

## AirSpace Season 1, Episode 11

### The Ninety-Nines

Nick Partridge:

Welcome to AirSpace. I'm Nick Partridge.

Emily Martin:

I'm Emily Martin.

Matt Shindell:

And I'm Matt Shindell.

Emily Martin:

Before we called it a glass ceiling, there was another kind of ceiling that women were trying to break through. Cloud cover.

Speaker 4:

It's world famous, Amelia Earhart. First woman to fly above the Atlantic Ocean.

Nick Partridge:

Amelia Earhart made that her mission, but she wasn't alone.

Matt Shindell:

In fact, she was part of a daring group of women who were walking on wings, flying under bridges, breaking altitude records, and racing across the country.

Emily Martin:

Initially, there were 99 of them.

Nick Partridge:

Today, the story of the 99's.

Matt Shindell:

We're going back to 1929 to the first women's national air derby, where it all began.

Emily Martin:

And we'll also hear what the organization is up to today.

Judy Shaw:

I wanted to be a bush pilot in Alaska, and my mother said no way dear, try nursing.

Nick Partridge:

It's all coming up next on AirSpace from the Smithsonian's National Air and Space Museum with help from PRX. When I arrived here at the museum, I knew Amelia Earhart principally as a pilot who disappeared. And one of the surprising things that I learned was just how famous she was as a pilot before she disappeared.

Emily Martin:

But I think what's also really interesting is that we today now think of Amelia Earhart when we talk about women in aviation. But around the time that aviation was becoming a thing and becoming, aviation was being populated by all these rock stars, Amelia Earhart wasn't the only rock star.

Matt Shindell:

Yeah, I think more than most of the women in aeronautics at the time, she really wanted to build a community of women pilots. And she really wanted to promote an agenda of getting more women into the cockpit and flying. In fact, she was the first elected president of the 99's when they were founded. Whereas, there were quite a few women flying at the time who weren't necessarily in it to break boundaries for all women, but were seeking their own personal fulfillment.

Nick Partridge:

So the first national women's air derby, this was the first official women only air race in the United States. It was a nine day race from California to Ohio in 1929. One of the unifying factors of all these women, apart from the fact that they were very talented pilots, is that the more I read about them, the more intimidated I am. Early airplanes were not as safe and standard as we become accustomed to in the modern era.

Matt Shindell:

Yeah you could say that they had pretty much no safety features. They were built just to accomplish the feat of flying in the air. Which itself was pretty incredible.

Emily Martin:

But you know, no GPS. Maybe they put a compass in there, but for the most part they'd hang a plum bub or their house keys or something in the front to kind of get a sense of like which way was down. There were no lights on the front of the airplanes and your wings were made out of canvas and no radios. So if they ever had any trouble, they had to land usually in some kind of field.

Matt Shindell:

Yeah.

Emily Martin:

And apparently cows really liked the taste of lacquer on the wings of these airplanes.

Nick Partridge:

I could see lacquer being tasty. Did anyone ever eat glue over the course of their life?

Emily Martin:

No.

Matt Shindell:

There's always the kid in class who eats paste. Yeah. That was, you?

Nick Partridge:

No.

Emily Martin:

Oh, I don't believe you.

Nick Partridge:

So there was no AAA. There was no I've got a flat tire and I'm not dressed to change it myself. Does anyone want to come fix this for me. You really had to be your own person.

Emily Martin:

Yeah. Absolutely. I mean there were not only not a lot of airports at this time and you're flying around in these tuna fish cans that are really pretty unreliable.

Nick Partridge:

Landing in fields trying not to be eaten by cows.

Emily Martin:

Right. But-

Matt Shindell:

This would make a great video game.

Emily Martin:

But it also means when you land in a field and you're trying to avoid getting your plane eaten by cows, you also have to try and fix the problem. Pilots in general not only had to be accomplished fliers, they also had to be accomplished mechanics. And there was a big to-do during the organization of the first women's national air derby because the organizers really wanted the women to fly with mechanics. Partly for their own safety, partly because they just didn't think that they could do it. And the women really fought tooth and nail to make sure that they could fly this derby solo because they wanted to make sure that the men weren't going to get the credit for their accomplishments.

Heather Taylor:

We were in sort of yellow journalism at the time. So often the women were referred to as petticoat pilots, as flying flappers, as Ladybird pilots.

Emily Martin:

That's Heather Taylor. She's the producer of the documentary Breaking Through the Clouds. The first women's national air derby.

Heather Taylor:

The first women's national air derby was a nine day air race that began in Santa Monica, California on August 18th, 1929, and ended in Cleveland, Ohio on August 26th. There were 20 women initially entered into the derby on race day and 14 ended up in Cleveland by the end of the race nine days later.

Aviation was at the precipice. This was sort of the apex of all that was happening between technology, between women's rights, between the manufacturing of airplanes. Women earned the right to vote in 1920 and that was building, there was a bit of a, the jazz age and the freedom and a bit of excitement really building at this time. And I think the women sort of got caught up and captured that for the country.

Speaker 7:

What a wonderful woman. And isn't she like Lindbergh. And there's her little plane for which she has broken all records and crossed the Atlantic in 15 and a half hours.

Emily Martin:

And initially didn't the organizers want the women exclusively to fly in sort of smaller, lighter planes because it was more appropriate?

Heather Taylor:

Right. Initially some of the rules the men suggested that the women fly only in light class planes, which meant smaller engines and smaller planes. They felt that was more of a safety issue for the women. And of course the women said, no, we can fly whatever you throw at us.

Emily Martin:

Can you describe how this takeoff works and what it was like on that first day of the derby?

Heather Taylor:

The first day of the derby, opening day was a mad house. It was over 30,000 people at the Santa Monica airport. People were sitting on the roofs of their barns going up to the airport. There was a long line to get into the race. It was just a crazy and people were bringing picnic baskets and little boys were flying paper airplanes and all kinds of festivities. You can almost smell the popcorn and the peanuts as you, and hear the whirling of the propellers as you're there.

Speaker 7:

All right, here we go folks. All right.

Heather Taylor:

They were all officially introduced.

Speaker 7:

I want to introduce some of the greatest flyers in the history of aviation, the women fliers who are going to be contestants in the great national women's air derby.

Heather Taylor:

So the first woman to take off would be Phoebe Omlie.

Emily Martin:

Can you kind of give us a picture of Phoebe as a person and her accomplishments?

Heather Taylor:

Yeah. Phoebe Omlie was, is so under-recognized and one of the most astonishing pilots. But in order to make money to buy an airplane and do all that you had to do, she did a lot of wing walking. So she walked on the wings of the airplane. She hung underneath with just her biting a leather strap underneath the airplane and just hanging underneath. I mean, she was insane. She did parachute jumping. During the derby, she was walking with a cane from a previous accident.

Emily Martin:

Really? Okay.

Heather Taylor:

So Phoebe Omlie was the first female pilot to earn AMP, which is basically a mechanics license. In 1927 is when she earned that.

Speaker 8:

Well, Marvel, I'm certainly going to go and try to win this race, but if I don't, I hope you do.

Speaker 9:

Well thanks, Poncho, and may your landing though be slow and low.

Emily Martin:

If you're going to talk about big personalities, I think-

Heather Taylor:

Poncho.

Emily Martin:

Poncho Barnes, right? Biggest personality of the group.

Heather Taylor:

Yeah. Poncho is a walking contradiction. She was raised in a very wealthy Pasadena, California in a very wealthy, Victorian home. Her mother wanted her to go to finishing school and be a proper young lady. And Poncho, from the moment she was out of the womb, was riding horses, standing up on the horses back and riding them. She was not one to be contained. And there was actually a prearranged marriage her parents made for to Episcopal preacher. And that didn't go over well.

In fact later, when Poncho had sort of come into herself and established who she was, she was known for her swearing and her short hair and her smoking cigars and being as outlandish as... She was as outlandish as she could be. But she had a heart of gold and was always helping people. But at one point when her husband, the Episcopal preacher, who was administering to some of his parishioners in ways that were not maybe Christian-

Emily Martin:

Yes, that is a euphemism. It is the euphemism you think it is.

Heather Taylor:

Yeah. She would wait til the Sunday services and buzz the church.

Emily Martin:

I love that part. It's probably one of my favorite stories about her. What are some of the expectations of these female pilots?

Heather Taylor:

Right. So in some ways the women in the derby were looked at as a novelty. One of the big things in the air race that was always commented on in the papers or in the radio was that these women were wearing pants. What they wore and how they looked was reported on way more than how they flew.

Emily Martin:

Yeah. I mean, that's nothing... Nothing's changed, right? I mean, hashtag ask her more, right? I mean, that's a big issue still these days. And the women weren't really just facing the dangers of the elements, the dangers of early aviation, and the challenges that came along with simply having early airplanes. Right? But there was this issue of sabotage. It was a really big player in this race.

Heather Taylor:

Sabotage was a big issue in this race and there's a lot of speculation. The second day of the air race, there were four accidents and one of them resulted in the death of the pilot. On that same day, Bobbi Trout crashed and in about the same area near Calexico. They said she ran out of gas, but she was an expert in gas maintenance. And she fueled up in San Bernardino.

Thea Rasche had also landed and had dirt in her gas tank. You know, engines weren't super reliable in 1929. So you can give a reason for every one of these accidents, but when you put them all together, and again, we didn't have NTSB at that time.

Emily Martin:

So Louise Thaden won the race. And a few months later, the 99's held their first meeting. How did this race precipitate the formation of the 99's?

Heather Taylor:

There's a legend that the women gathered on the second day after they arrived under the bleachers and said that we need to form an organization. We've had such a good time and this has been such a success that we need to keep supporting each other as women pilots. They had their personality, their guts, and each other.

Speaker 10:

The one thing that stands out in this race and that is all the girls are good sports. It's been a pleasure to be in it to meet the other girls.

Heather Taylor:

There are definitely each of the women has sort of a different variation of what happened and how it started, but the genesis was most certainly the first women's national air derby. And almost all of these women were charter members of the organization.

Nick Partridge:

Wait, were there 99 original members or were there 99 people that answered the call to the original meeting?

Emily Martin:

99 original charter members.

Nick Partridge:

Yes.

Emily Martin:

Yes.

We talk about the film, the right stuff on this podcast what, every other episode, at least?

Matt Shindell:

Yeah it seems like it comes out a lot.

Nick Partridge:

It's a long movie. We're still on the first third.

Matt Shindell:

Yeah.

Emily Martin:

It comes up a lot. And when it was brought to my attention that the bartender in that movie is Poncho Barnes, I'm starting to think about, gosh, what her sort of aristocratic, Pasadena, California family would feel about her running a bar for a bunch of test pilots.

Nick Partridge:

If you're just picturing a bartender from Pasadena, California, I don't think you're getting the full character sketch.

Emily Martin:

I think if you think about a female pilot from Pasadena in California, you definitely aren't getting the full sketch.

Nick Partridge:

And if you haven't seen the movie, we're describing kind of an elder stateswoman even at that time who has this powerful, intimidating presence over, and I can't overstate how difficult this is to cultivate, test pilots at Edwards Air Force Base in the late 1940s.

Speaker 11:

Hey Poncho. I was looking at the pictures on your wall and I was wondering how come a fancy pilot like slick over there doesn't have his picture up there? What do you have to do to get your picture up there anyway?

Speaker 12:

You have to die, sweetie.

Emily Martin:

Well and Poncho is kind of really well known for her outlandish outfits in a lot of ways. So getting into some of these airplanes wearing a skirt or high heels, it was kind of really impractical. So as a woman pilot, they kind of had to figure out ways to make that work. And for most of them that meant wearing some kind of riding pants or jot hoppers or something in order to be really practical. But Poncho Barnes was really well known for not always wearing her pants just because it was practical for when she was flying. She actually wore them on and off the runway. The runway.

Nick Partridge:

Oh damn. All right. No, it took a second.

Emily Martin:

Nick just got there.

Nick Partridge:

Yeah, no, that's good.

Emily Martin:

Nick just got there.

Nick Partridge:

That's good. That's solid.

Emily Martin:

Thanks.

Nick Partridge:

That is a structurally sound joke.

Emily Martin:

Can I tell you that I did it. And then I realized it was a joke. I didn't even do it on purpose.



Nick Partridge:

We're going to take a short break, but stick with us. When we come back, we're going to talk about what the 99's are doing today. And by that, I mean, taking Emily on a discovery flight.

Emily Martin:

So guess what percentage of commercial pilots are women? Anyone?

Nick Partridge:

Is it 6% or is it under 6%?

Emily Martin:

I like this. 6.33% if you count helicopter pilots.

Nick Partridge:

Geez. That's really... Okay. Yeah. I don't have blinders on.

Emily Martin:

No seriously. It's about 6% of commercial airline pilots are women.

Nick Partridge:

6%?

Emily Martin:

6%.

Matt Shindell:

Mm-hmm (affirmative). And it's actually related to women pilots being barred from flying combat missions until more recently. The air force didn't admit women into pilot training until 1976. And they couldn't train as fighter pilots until 1993.

Nick Partridge:

So 6% of modern commercial pilots are women. That is a horrifying statistic.

Matt Shindell:

Yeah. And if you look at all licensed pilots, it's only 7%, which isn't much better.

Nick Partridge:

So clearly there is still a role for an organization like the 99's. What are they up to today?

Emily Martin:

Well, their role hasn't changed an awful lot in that they're still trying to promote women in aviation. They work really hard to foster their endowment, which they use to support scholarships. But it's not just about getting young women excited about aviation and maybe even pursuing a pilot's license. It's

partly driven by using aviation as a way of getting young women excited about a career that is space is air adjacent or space adjacent or STEM adjacent.

Matt Shindell:

So one of the things that the 99's do today is they mentor young pilots. They offer scholarships like Emily said. And they also organize discovery flights so that girls can have an opportunity to go up in a small plane and experience the excitement.

Emily Martin:

Yeah. Actually I was able to go on my own discovery flight thanks to the 99's. And while I'm not a small kid anymore, I've never been in a small single engine plane.

Judy Shaw:

I'm Judy Shaw. I'm in 99. I've been a 99 since about 2011 and thoroughly enjoy the company of other women pilots. There are so few female pilots today particularly because it's never been encouraged. I can remember back when I started, I wanted to be a bush pilot in Alaska and my mother said no way dear, try nursing or some other profession like that. And my first small plane, gee, would have been probably a glider. I just loved being in the air. Was just fantastic.

Emily Martin:

I met Judy at Leesburg airport, which is about 40 miles west of Washington, DC. She drove us to a hangar and opened the door to a little four seater airplane. They called it the Ferrari of planes because it has a very special feature.

Judy Shaw:

We are going to be flying in a Cirrus SR 20. Cirrus is a plane that has its own parachute. And if you ever get into trouble, there is a red handle in the ceiling that you just reach up and pull and it will land the whole plane. Okay, ready to get on board?

Emily Martin:

Sure. I love how the whole wall of this airplane hanger just opened up. Judy just pulled the airplane out by herself, the whole airplane. Then she drove her Prius inside and then they closed the wall of the airplane hangar, and now they're coming out of the little hobbit door in the side.

There was one more person with us, Justin Langowski. He's an instructor and he came along to help Judy keep her instrument rating current. If you're instrument rated, you can fly in conditions where there's no visibility. For example, when you fly inside clouds. Everything I want to step on to get onto this airplane says, no step.

Judy Shaw:

There's a handle-

Emily Martin:

There's a handle there. Jackpot.

Judy Shaw:

Put on your seat belts back there.

Emily Martin:

Yes, I am buckled in.

Judy Shaw:

The handle for the parachute is here.

Emily Martin:

Okay.

Judy Shaw:

If you ever need it, you just reach up and pull down with about 40 pounds of force.

Emily Martin:

Okay.

Judy Shaw:

And you will release the parachute.

Emily Martin:

We taxi to the runway.

Judy Shaw:

Frequency 125.05. It's about 4650, holding for release.

Speaker 13:

[radio chatter].

Judy Shaw:

Leesburg for traffic Cirrus. 826 Mike Sierra departing runway 17 Leesburg.

Speaker 13:

[radio chatter]

Emily Martin:

And we took off. Before you knew it, we were cruising over farmland and some new housing developments in the suburbs of DC. It was a neat experience being able to actually see sort of 180 degrees around you. The small plane actually had a lot of windows.

Judy Shaw:

The altimeter is set for 2998.

Emily Martin:

We headed for Culpeper. That's about a 40 minute flight. Judy wanted to go there because they have a compass rose that the 99's painted 15 years ago and it needs repainting.

Speaker 7:

Compass rose is essentially a compass painted on the taxiway usually. And for the 99's, it has our logo in the center. It's also got the cardinal points marked out on it. And it legally has to be surveyed so that it actually points North because planes are allowed to legally swing their compasses, as in align their compass in their plane by lining up with the compass on the runway. And plus it's kind of neat to fly over an airport that has a compass rose because you can see it very clearly from the air.

Speaker 13:

[radio chatter]

Emily Martin:

As we were flying towards Culpeper, Justin pointed to the screen on the dashboard that shows all the weather patterns. And he put his finger on this big red spot. And he said.

Speaker 13:

That's actually not good for us.

Emily Martin:

That's actually not good for us. It was a thunderstorm right in our path, potentially with a lot of lightning and we had to stay away from it.

Speaker 13:

Mike Sierra, we're seeing a cell just south of Culpeper. We're think about canceling IFR and returning back to Leesburg.

Judy Shaw:

Oh that's too bad. Oh well. Best laid plans. Mike Sierra is eight miles to the southwest inbound for landing. 17 we'll be over flying mid field.

Emily Martin:

A little while later, we landed in Leesburg.

Speaker 13:

Air speed. Pitch down increase power.

Emily Martin:

It was a really smooth landing.

Speaker 13:

That's how you do it.

Judy Shaw:

826 Mike Sierra clear the runway.

Emily Martin:

And we taxied back to the hangar.

Judy Shaw:

Oh, you ladies want to deplane?

Emily Martin:

We wiped bug smudges off the plane and had it refueled.

Judy Shaw:

Was the ride comfortable back there?

Emily Martin:

Yeah. I got a little green behind the gills towards the end, but yeah. I know. I know. I don't think it had anything to do with it the driver.

So we didn't see the compass rose, but with Judy, it's pretty clear that any day you get to fly is a good day. This is a woman who will meet up with some friends at the airport, jump into a plane, and fly to Pennsylvania for dinner. And then fly back. Basically, she just loves to fly.

What's your favorite part about it?

Judy Shaw:

It's actually being just above the clouds where you're free of the updrafts. But there's this puffy like cotton batten-y stuff all underneath you and you don't see anything else but blue sky and white. And I think to me, that's incredibly beautiful.

Emily Martin:

And Judy says flying is a lot more accessible to women and girls these days. In fact, the same morning we were at Leesburg airport, a group of girls from the museum's aviation summer camp were taking their first flight in a small plane.

Speaker 14:

When I was up in the air, it felt unreal.

Speaker 15:

In a car like you can go anywhere, but there are certain roads and paths that you have to follow and rules. In a plane, you can just go anywhere, in a circle, you could do a flip, you can do anything that you really want to do in a plane.

Speaker 14:

And it felt like you were just a giant in the middle of the air, walking around.

Speaker 15:

Buildings are like little toy buildings that you could build with Legos. And the car looked like little toy cars that you can buy for Toys-R-Us. So it was definitely like it's different from up there.

Nick Partridge:

And that's a very traditional way for someone to get into a lifelong pursuit of aviation. You read about all of the astronauts having taken one first flight and they can pinpoint someone landing in a field near their house and taking a few bucks and taking them up. And they were six or seven years old and then they're landing on the moon a couple of decades later.

Matt Shindell:

So Eileen Collins in 1995 was the first NASA female pilot to actually pilot a space shuttle up into space.

Emily Martin:

Did she bring anything cool with her?

Matt Shindell:

Yeah, she actually brought Amelia Earhart's scarf or one of her scarves. We can assume that Amelia Earhart had more than one.

Nick Partridge:

If she didn't, that's a whole episode.

Matt Shindell:

Yeah. Yeah. She refused to buy a second scarf.

Nick Partridge:

She carried mementos from early women aviators, all of whom were in the 99's on a couple of her flights.

Matt Shindell:

That's right. For example, she carried Bobbi Trout's pilot license with her and Bobbi Trout was one of the founding charter members of the 99's. She raced in that original air derby and she broke all kinds of records for endurance as a pilot.

Nick Partridge:

Her pilot's license was signed by Orville Wright himself. Right?

Emily Martin:

As were all the pilot's licenses at that time.

Nick Partridge:

Emily?

Emily Martin:

Yo.

Nick Partridge:

What did you discover on your discovery flight? What didn't you know before?

Emily Martin:

I didn't know the view could be that good. Because it's always that tiny little window, right, that you see in like a commercial jet where you're like, oh, I guess I can sort of see like by looking across this person's lap.

Nick Partridge:

You got the whole vista this time?

Emily Martin:

You get the whole vista. You get almost 180 degrees, which is pretty spectacular. I also discovered that being in a smaller plane does not make me less airsick. However, every time I meet somebody who can fly a plane, especially a female pilot, their story as to what romanced them into the idea of wanting to get their pilot's license, whether it be something practical or something really like special to them, they're some of the coolest people you'll ever meet.

And so I, not only got to discover a really awesome view, I got to meet another really rad person and fly in a very rad plane. And I'm incredibly encouraged that there is an organization out there like the 99's who are working really hard to encourage women and girls to pursue their pilots license. And if they don't pursue their pilot's license, just to get them excited about something, especially something that's in a field or might be in a field that's not generally female dominated.

Nick Partridge:

Did you catch the bug? Are you going to be a pilot now?

Emily Martin:

No. I'm going to be an enthusiastic passenger with lots of Dramamine.

Nick Partridge:

That's it. For this episode of AirSpace. We're working on our next episode now about the space agencies of other countries.

Matt Shindell:

Special thanks to our producer this month, Ruth Morris. The AirSpace team behind the scenes is Katie Moyer, Lizzie Peabody, Tarek Fouda, Jason Orfanon, John Barth, and Genevieve Sponsler.

Nick Partridge:

Special thanks to PRX and the Alfred P. Sloan Foundation, enhancing public understanding of science, technology, and economic performance. More information at [sloan.org](http://sloan.org). The young girls you heard right after their discovery flight were Kylie Hernandez and Brielle Purim. Archival clips from the first women's

national air derby are courtesy of Heather Taylor and Archetypal Images. You can subscribe to AirSpace wherever you get your podcasts. And please tell a friend, bring a wing mate.

Speaker 16:

All right, well Miss Omlie happy to be here. It was a tough flight today and I thoroughly enjoyed it. But last night wasn't so hard. It was just bad luck that I break a valve and had to sit down in a big field. And I [inaudible 00:27:48] a lot of cars and pigs and horses. But this morning we had to show all the pigs into a corner of the field and I think only inhabitants of Xenia came out and anyhow, it was great to get away and I'm awfully happy to be here and I've loved the air race.

Speaker 17:

From PRX.