing around in the layers of the film while the images being shot. That images taken off of the development process.

And in terms of looking at how the film is made for preservation purposes there are issues with each part of this various substrate. The emulsion, how the images created and with the plastic in the film base is. We will talk about that later on.

There are three main types of processes that we use for Accra fish. The first silver halide. These were master negatives for generation of positives. This film was also in chosen is a camera negative because it used cheap existing film technology for black and white. It was able to produce very clear high contrast images. One of the problems of producing the fishe the images very small . You have to maintain a high degree of resolution or clarity to resolve the print another illustration at a very high reduction ratio.

The first generation positives were sometimes used for cheat one copy fiche, which is why you have some with reverse polarity. [indiscernible]

To identify this, basically the emulsion side is very dull and the top side of the fiche is very glossy. Historically this was produced on both acetate and polyester base. It is not believe the GPO ever sent out much fiche that was in this type of format. It was a very expensive process. So usually used for master negatives and not the mass distribution copies sent to libraries. It doesn't mean though that you could acquire it through other means. -- Could acquire it through other means.

Cheap to duplicate the process also invented in the 50s, is the reason why the libraries are full of so much fiche. This is all cheap duplication copy. The images created by Diane CM, disodium salt. With various colored bags -- dies. You can have it in a number of different colors from black to yellow to blue. The grid pattern between the images actually carries a lot of the die and you can gain an idea of what the main die is from the color of that. Different dyes used in different processes, also produced on acetate and polyester base. The black guys do resemble halide, that there's a difference in how it looks if you compare the two side-by-side.

The die is in the M process the best -- [indiscernible] and ammonium salt, exposure to ammonia, to fix the image on the film. Particular is also a duplicate copy. This is not really of much concern with some of the issues with vinegar syndrome and other K. It's also produced on Molly them -- polyester base. Kind of a strange process in which the images fixed by producing and expanding nitrogen gas bubble that forms in the chemicals when light hits the film and it's developed out. The image is actually filled between two layers of plastic. The reason it's called testicular is because of the -- testicular is because of the bubbles.

This is a picture in the URL at the top, of the information that the government office puts out for vendors who want to contribute and produce microfilms and microforms with [indiscernible]. This is really for agencies to use if they want GPO to produce their fiche or for GPO under contract, I put it here to show if you go to the site what you will see is a ton of information about the rigorous quality control processes and specifications that are used now to create microfilm and microfiche.

The specifications now include polyvinyl, polyethylene [indiscernible]. The polyester film that is not susceptible to vinegar syndrome decay. It includes rigorous control processes for how the images are produced including master silver film as well as [indiscernible].

If all of the film overtime that we produce had stayed in the original silver highlight farm and was on polyester base, we wouldn't have a lot of the problems that we perhaps do with concerns about vinegar syndrome with acetate plastic base. That because of the cost of the silver film, it really is real simple -- real silver that fixed the image, in the libraries.

Looking at some the preservation issues with microfiche. I talked about the standard in that page just to say that in looking at why things fall apart, why various information formats and substrates, carriers of information the K, there's not really a fault you can pin on anybody. Know more than you can blame somebody for the fact that your daily newspaper decays and gets yellow. These are frequently materials that were designed to be widespread, cheaply disseminated, low-cost information formats to bring information to thousands and thousands of people that otherwise would not have had it. They were designed from the best quality that could be achieved with the efficiency in producing them. The other factor in some of the preservation issues with the material is a lot of the issues of having things decay over time were not known at the time the materials were produced. It takes decades before some of the inherent [indiscernible] and problems with the materials begin to show up.

One of the main problems with microfiche is it's nearly an obsolete format. Fewer people producing the film. Fewer people producing the chemicals in the products. Fewer readers. The ability to look at it as an ongoing format, underdevelopment.

The emulsion layer on microfilm and microfiche all are vulnerable to temperatures and high humidity. And the size and weight of the storage cases in most libraries I've worked in, means the microfiche are in the basement, which always raises concerns about humidity. The cellulose acetate film base that is used from the early 1930s all the way up through the invention of fiche in the 60s. And the persistence of that acetate film through the 90s, means that film can degrade and resolve in the vinegar syndrome condition.

The exact condition of all the fiche and films distributed to all the federal libraries across the United States is not really known. It sounds like there is work to be done to survey the collection. And the [indiscernible] particular format I mentioned, were created for cross effective access. Never thought of as being long-term preservation product. There could be a whole set of issues with those that we are not aware of.

People say how should I store my microfiche and microfilm? Really the silverfish if you have silverfish and film, should never ideally be stored in the same cabinet as Diane's oh. The die azole fiche will out gas Imodium product which can actually corrode the image on the silver fiche.

The storage area, use area and equipment, should be as free from dust as possible. If there is dust you should blow it off with canned air, resist the temptation to get a rag and wipe it off. Fiche in

a drawer should be supported so it stands upright. So consider cardboard spacers or some way of keeping things upright so when fiche is taken out it doesn't fall over.

The ideal temperature and humidity is always a bit of arrange factor. If you have the luxury and the ability to have a separate storage facility for microforms, that is wonderful. Because I think the humidity and temperature points will be lower. The usual situation is that fiche and film have to live in the same space as people. And usually, the off-site storage temperature will be too cold. So when I suggest is that should never get any warmer than 70°. Ideally the humidity range should stay between the 20% to 50%. 20% may seem really low but I know if you have a lot of steam heat are high heat and commercial buildings in the winter, it can drop significantly below that. If you're in a very humid climate, the relative humidity can climb above 50% during the summer. The problem with a low humidity is the film base can shrink a little bit of the emulsion can shrink and crack. And that can compromise the image. Higher than 50% relative humidity and the emulsion on the film can actually become sticky. And can become a source of mold. The emulsion and chemicals that hold the image layer are actually quite attractive to mold. And so above 50% you can have mold and the fiche stick together.

Vinegar syndrome is a common term you will find associated with microform. It applies only to fiche and to microfilm. With a poly acetone base. What happens over time, heat, humidity, accelerate a decaying process that allows the plasticizers in that plastic to out gas acidic acid. It smells like vinegar because household vinegar is 5% acetic acid and 5% water.

-- 95% water. As the film decay, the shrinking layer, the outgassing and acid coming out of the plastic, destroys the layer on top of it. The byproduct if you think of fiche in an enclosed case, the acid also can damage and destroy nearby forms of fiche. That's the reason for not storing multiple formats within the same cabinet.

So we have sent off a lot of fiche and film over the years. And I've been asked what is the solution to this. There is not perhaps one either way. What we need to do is begin to engage you all, the user community in determining what solutions are viable. One of the things we decided to do was hold this webinar to talk to you about it. To share some of what we already knew. And to get feedback, so that's everything you need to know about microfiche. We want to do additional community engagement. We want to develop a pilot process and begin to go to libraries and do testing of their collections. We want to evaluate and share those results. And try to come up with a cost-efficient sustainable plan to preserve access to that fiche and film. The plan would be implemented. We would evaluate results. And a white paper on a potential larger mitigation strategy for all of the content that we have out there. Would be proposed.

This preservation pilot would initiate without a doubt a condition assessment and participating libraries that want to participate in the final project. It would likely involve also a graphic assessment of [indiscernible]. Some titles it seems [indiscernible] on fiche. Some were shipped on fiche that we were seeing another format.

When we find fiche [indiscernible] we need to do some outreach to the agency to see if digital copy or other copy of publications can be required. And we need to track down where the original silver highlight Masters could be. I suggested one of the formats, one of the solutions

could be reformatting the fiche digitally. Into content [indiscernible]. I also recognize one of the potential solutions may be reformatting two new format polyester fiche. Reproducing it back in its original form.

I will turn the conversation and presentation over to Suzanne.

Hello. You might be wondering what can you do to find out if your microfiche is having an issue with the grading. The best degrading.

[indiscernible] detect acid and change color, depending on how much acid is present.

I will see if I can turn my microphone up a bit so you can hear me.

So we are going through and checking a microfiche to see what condition it is in. These are the categories you will have. And what you can do with those items. Depending on the coloration there will be another slide that shows the different colors. If there is no deterioration, just keeping it in cool, with as little humidity as necessary. If it is starting to degrade, cool storage is suggested. If it is really reacting, then it is cold storage or freezing. I don't know about anyone else personally, but we don't really have space or gigantic freezers to put all of our fiche in.

And these are some of the signs your fiche might be suffering and starting to have that breakdown in the emulsion layers. In the first example here, you can see it is bending. In the center we have an example of just curling. And here we have an example of the emulsion layer breaking down and the fiche is actually starting to stick to each other. This could be accompanied by curling or in this case, still actually pretty flat.

And we have mystery damage as I call it. Over here. And I actually have a theory about this one. I think the fiche was left on the reader. Because of the light it has [indiscernible]. Trying to determine visually what is going on. And then go ahead and take a look of what is actually happening.

So the example with the spots, that's because there's actually two pieces that have adhered together. In the bulbul the best bubbles are where it happened [indiscernible] where it is stuck.

So one thing I do, with fiche you want to leave the strips in the cabinet or in a separate location within a plastic bag. I to do a control just to see what would happen to us trip without the presence of anything just out on a shelf where it's not safe. That's what I have on the top. Underneath that is how it looks when you just take it out of the bag and it hasn't had a chance to react to anything. Underneath that is fiche I have had in the bag, for 48 hours specifically. You can see a bit of a reaction and the difference. One of the reasons why I wanted to do a control was that these tricks will react to light. They will react to anything in the air. I wanted to have something to compare other strips to, actually because of acid present in the cabinets or is it just what happens after a certain amount of time. Actually, yes you can pull apart the fiche that have stuck together.

Luckily those work too terribly stuck.

So my first round of testing, based on the age, if I'm noticing any curling, is to go in and put one of those test strips in the cabinet. I like to do this actually on a Friday, close it up and come back and check in on Monday. Otherwise I'm tempted to take a look. You can also mark the cabinet that you have with a keynote asking people to keep them closed. I don't think our fiche is having so much use is that to be an issue. And it's important to go back and recognize which drawers have them.

If I am noticing some change going on. Here is an example where this looks like it's probably about level I. On strict the best strips that come with a [indiscernible] color-coded to lay with the strip. This happens to be, there's not a lot of dividers in a particular area. And this is education department fiche that is having a reaction.

What I do after this is a will take some of the fiche from the cabinet, and I will put it in the) -- plastic bag with the strip. To try to determine what is actually causing the reaction. Multiple type or multiple ages. I can take those out and see where the problem might be. What fiche I may need to go through. Or monitor closely. Maybe see about digitizing. I also put a date on that so I remember exactly how long it has been with that particular material.

And sometimes this reaction, it's very slow. I have an example here of the first one. Where it has only been 24 hours. And there's just a slight change in the color around the edges. This is far more enhanced after 48 hours. This particular envelope had about five or six sheets of fiche in their. And of actually had some different fiche I have taken out of the cabinet as well. And there was no reaction. So actually it might be a very specific segment of the fiche.

And here is an example of comparing that and using that principle with that little scrap of testing paper.

I would rank this one at a one.

This is some of the other fiche that came out. As you can tell there was almost no reaction. Sometimes it seems it can be somewhat helpful to take a look at these and you can tell quickly, visually, the difference. So the pale blue. Unless you have some light going through it, it's a dark purple. This film was probably created sometime around 1988. Also keeping an idea of how old the film as, the older it is the more likely it might be to change. In some cases you might also have information included on the sleeve. That can help you determine who was actually creating and processing it. Because although all of these companies had followed the guidelines by the GPO, they might've been using a different base, different dyes or inks. And that can have an effect on where the problem lies.

So one of the reasons I ended up starting the project was because somebody had been filing microformat and there was a very strong vinegar smell. It turns out the vinegar smell was actually coming from newspapers. You can use a similar method with some microfilm as you can with the microfiche. First put the strip in the individual drawer and if it reacts, you can go ahead and pull some of this from the boxes and test them separately. In this case, this is one that was in actually having quite as much trouble. Unfortunately no pictures of some of the more

reactive film. One thing we were noticing. I believe these were from an archival center. But there's a real problem when you're having acid. And you have metal elements. Because the metal can rot. That's what you can see on the far parts of this image. Over here. Those hinges are starting to rest. It turns out rest can actually accelerate the process significantly. So you want to go ahead and take anything like this out. In this case the film is only reacting a little bit. That was some of the more reactive when the strips were really bright orange. And I actually noticed somebody brought up, sometimes [indiscernible] can have acid as well. I have had a few strips where the strip was in contact with the paper that has changed colors. If you can go through and take those out it would be helpful. I've also tried test where I've taken a few pieces of microform and tested them with the sleeve and without the sleeve. Depending on the enclosure, microfilm in a metal can, if that can is 10 or can rest, it can actually accelerate the process quite a bit. I would be careful with those and probably check those out.

One of the problems with these is they are often out of sight and out of mind. Unless you actually open the drawer.

This is a range of test strips. One that is new is right here. And you can see there's a whole variety in coloration and changes you can get. The one on the far right, because I didn't have anything that was reacting that strongly, this is what the test strip looks like when you put on a drop of vinegar. That is the far end. I would recommend putting together your own set like this. If you use test strips did I notice the colors on the pencil are not totally accurate to the strips you get. And I think there's like 200 and a package. If you can take a look at those and make your own chart, it would be helpful to see what's actually reacting. And how strongly.

It also gives you some context so if you have something that is only slightly changing color, you know there's one slide that will be much stronger.

So in order to track this change, what I do is list the date, the drawer that I tested, and then I go ahead and get a reading. To my estimation of how strong or how problematic it is. I have cases where I open the drawer and either from opening the drawer and the movement of air blows away, or maybe somebody's wondering why there was trash in the drawer. We do have issues with people taking things without a monitor sometimes.

If it looks like you're having some degrading, monitor that. And what I do is first see if there's other copies of some of these materials available. And if not, if anyone is digitizing it. If someone is, maybe we could do something like that.

And try to save some of this material.

It will also give you an idea of how quickly some of this might be degrading. And that can be helpful. So these are some the sources that I have used for finding more material. The Earl G microfilm handbook. The NE. Document Conservation Ctr. The NE. Document Conservation Ctr. Other sites for what to do with these program formats. In the image Institute is the one that creates an will sell you the bags of test strips.

It can be a little time-consuming but I think that's mostly in the first steps. When I first started this I tested hundred 40 different drawers of material. If there wasn't a reaction, any smell are curling, instead of focusing on the drawers later on that were showing signs of having some sort of acid in degrading process.

I would also note, even though some of these will go back, let me go back a couple of slides. This is an example of where there is a definite reaction. But a lot of the time it's very minor reactions. So I am thinking this could be because it's not releasing that much acid, even with the whole drawer, we are talking thousands of pieces of fish. The best fiche. Or the degradation has stopped. Whatever was going to happen has already happened. A reason to keep monitoring as well. There is a possibility this may not actually get worse.

And I think David and I are more than happy to answer your questions.

All right. I've been keeping track of the questions. We have a bunch of them that have already come in. While I'm reading the questions, the presenters are answering them. If you do have any questions for them feel free to put them in the chat box.

All right. The first question, can you get multiple colors on a single sheet of fiche quick

Can you get multiple colors, this is David? Do you mean like color film images as well as black and white images on a single sheet of fiche? The answer would be yes. Colored microfiche. It does carry, done like color film. The color of a document. If that's what you mean.

How do you recognize a silver and a [indiscernible] fiche quick

One of the things when I started this, I thought we will send lots of color pictures and it will be a easily identified [indiscernible] what I discovered is it's not that easy in some cases to identify get. The biggest difference in terms of deciding silver versus die azole. The silver fiche tends to be thicker. It feels thicker the silver image is very clear black. The space. Between the frames of the actual document images will be very black and dark. The emulsion side where the actual image layer is on the plastic, will be very dull and flat. The actual reverse side will be glossy and shiny. Trends -- the diazo uses a variety of different colored dyes to produce the image. They tend to be, the color dye tends to show up in the grid patterns, as a sort of yellow. You also see it in the header at the top. A yellow or bluegray. Sometimes even brown or oranges color brown. They tend to feel thinner because the image layer is as thick as silver highlight film.

Okay. How can I focus [indiscernible] the same question but I will ask it. What the base material of my fiche is short of my services guy having to remember quick

There really is not any way to eternal -- to tell the difference, that you can do without destroying it. The only test to determine if it's polyvinyl acetate or [indiscernible] is the test that Suzanne showed. If the plastic is fine, you're not really going to get any change with the test strips.

If it is modern polyester film, there is no concern about vigor Nagar -- vinegar syndrome. The only way to tell the difference is if there's degradation that would show up on the test strips. With the acetate film.

I have another question. Suzanne kind of answered it but I thought I would give you a chance to chime in. How do you dispose of microfilm?

How do you dispose of microfilm? That is a question I have not ever dealt with before. I would imagine you would not put it in the trash because the plastic will take an eon to decay. If there was a recycler to explain what you are throwing away, it is recyclable plastic. I think that would be something to talk about with whoever will take it away from recycling. I confess I would have to research that a little more.

I know there are some places that will recycle microfiche, in a proper manner dispose of them. This is a little different when it comes to the silver fiche. You seek codec would actually recycle to get the silver out of it. And some other places that would do that to get the silver out. There is a lot. You could take the entire cabinet probably and never retire on it. But the value of silver, if it goes up, there might be more places that would be interested in recycling that specific type of material. I have seen people cut up microfiche and make jewelry out of it. I don't know if that would be supported by GPO. [laughter]

I agree. You can recover the silver from recyclers. A process to recover the film thank you for the comment Suzanne on recyclers.

Not something I've had to deal with.

Next question, to what extent of having multiple sheets and one envelope affect the long-term preservation?

It has, this is David, it has more to do with the environmental issues. If you have fiche stored closely together in a packet, the dust can be an issue if dust gets into the packet. And you're always replacing the fiche in the packet. Or if the humidity is high., The sheets will stick together whether there in a packet or not.

The only other issue with the packet, that Suzanne raised, ideally the packets the fiche are in should be acid-free. And if you see them yellowing. Or that they are Browning around the folds where the adhesive was used to make the packet. They are probably worth replacing or even removing. And if you're purchasing new fiche, new packets. They should always be acid-free. And there is something called a photographic activity test which is a test that is done against anything that comes in contact with material like fiche which basically says the components of the paper in the packet are photographically reactive and will cause them damage.

Okay. A couple of questions on duplicating or digitizing microfiche. Are the best practices for duplicating fiche content in shared content repositories, is digitizing each image that way, that can be very time-consuming. Is there a way to digitize or copy the whole fiche out once?

Most fiche digitize, digitizing vendors will put it through a process where the scanner will look at each individual frame and reproduce it as a single fiche image. Part of the [indiscernible] of the process of fiche. Which is why not all scanning vendors can do fiche. You need specialized equipment to do it. I suppose you could have a scanner or film scanner reproduce the individual sheets. But I'm not sure you would be able to achieve the clarity and resolution you would want to find it useful afterwards. I think the digitization process requires a specialized equipment.

Okay.

I can answer that. There are scanners that will automatically move the camera from page to page. So it does go faster that way. I would also echo what David was saying about the resolution. When you are doing film it is incredibly high resolution that you do not get with digital. So you might think about looking at digitized, that you can't zoom in. You would get something similar is the microfiche because they're so much information on every single piece of the fiche.

Do you recommend keeping individual [indiscernible]

I don't think that would be practical. You would literally be doubling the size of the cabinet space required because of the thickness of the paper.

It is probably, not worth the effort to really do that.

Okay. You mentioned [indiscernible] may stop. Can we assist that by changing temperature or humidity?

[indiscernible] positive result which didn't show up. So we are wondering whether the product that would out gas, to release the acid had already done all it was going to do. Whether there was something entirely different going on to cause the distortion. So there is nothing really that you can do [indiscernible] the acid except lower the temperature. And try to lower the humidity.

So is there a way for individual loggers to digitize cold fiche on-demand. Part of the digitization process.

Whole fiche on-demand, say for a customer like the reader would come in and want this material reproduced.

Yes.

I am sure there is equipment you could purchase that would digitize the fiche. And produce one-off print or digital file, they could put up a thumbnail. That's not within my scope to recommend anything like that. I just know equipment like that does exist.

That equipment does exist in my library has some of it. One thing you can do, in a library alone or because they have trouble using a fiche, one thing you can do is begin digitizing yourself and

[indiscernible] to do that themselves, you can always keep a copy for yourself. As well as one for them. That you can actually build your own collection of the digitized fiche. Just one option. We did have someone come in who had hold roles of microfiche that was digitized. And also shared a copy of that with us as well. We did not break any laws.

Okay, question for Suzanne. When you put individual fiche in plastic bags for testing, what kind of bags did you use? Ordinary grocery store zipper -type bags?

You want to use a Ziploc bag, just regular plastic will work fine. If you are not sure about the bag, you could always seal one of the strips in it to start with to see if there's any kind of reaction. What I sometimes do, I use a lot of mylar. There is often access pieces of mylar. Often those are just the right size for making a bag for fiche. Mylar is a good material to use because it is neutral, it will not have any kind of reaction. Okay. We have run out of questions. I will tell you about the upcoming events and if anyone has any questions, to give you a few minutes to write them in. On May 10 at 2 PM do we have USGS library using the USGS image map and data product for information inquiries. On May 11 at 2 PM we have the US Army college information resources land power [indiscernible] educational treasures. May 15 at 2 PM we have collection stewardship, protecting the active rights of future and present users.

And more as you can see is also sent out the webinar survey. We appreciate if you took a few minutes to fill that out.

And let's see. There is a question about metal cabinets. What effect do metal cabinets have on fiche?

So, because of the rest issue, a lot of the cabinets you can get now are enameled. So there's no metal that's exposed that could rest and accelerate the process. You can check the insides of the cabinet. If it's [indiscernible] it will probably be okay. You might want to look especially, if there is a significant amount of vinegar syndrome going on. It really depends on the age, we probably have cabinets going back to the 1930s. That is something to keep in mind and to keep an eye on.

All right. I'm not seeing any more questions. I want to say Suzanne, and David thank you for presenting today on microfiche. Oh one more question.

[indiscernible] Michael foaming handbook, can you put the URL back up.

-- Microfilm handbook, can you put the URL back up.

That's to show one of the reasons I took that off, that was some of the first guidelines that were really put together long after a lot of film have been produced saying this is really the right way to do it. And if you realize, these didn't appear until the late 80s, various versions like the early 90s. And we have microphone microfilm and the libraries going back to the 30s. You can see before these guidelines were produced, looking at [indiscernible]. Microfilm where a pages cut off or other issues. The guidelines attempted to address. This is to show you some of the processes and guidance that goes into producing film. And fiche is really a subset of that production. The difference between the film and the fiche is really the head of the camera that's

producing the digital image. Essentially the production values behind the environmental setting for the camera to the way the documents are supposed to be handled, is the same for both film and fiche.

Okay. We will be sharing the slide deck after the webinar today so you will be able to get that link from the slide deck. Again we want to thank David and Suzanne for presenting today. This topic has been hot the last couple of weeks, quite a bit at the virtual conference. We appreciate you presenting for the community. Also thank you to all of the attendees. You had great questions and am looking forward to seeing you at the [indiscernible] webinar.

