SURFACE WEATHER ANALYSIS: WHERE IT'S BEEN, WHERE IT'S GOING

ORAL HISTORIES

MIKE SOLTOW
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WORLD WEATHER BUILDING IN CAMP SPRINGS, MD

MIKE SOLTOW: My name is Mike Soltow. My birthday is September 7th, 1986. And my hometown is uh, Thousand Oaks, California.

INTERVIEWER: Where did you study meteorology?
MIKE SOLTOW: I studied meteorology at the University of Washington in Seattle.

INTERVIEWER: How did you become interested in the weather?

MIKE SOLTOW: Um, basically by moving to a place that had weather. Um, I mean, I was kind of interested as a kid, but weather came up so little in California I, you know, never really picked up on it. And then I move up to Seattle and, you know, stuff starts to happen and I get excited. You know, just decided I wanted to study it so...

INTERVIEWER: Okay. And how long have you been with the Weather Service?

MIKE SOLTOW: Been with the Weather Service for, I think, about three years. Yeah, about three years. 'Cause I started when I was in school as a SCEP student in Seattle and um, was at Elko for a year and a half and then came here (*HPC*) last November.

INTERVIEWER: Alright Mike, so going into surface analysis. Um, can you give me a definition of surface weather analysis?

MIKE SOLTOW: Um, probably not a formal definition but um, I, I would say it's basically just sort of mapping out what's going on in the atmosphere right now at the lowest levels, the surface. Um, so our job is just to draw, you know, boundaries between air masses, fronts, high and low pressure systems, and then um, if we can do any sort of smaller scale analysis. Whether it be, you know, thunderstorms, outflow boundaries, you know, things like that.

INTERVIEWER: And why do you think surface analysis is important to the field?

MIKE SOLTOW: Um, I think it's very important because those features have um, uh, you know, a great effect on the weather that's going on. So it's really important to know where they are at that moment if you want to try and forecast what's gonna happen in the future. Um, you know, you can't just rely on models. You gotta go on what's happening in the atmosphere.

INTERVIEWER: And who are the main users of surface analysis charts?

MIKE SOLTOW: Um, the field might be one of the main um, main users. But anyone who has an interest in meteorology is gonna be using the charts. Whether it be just the casual, you know, weather nerd or, you know, aviation interest might have uh, you know, interest in that for wind

shifts or things like that. So there's, there's a wide variety of users.

INTERVIEWER: Do you use it?
MIKE SOLTOW: Uh, yes. I do sometimes. When I want to see uh, you know, what's, what's coming our way, uh, especially if I've been off for a while. I'll, I'll check the charts and see what's going on.

INTERVIEWER: Alright. You work the surface desk, so after the obs come in, what's your procedure or methodology in creating the surface map?

MIKE SOLTOW: Um, well first I'll sort of step back and take a wide um, sort of a wide angle view of what's going on. See if I can just make a rough placement of any sort of fronts and, you know, just, just basic stuff like that. And maybe using the previous analysis as a guide. And then I'll start, you know, just zooming in and getting more detailed. And I'll start looking at the obs, different model charts. Um, you know, whether it be looking at moisture convergence, thickness, things of that nature. Just all of the basic mass fields that the models give us. And then um, yeah, just sort of go section by section and try and uh, you know, place the features.
INTERVIEWER: How do you find a cold front?

MIKE SOLTOW: Cold front? Well, there's, there's different, there's different ways to find it. Sometimes they, they can be hard to find. Um, in the winter there's usually a pretty good temperature gradient and a wind shift. So a lot of times those are pretty easy to find. Um, in the summer, a lot of times, the temperature gradient is not that much. And the, the wind shift might even be um, sort of confounded by thunderstorms and things of that nature. So a lot of times you'll look for a dew point change. Um, you know, you might have to use pressure rises and stuff like that um, to find where the main trough is passing by. So um, it, you gotta look at a lot of different things together to really um, get a good picture where it's at.

INTERVIEWER: Okay. Warm fronts, I know, tend to be a little more challenging. So what do you, how do you do anything different?
MIKE SOLTOW: Warm fronts, they can be. I mean, in the winter you look for temperatures, again. And the trick there, I found, is not to put it too far north because you want it sort of at the southern ed-, edge of the temperature gradient. So that's, that's an issue that arises a lot in the winter. So that, that's what I try and look for. Um, in the summer, same thing. You just try and look for maybe more of a dew point contrast than a temperature contrast. Just cause you don't get huge temperature differences in the summer.

INTERVIEWER: Okay. And are there ever differences in opinion on frontal structure and placement?

MIKE SOLTOW: Uh, often. Often. Yes. In the winter, like I mentioned before, there are differences in opinion on where the warm front is often. Um, you know, some people place it further north. Others will place it further south. Sometimes it gets confused with a coastal front. So you can, you can have um, you know, arguments there. And, in the summer, sometimes you can get arguments of, you know, which trough the front is in. Whether it's in leading trough or is that outflow? Or is that the actual front? It, it can be confusing a lot of times. And because of that, you'll get a lot of different opinions on where it's at.
INTERVIEWER: For the unified analysis...
MIKE SOLTOW: Mm hmm

INTERVIEWER: ...you coordinate with?

MIKE SOLTOW: Um, for the unified analysis we'll coordinate with both TPC(*now NHC*) and OPC. Um, TPC does sort of the gulf waters and Mexico. And then OPC does the Atlantic and the Pacific. And um, so yeah, tho-, those are the main people we coordinate with.

INTERVIEWER: So you have while to go in the Weather Service. So what do you see as the next step in technology for surface analysis?

MIKE SOLTOW: Next step in technology for surface analysis... I don't know. I mean, um, better, maybe short range models might, might help. Like, um, upgrades and model sort of like the RUC becoming more accurate. 'Cause I'll, I'll use the RUC right now because it's a, you know, rapidly updating model. So um, you can get something more higher resolution and something more accurate. I think that would offer a lot of help to surface analysis.

INTERVIEWER: And have you thought about the future use of the surface analysis chart or the products that we'll be issuing?

MIKE SOLTOW: Um, nah. I can't really see a huge change, at least in the near future. Um, I mean, the surface analysis kind of is what it is. It's used, sort of, as a starting point for the forecast. And I don't think that's really gonna change. Because um, yeah, you know, despite what tech-, you know, happens in technology, there's always gonna be just the basic chart of what's going on right now, you know? Um, unless a model can somehow figure out where a front is which is, we're a ways off from that. So um, I think for now it's sort of, you know, it's going to be what it is for a while.

INTERVIEWER: That was my last question. Do you think the human analysis will ever be replaced?

MIKE SOLTOW: Yeah. It, it... The human analysis, I think, has uh, maybe even a longer future than the forecaster because there, there so many different things that a model can pick up on. You sort of need the human to decide which thing is which and you're going to need a pretty advanced computer to sort of figure that thing out so... I, I think it's one of the most important things we do here. Just because of the effects that the weather systems have, you know? Whether it be on temperature, winds, things like that. Um, can't really stress the importance enough of that. So just, you know, minor differences in placement of a front have a huge impact on the sensible weather so, you know, it's up to us to get it right and, you know, convey that uh, information in the field.