

the snow and ice is cleared. Or take a break from CoCoRaHS until spring.

your rain, snow or ice report. If it looks dangerous out there, maybe you should wait until

Speaking of ice, we've had quite a few questions about sleet lately -- what it is and how to measure it. We rarely get sleet here in Colorado, but it's something many of you see regularly. Sleet is precipitation that begins as rain but falls through a layer or layers of below freezing air on its way to the ground. In the process it freezes partially or totally into ice pellets -- not hail, but still little balls and chunks of ice usually no more than 1/10" across. It makes a clicking and clattering sound as it hits the ground. Sleet can be accompanied by rain, freezing rain and snow, making life (and your weather measurements) very challenging.

As for measuring sleet, you treat it the same way as snow -- measuring how much accumulated on the ground in your 24-hour measurement period (max depth at anytime during the day prior to melting or settling). Report that as your new snow amount. But also remember to measure the water content of what landed in your gauge and report that as your daily precipitation amount. That may be the water from a combination of rain, freezing rain and snow as well as sleet.

Good luck with your winter measurements. If you feel you need more training or review, here are links to our various training materials. I've come to really appreciate the short (and sometimes funny) snow training animations.

On-line slide show

YouTube animations

Written Instructions

Over the Hump

Winter solstice is (was) 10:11 AM MST on Saturday December 2013. It won't be noticeable for a couple weeks, but by mid January you'll already be able to tell that day length is increasing again. We'll be well on our way, seed catalogs in hand, to our next spring. Warming temperatures typically lag lengthening days by at least a month -- so if you don't like cold, don't get your hopes up too high quite yet. We'll be seeing bouts of mid-winter cold for several more weeks. In fact, some of the countries coldest outbreaks historically have come in late January and early February. Can hardly believe it now, but it was -61F here in Colorado on February 1, 1985. We got to drive over to Maybell to check that out and confirm the new state record.

When Conversation Gets Slow

Just a silly suggestion but if the conversation at holiday parties or after family Christmas dinners gets a little slow, maybe this would be a great time to bring up CoCoRaHS. With all the wintry weather that has and will be swirling across the country, this might be a great chance to recruit cousin Bill or Aunt Sally to join the CoCoRaHS team. I'll personally e-mail the first five or ten of you who successfully do holiday recruiting. Make sure your new recruit(s) types this in on the application form so I can trace it back to you.

CoCoRaHS Data

In case you wondered, your daily reports get used -- a lot !!

Weather forecasts, forecast verification, river levels, flood forecasts, print and broadcast media, climate research, agriculture, insurance and forensics, ecology -- and the list goes on and on. The heaviest use of our computer system is not you entering your data and viewing summaries and reports. It is users pulling data in large quantities for operations and research. Perhaps we don't emphasize this enough, but your data are being used EVERY DAY.

Website Slow?

Some of you have contacted me to let us know our website has become painfully slow. For some of you (especially folks on really fast connections) this may be true, and for many others it's not. We've been frustrated trying to figure it out for several weeks. We're still confused. It's not the database (it's working faster than ever). It's not the web server. It's not the DNS. We know many things that it's not. But unfortunately we still don't know what the problem is. The website works zippy on my laptop at home, and it's as slow as molasses on Firefox at the office. CoCoRaHS works great on Internet Explorer here in our office, but not for other folks. Anyway, I just wanted to let you know that we're all very aware of this problem and doing our best to solve this frustrating mystery.

Click on 'View Data' Sometime

There's lots more "stuff" on the CoCoRaHS website than you may realize. Explore the top and side menu bars sometime. I especially recommend the "<u>Maps</u>" and "<u>View</u> <u>Data</u>" There are many great summaries and data tabulations that you can customize for your area or anywhere in the country.

Don't Forget the CoCoRaHS Blog!

When you get tired of the local or national news, I highly recommend the <u>CoCoRaHS</u> <u>Blog</u>. Steve Hilberg's latest blog explores the water content of fresh snow and why the old "Ten (inches of snow) to One (inch of water)" is only a rough guide and is actually far from the truth in many areas.

Did You Receive a Trace?

Reporting a 'T' for Trace in your daily precipitation field, believe it or not, can be of great value. Think of a meteorologist who may be seeing virga (precipitation that evaporates before it reaches the ground), and wonders if any of that rain (or snow) actually did reach the ground or not. If you are at your location, and you happen to see a raindrop or snowflake - even if it doesn't land inside your gauge, and even if it is long since evaporated by the time of your observation the next morning - it is still a trace. Of course, if you are not home to witness it, all you can do is report a 0.00, and that is fine. In meteorology, a trace is precipitation that is not measurable, so even 1000 traces at a given location still does not add up to .01, but again, if you see it, it is a trace.

CoCoRaHS Fundraiser

As you know, we're in the middle of our annual fundraiser. Thanks so much for all of you who have made donations this year. We appreciate it greatly.

Many of you have asked why we have to do fundraising and how donations help support CoCoRaHS. A volunteer program like CoCoRaHS is very cost effective but not free. In recent years we have benefited greatly from financial support from the National Science Foundation (NSF), the NOAA Office of Education, some of the users that rely on our data, and even from sponsors in Canada. These funds, in combination with donation support, help cover the salaries of our small staff, our website and database hosting and development costs, communications and operating the CoCoRaHS help desk. They support the development of all the training and education materials and outreach we provide.

The NSF and NOAA assistance that have supported the staff, coordination and web development costs to launch a national precipitation network, are coming to an end this next year. Donation and sponsor support will become even more critical. So that's why

we do fundraising.

Click here if you would like to donate.

So if you can spare a few dollars to help "Crowd-fund" CoCoRaHS, it will certainly make a difference. And if you happen to have \$50 you've been saving for a rainy day, we'll send you a CoCoRaHS thunderstorm t-shirt that will certainly help you stand out in your neighborhood :-)

All is Calm

Christmas will be quiet at the Doesken house as our kids and our one grand child will be elsewhere again this year. For now the animals are fine. We had a little digestive episode with our younger Aussie, but that passed :-) But we'll be warm and cozy with our dogs, cats, horses, chickens, geese, and who knows what else. And there will be plenty to keep us busy.

"He's My Brother"

This is my most memorable journey home for Christmas. I've shared this story before, but only to our kids and immediate family. Most of us who have done much holiday travel end up with a few good stories and adventures to share. What follows is my most memorably holiday travel story. It happened exactly 40 years ago today – December 22, 1973. I've not shared it much except with my immediate family. My memory isn't as sharp as it used to be, so I thought I better share this now before the details begin to slip away.

This is the story of coming home to Royal, our tiny farm town in east-central Illinois. It was my senior year at the University of Michigan in Ann Arbor. Holiday travel was rarely routine. I typically took the bus from Ann Arbor with a transfer in either Indianapolis or Chicago. It seemed that I always ended up stranded in some empty bus station other than my intended destination and often after midnight. Invariably my father would have to drive at least 100 miles to rescue me and bring me home. Sometimes I was able to use the "Ride board" in the Student Union to find someone driving in my general direction willing to take an extra passenger in exchange for gas money. One year I was the 3rd person in a two-seater sports car – memorable, but not comfortable (I'm 6' 5"). There was even a year when my finals ended on Dec 23. I splurged and bought plane tickets. That "splurge" ended up a total disaster as the final leg of the flight – Chicago to Champaign – was cancelled due to fog and no other transportation options were available -- that's a whole story in itself.

The most comfortable and secure way to travel then was by train. There was an Amtrak station just a mile from our Ann Arbor apartment, and I could get to within about 25 miles of home on the Illinois Central line. The train was more expensive and not always on time, but with my height and long legs, trains were by far the most comfortable form of transportation. I could read, sleep, or just look out the window, day dream and watch the weather. The train line cut across the "lake effect snow" belt of SW Michigan and NW Indiana, so things could get interesting there this time of year.

Getting ready to come home

December 1973 was my 4th and final year at the University of Michigan. I would be

graduating in May, so this was the 4th and final time I had to figure out a good way to get home for Christmas. I knew in advance that my last final exams would be on December 21, so I planned well ahead of time to make sure that my travels home would go smoothly for once. Too often in the past my dad had been forced to come to my rescue in some odd place and a very inconvenient time. He was over 60 now so I didn't want to bother him this time.

I made my train reservations weeks in advance and even paid extra for a reserved seat on the Detroit to Chicago train for the morning of December 22. Then in Chicago I would transfer to the express train from Union Station to Champaign, IL – the closest stop to Royal. I would miss the Chicago rush hour traffic and be home early.

It had been a particularly interesting semester at school. My grades had been good and I finally got to take a couple of interesting classes including a psychology class where I had studied tornado dreams (that's also a story for another day). I had three part time jobs so I even had some cash in my pocket. I lived in an apartment with 3 other classmates. We had all become close friends, prepared good meals together, shared all expenses and were enjoying our last year as undergrads. We were all in good spirits as the semester ended.

Winter weather

As you might expect, weather played a very important role in this story. A slow-moving December snowstorm had just dropped 12"-16" of snow across central Illinois on Dec 19th – and that's a big snow for that part of the country. There was no rain, sleet or freezing rain and not much wind with the storm (again, quite unusual), so the snow laid deep and crisp and even. My parents rarely ever called during finals week, but they just had to call to tell me about all the snow back home. The same storm arrived in Ann Arbor one day later on the 20th when we got an all-day snow totaling 12". I had 2 final exams on the 21st followed by our Meteorology and Oceanography Department's Christmas party. I managed to squeeze in some last minute shopping and then packed for the trip home late that evening. I usually rode my old blue and chrome Schwinn Corvette bicycle that I had gotten when I finished 3rd grade (I was already tall enough then to fit on a full sized bike). But it was too cold and the snow was too deep for biking. So I was trudging through deep snow everywhere I went – loving it.

I got up early on the 22nd, finished packing and squeezed a few presents in among my clothes. I put on my heavy winter coat, wrapped a long scarf around my neck and awkwardly dragged my big blue suitcase down the street. It was about 13 blocks from our apartment on South Packard to the train station. I didn't have the greatest winter clothing, and I remember numb fingers and wet feet by the time I got to the station. The fact that I was wearing my basketball shoes probably didn't help. I got to the station in time, but with only minutes to spare.

The trip got off to a fine start as the train from Detroit pulled into Ann Arbor almost exactly on time. That meant my chances of a clean connection in Chicago and a convenient late afternoon arrival in Champaign seemed assured. I got one of the last window seats – and with great leg room, too. The train pulled out of the station westbound to Chicago. At last I could relax, enjoy the winter scenery, and began looking forward to our family traditions at home, with the added pleasure of deep, fresh snow.

Chicago

I don't remember much about that train ride, but I do remember the approach to Chicago. The train tracks went right through the Gary, Indiana steel mills which were still cranking out smoke, soot and steel then. You could look right into some of the furnaces from the train windows and literally feel the heat. Then there was the southside of Chicago with block after block of abandoned, boarded up and burned out buildings. My mom had gone to high school near there in the 1930s, but the neighborhoods had changed drastically since my grandparents had moved away more than 30 years previously. Then the train completed the curve around the south end of Lake Michigan and disappeared into darkness as it completed its underground approach to Union Station from the south. The train arrived right on time, which meant I had two full hours to stretch my legs and explore the area (dragging my suitcase, of course). I needed to catch the express train known as the "Illini" - a train that carried many U. of Illinois students back and forth to their homes in and near Chicago. The "Illini" was scheduled to depart at 3 PM. My dad would be there to meet me at the station around 5 PM and we'd probably stop on the way home to pick out a Christmas tree and maybe stop for a quart of fresh eggnog. That was a treat we both loved. Then I imaged we would talk, as we often did then, about the weather and, of course, about the unusually deep snow. When I went away to college I had given my dad a very expensive (nearly \$20 then) clear plastic high capacity 4"-diameter rain gauge made by Taylor Instruments so that he could make accurate precipitation measurements when I was gone. Indeed, he kept diligent records. Little did I know that 40 years later, we'd still be using the same type of rain gauge in a program called "CoCoRaHS".

I quit daydreaming and did a little exploring. I came up out of the underground cavern of the train level to the immense (or so it seemed at the time) Great Hall of Union Station. I had been there before, but I couldn't help but just stand gazing up and gawking. I was mesmerized by the huge clock, the Christmas lights and decorations – and the huge masses of people constantly coming and going. The place was packed with people of all ages and of many colors. Despite snow and frigid cold, shoppers were out in droves carrying large sacks of wrapped packages.

As a "country kid" I was intimidated by the big city, but I ventured outside dragging my huge, old blue suitcase (no wheels back then) I caught a peek at the nearly completed "Sears Tower" – the tallest building in the world at that time. I saw people eating in large restaurants, but that was not on option for me on my college-student budget. I had saved a peanut butter sandwich, an orange, and a few leftover Christmas cookies. That would be enough, I hoped, to get me home.

The city was immense and amazing. Each street formed a canyon between the surrounding giant buildings. Cold winds whipped and swirled through each canyon. After being buffeted by face-hurting winds and stinging cold, I understood why it was called the "Windy City". So I headed back inside – eager now to get warm and head south towards home.

Around 2:30 PM I again reached the caverns beneath Union Station where tides of people washed in and out with the rhythm of the commuter trains. Down below by the tracks it felt warm, but hardly safe. This was such a familiar territory for so many Chicagoland commuters who passed through Union Station every day. But for me, it was foreign and intimidating. I found myself constantly checking my back pocket to

make sure my wallet was still there – and my train ticket. Fortunately, I knew where the "Illini" would board and what platform to be waiting on. I got in line, expecting that in just a few minutes I'd be in a warm comfortable seat on my way home.

We stood. We waited. We watched and wondered. We fidgeted. 3 PM came, then 3:30 -- then 4 and finally 4:30 PM – still no train. One commuter train after another pulled in, quickly loaded and immediately pulled out. Thousands of passengers moved past us – headed home. And still we waited. An agent finally announced the train was out in the nearby switch yard just south of the station and would be arriving shortly. But it never came. (We heard later that the deep snow and near-zero temperatures had frozen the train to the tracks and they couldn't budge it.)

Bad Situations

While waiting and worrying, I witnessed an unforgettable scene – one that haunted me for years after. An old woman carrying bright colored and neatly wrapped Christmas packages slipped while stepping from the adjacent platform onto one of the many commuter trains. People rushing and pushing to get on didn't even notice that her foot had slipped down between the platform and the train car. She screamed, packages fell - --- and others just pushed past her making sure they didn't miss their train. Finally, just as the train door closed one man grabbed her under the armpits and pulled her back up onto the platform. Her leg or hip appeared broken and she screamed in anguish and pain. The train left without her. Her packages were trampled. Nearly everyone just looked away as if she wasn't there. Nothing like that would ever happen at home. I wanted to cry. Despite being surrounded by thousands of people, I felt totally alone and afraid.

Getting late

By now it was almost evening. I had a ticket for a train that would never come. All of us waiting for the "Illini" eventually abandoned our platform to make alternate plans. The next train was sold out --- twice over. I pondered alternatives. Did I know anyone nearby? No. I found an empty phone booth and took some coins out of my pocket to call the Greyhound station. It was in walking distance. But alas, the agent informed me the next open seat to Champaign was in 5 days.

Just then (about 5:30 PM) there was a buzz in the station. The giant Illinois Central train, the "Panama Limited" backed into the station. Car after car after car -- stretching the entire length of the half-mile long platform – moved slowly into loading position. The "Panama Limited" was scheduled to leave around 6 PM headed for Memphis and then on to New Orleans arriving the next day. (BTW, that train was renamed the "City of New Orleans" the very next year in honor of the train described in a song of the same name written by Steve Goodman and made popular by Arlo Guthrie).

We had watched from our platform as people had begun lining up for the "Panama Limited" already around 4 PM. Now it was a mob scene – throngs of people loaded with bags and packages – many with small children – all very eager to go home for Christmas to be with their cousins, aunts, uncles, parents and grandparents in the South. Ticket takers were positioned at the head of the platform, and agents and conductors were now standing at each train car. Chains hanging from iron posts were designed to help direct and control the movement of the people preparing to board the train. But

good intentions quickly gave way to total chaos as a crowd of a few thousand people (far more than could fit on the train) suddenly rushed past the ticket takers toward the empty train cars. I had gotten close enough by then that the crowd swept me along like a twig in a rushing stream. I did not know where I was going, but I couldn't stop or go back. Parents lifted their small children high in the air to keep them from being crushed. I did know that if I somehow got on the train, it did stop at "Champaign-Urbana", so if I could somehow get on, I could still get home. But I had no ticket and no other plan. I had often been self-conscious about being so tall and skinny (over 6'5" and barely 170 pounds then), but this time it was an advantage as I could see over the crowd that was pushing hard on my chest -- and I could breathe. I felt sorry for the many shorter and rounder people below me. I held on dearly to my suitcase and tried not to stumble. Finally the movement of the crowd slowed and briefly stopped. I ended up about halfway down the platform and not too far from one of the passenger cars. Now the motions change. Conductors cried out for order but people did not listen. Masses funneled from the platform towards each open passenger car door. Agile people stepped quickly up and into each coach hugging their bags and packages. For most it was a struggle. People with tickets boarded, along with people without. I was first pushed towards one of the coach doors, but then the mass momentum pushed our group well past and toward the back of the platform. Others got aggressive and pushed and shoved back towards the door. Some held their bags or their children up over their heads. From my rural experience, I did not know how to push and shove and it didn't seem right. I waited politely. First dozens and then hundreds boarded each car. Where were they going? How many could fit? Would there be a place for me? Soon that became clear. There was no room. The train was full - completely full - dangerously full.

Conductors, fearing for their own safety, began yelling at the people and trying to shut the train doors. The conductor closest to me managed to close the bottom half of the door section – pushing some older women to the side in the process. At that point, people quit straining and the crowd quit moving. The crowd noise stilled. No one else could load. A sense of despair came across the rest of us. We would not be getting home for Christmas.

The Young Man

Just then, something odd and totally unexpected happened. To this day, I have no explanation. A youngish man – maybe 30 – professional looking and surprisingly relaxed considering his recent struggles – grabbed the arm of the conductor as he was attempting to shut the upper half of that large door. "Stop!" the man shouted out as he pointed in my general direction. He pleaded with the conductor, "Help me pull him up – He's my brother!" I looked back and around me, wondering who this man was calling out to. But folks moved aside, made a narrow path, and encouraged me to move ahead. It was me he was calling to. Both the white young man and the black conductor grabbed my arm and pulled me up while I kept a grip on my suitcase. In an instant, I was lofted 6 feet straight up and was on the train. Immediately, the conductor closed the top door and latched it shut. I, perhaps mercifully, could not look back to see the faces of those left behind. Immediately I was whisked into the last remaining spot to stand. It was the mens bathroom at the back of the coach. It was not roomy at all, but somehow at least 15

people were squeezed inside. There were whites and blacks, men and women – all in the mens room – and all very relieved to be there. It was warm. It felt safe. We all felt strangely unified like large families that truly love getting together.

For a long time, the train did not move. It got hotter and the air staler. People shorter than me wondered how long they could breathe. Some uneasily smoked cigarettes – adding to the discomfort. But just as we thought we couldn't survive much longer in these cramped quarters, there was the hiss of the brakes releasing and the clank of the couplers as the engines began to pull. The air quickly cooled as the train began moving – especially as we exited the tunnels returning to the clear, snowy night on Chicago's south side.

New Friends

This was not the end of the story. It should have taken less than 3 hours from Union Station to the Champaign-Urbana stop – but it took half the night. The train bogged down in the switching yards and had to be pushed by extra engines. There were more passengers waiting to board at the Homewood station, but no one was allowed. We had a long stop at Kankakee as ice had to be chipped from around the wheels and couplers of some of the cars. I don't recall any food, but I don't remember being hungry, either. People shared what they had freely.

That's when we discovered our standing room only "seats" in the mens room were amazingly comfortable compared to some of our fellow passengers. Dozens of people who also felt "lucky" to be on that train were standing in the unheated covered walkways between coaches. Periodically they forced their way into the restroom for some temporary warmth to avoid frostbite. They warmed their hands and thawed some of the crusted snow from their clothing and feet before returning to their "Reserved" standing places. Their faces and eyebrows were caked with snow that blew up from the tracks whenever the train gained speed. But like us, these passengers were also cheerful – for they, too, were going home.

Those 6 hours on the train passed quickly. Just as the Steve Goodman/Arlo Guthrie song said, there were paper bags and they did get passed around. It was a strange yet satisfying form of communion and we all felt incredibly unified that cold night. It felt the way Christmas is supposed to feel, but so often doesn't.

Almost home

As the train eventually gathered speed heading south towards Champaign-Urbana and then on to Memphis and New Orleans, there was a certain urgency to exchange names and contact information – as if we might somehow see each other again. All we had to write on were pieces of toilet paper. We wrote down our names and address on toilet-paper scrolls. I'm sure I kept that toilet paper with the names of my new friends that I would never see again. It's probably somewhere with my college mementos – but I never found it. 40 years later I find myself wondering if that night really happened – but I know it did.

I did get home that night. Sometime after midnight the trained pulled into the Champaign-Urbana station. I've forgotten the rest. My mother and father somehow knew to be there. We hugged and drove home. Temperatures began warming up later that night, and dense fog formed from warm advection over the frigid snow surface (I

looked that part up in the weather records). Mostly I remember the relief and the sense of family. And then I remember wondering and aching for the people who hadn't gotten to go home, and especially that woman who fell on the platform and was trampled. She had managed to buy gifts for her loved ones only to be trampled and broken. It was so wrong. Christmas is like that I suppose – so beautiful and yet sometimes so painful. The next morning came almost instantly after a short nights' sleep. The snow was still deep and the fog thick – magical beauty as long as you didn't have to drive in it. There I was back in the slow life and strong traditions of our small German farming community as if I had never left. Everything seemed just the same as it had been every year of my life – the food, the decorations, the church services, the children singing. Everything seemed the same – except for me.

Who was that young man?

And who was the man who claimed me as his brother and who pulled me into the train car that night so I could be home for Christmas? I never found out. There is some chance that one of you reading this story was on that train that day or was at least passing through Chicago and Union Station. I'd love to hear from you.

Merry Christmas to all,

Nolan Doesken and the CoCoRaHS Team Colorado State University

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