

BUREAU OF LAND MANAGEMENT

Meet the Editor of the Next Edition

With Ron Scherler and Bob Dahl

2009



CADASTRAL SURVEY

Meet the Editor of the Next Edition

>>*R. Scherler:*

Now let us talk to the man who did the actual editing, Mr. Bob Dahl. Before moving to the Washington Office, Bob and I worked together in Oregon/Washington Office for several years and I can think of no one more qualified to be the chief editor of the Manual than Bob Dahl. Bob tell us a little bit about your survey background.

>>*B. Dahl:*

Well Ron thank you for that and it is a real honor and privilege to be here today at the BLMs National Training Center. I learned what a plumb bob was from the Forest Service in 1969 and I kicked around as a survey tech and a transit man for a private land surveyor long enough to realize that there is a little more to it than cutting brush.

I have a Bachelors degree in Surveying from the Oregon Institute of Technology. I am a licensed land surveyor in California, Oregon and Washington. I am a member of the ACSM PLSO and I have been surveying or going to school in surveying since 1972.

I joined the Bureau of Land Management's Western Field Office in 1977 and I spent 21 field seasons conducting dependent resurveys up and down the west coast. In 1998, I transferred to the BLMs Washington Office where I currently am. I work on budget, organization, administration, education and policy issues.

>>*R. Scherler:*

So cutting brush on the Oregon coast in the rain did not get you away from surveying. You decided to be a surveyor anyway.

>>*B. Dahl:*

Yes and some would say I am a little slow because it took me five or six years to realize that.

>>*R. Scherler:*

So Bob, what are some of the more interesting surveys you have worked on over your career with BLM?

>>*B. Dahl:*

Well Ron, I have been so lucky to have an opportunity to work on so many interesting surveys with the BLM. For example, I had an opportunity to work on Old Chief Joseph Gravesite and Cemetery in Northeast Oregon. In there it gave me an opportunity to learn about highway right a ways, acquisitions, the documents and files that go into it, historical highway acquisition as well as the right a way issues that come up and the location of them. Old Chief Joseph also gave me an

exposure to overlaps in the public land survey system and overlaps include survey overlaps and patent overlaps.

It is interesting when you begin to think about the public land survey system it generally is a system of simultaneous conveyances and there are not junior/senior issues. However, when you get into overlaps in the public land survey system then you have began to realize that the sequence of how things happen sometimes will help determine what are the controlling monuments and where the boundaries are located. The other thing that Old Chief Joseph's job gave me an opportunity to learn about is unwritten rights. In fact, the government in that case asserted adverse possession of private land in adjoining this cemetery.

>>*R. Scherler:*

Which also gave you an opportunity then to work with the solicitor's office very closely, is that correct?

>>*B. Dahl:*

Yes. There is always that line that we all know, between what survey activity and what is a legal activity. Often times there is an overlap. In this case because we are dealing with unwritten rights which we needed surveys to locate the title boundaries as well as the youth boundaries as well as to bring in what facts the attorneys needed to do to know how to apply the law, so that was a fascinating opportunity to be able to work with the attorneys.

>>*R. Scherler:*

Okay and I know you have a lot more so tell us about some others.

>>*B. Dahl:*

I had an opportunity to work on the expansion of the Redwood National Park in Northern California, which was for the National Park Service. That gave me an opportunity to learn about hiatuses within the Public Land Survey System, which of course the system was not intended to have hiatuses, which are gaps between surveys. But in fact, they have happened.

The other thing that the Redwood's gave me an opportunity to learn about and study is fraud and fraudulent activities within the administration of the Public Land Surveys over our 200+ year history, quite a fascinating opportunity to learn about criminal syndicates operating and abusing the public lands.

>>*R. Scherler:*

Now we are talking high value land there, is that correct?

>>*B. Dahl:*

That is correct. We are talking old growth Redwoods that the government purchased and of course, if the landowner did not have title to it then the government did not have to pay for it.

>>*R. Scherler:*

So this is big time value here.

>>*B. Dahl:*

Big time value.

>>*R. Scherler:*

So what are some others?

>>*B. Dahl:*

I had an opportunity to work on the San Juan Islands in Northwest Washington at Friday Harbor and that gave me exposure to being used to the system of the General Land Office of originals, duplicates, and triplicates, plats and field notes. What had happened in Washington in the late 1880's was the Surveyor General's Office burnt down, which burnt the originals that were held by the Surveyor General's Office.

But the system has the Secretary's copies in Washington D.C. so then the commissioner of the General Land Office sat the clerks down and used the duplicate copies, the Secretary's copies, and they transcribed field notes and plats and then they set them back out to the Surveyor General and the County Surveyor.

To turn it around, what happened is, believe it or not those Scribner's transposed some bearings and distances along the meander line which caused everything to shift and by the time we were out there to survey a military reserve there was at least five local representations of where their single boundary was. We were able to trace that confusion back to a transcription error. The other thing that job gave me exposure to is while the surveyor does provide a survey solution to many things but often times I found that the survey solution is not necessarily the final remedy to a situation.

I find that sometimes for different reasons a legal remedy or a legislative remedy to a process but our role as surveyors is to provide, put in front of the decision makers a survey remedy. In this case, it actually ended up being a congressional legislative solution.

>>*R. Scherler:*

You also had to work with the state of Washington because it was the University of Washington who was using the property at the time so there was a lot of people involved in that final solution.

>>*B. Dahl:*

Yes, with the University of Washington, their concern was they had been deeded this abandoned military base from the government but the government deed conveyance contained a reversionary clause. If this land was not being used for education purposes then it would revert back to the government.

As you probably know Ron, when you have five boundaries out there, there are some houses that are on different portions of these boundaries. So if the land is being used for a private house then it is not being used for educational purposes. So the University of Washington was very interested in this survey.

>>*R. Scherler:*

Good. That is solved. So what are some others?

>>*B. Dahl:*

I had a chance to work up and down the state of California from the north end to the south end. I had a chance to be exposed to Mexican and Spanish Ranchos and that process of how that whole land grant system was incorporated, integrated into the Public Land Survey System. It is not always a smooth, clean fit but it is a very fascinating study. It becomes a form of metes and bounds surveys that we deal with.

The other thing with running up and down the state of California I had the chance to do many surveys on Indian Rancherias. Typically, these are small lands reserved for Indian tribes in California. It gave me an opportunity to work with Indian people, to begin to understand the Bureau of Indian Affairs records system. So that was a real learning experience, very fascinating for me.

>>*R. Scherler:*

It seems to me like each one of those seems to have a unique history that really influences what happens in your survey.

>>*B. Dahl:*

That is what makes dependent resurveys so fascinating. Each one of these jobs is a study in the micro-history of that area. Most of our local community history, you can get a good sense of the people and the use of the land, and the evolution of that area by studying the use of the land, the boundaries, the deeds. It was an excuse. I got paid to learn American History. That was good.

>>*R. Scherler:*

Good.

>>*B. Dahl:*

Another job that I did that was, every jobs an education in itself. Up on the Alcee River and the Oregon Dunes along the Central Oregon Coast. I had an opportunity to be exposed to the concept of bona fide rights as to location. It came up in the context of what we called erroneous 1930s General Land Office Resurveys. What I mean by that is the General Land Office in the 1930s went out and did dependent resurveys, official surveys. Brass caps, people have been doing business ever since.

Subsequently 50 to 60 years later, the original 1870 monuments and corners are being found that the 1930 GLO surveyor did not find. Bona fideisms, within the

public land survey, begins to come into focus when you deal with those factual situations so that was a real fascinating study to begin to understand that the concept of bona fideism in the Public Land Survey System has been there from the beginning.

Bona fide is basically good faith and for the most part it deals with settlement of land, the good faith of a settler, instead of trying to take advantage of the system to get land. The commissioner and the secretary and then later Congress has incorporated that good faith, that bona fideism into the laws governing resurveys by the Federal Government. With erroneous resurveys in two sets, if you will, of official surveys at different periods of time and then official land actions were taking place, you had to sort out, well which were the original monuments for which transactions.

Again you are back to the sequence, you are back to studying the chain of title if you will. Both the chain of title for the surveys, the chain of title for the land, not only the Federal side but on the Private side. Because it is bona fideism, what were the lands use? What did the settlers believe was their boundary? What did they do? And of course as a surveyor, you quickly know that, wait a minute, there is a lot of legal law stuff. I had another excuse to have a conversation with my solicitor on that.

>>*R. Scherler:*

I am sure that you found in many situations an administrative remedy was needed. It is not a survey remedy it is an administrative remedy.

>>*B. Dahl:*

Yes, while I could sort out this conveyance document goes with this monument, I could sort out if you will, the surveyor solution when you bring it into this case, the Forest Service District Ranger's office, he may not want to see that kind of solution because he as a land manager has other issues that he or she is dealing with.

>>*R. Scherler:*

Now you worked on another interesting job just along the coast a little farther which was Cascade Hit.

>>*B. Dahl:*

It gave me a chance to really get into the 3-mile method of section subdivision and I believe we will have videos on the 3-mile method section subdivision. But this gave me a real opportunity to not only see physically how it is on the ground but of course be able to step back and study the plats and field notes and then step back further to study the legislation and administrative pressures that caused the Indian affairs and the GLO to adopt if you will, this aberration of a survey system. Why would they do that? And now you are starting to get into the intent and so when you start having conflicting evidence or ambiguities. What was the problem that the managers were trying to create this solution to solve?

>>*R. Scherler:*

Okay.

>>*B. Dahl:*

Along the same lines I have had a chance to work in townsites which takes me out of the woods and takes me into peoples backyards. Lots and blocks types of surveys. Federal townsites as well as Residential lots and blocks. I have had a chance to work with a fee to trust situation.

A fee to trust where a land is taken from a fee status to a trust status from private to government if you will. This typically happens in Indian country. This particular job was on the Coquille Indian Reservation and once the land was acquired by the Federal Government, we were asked to go in and help them locate the boundaries of what was now part of the Reservation. Well of course we are dealing with acquired lands.

We are dealing with deeds that were privately created. In that case of course a state law was going to govern the intent of those deeds. We found out that believe it or not there were encroachments; houses across boundaries and we found out the relationship again of unwritten rights to federal interest lands and in this case the Federal Interest was the acquired lands status. So that gave us a chance to work with ambiguous descriptions and to sort out intent. And again, a wonderful conversation with my attorney, the solicitor on this.

>>*R. Scherler:*

You know as I recall, getting back to just basic surveying too, you had a township corner with three original 1854 bearing trees and ten corner points.

>>*B. Dahl:*

Yes, just the classic GLO section corner. Where is the 2-corner point when you have got conflicting original evidence. And how many did you say, ten?

>>*R. Scherler:*

Ten. There might have only been seven.

>>*B. Dahl:*

Seven or Ten but yes, you could hop around on top of the local corners there where that section corner position was. And that job, of course because of that land had been in private hands and it was built up against a residential area. There were numerous local surveys so it is always fascinating. And again, every state is a little different. Some states they record their local surveys for a long, long time. Some states have yet to record their local surveys. So being a dependent resurveyor, it is a rich opportunity to go hunt for the treasure map.

I have had a chance to go work on a navigability situation. The Secretary of the Interior in my mind is often put in the position of making an administrative navigability determination. Sometimes the surveyor is the front line eyes and if you will the report that will roll back up to the decision maker. Because in some cases, whether a body of water is navigable or non-navigable will impact the

location of the boundaries. That is one of the first things you have to determine. In this case it was Deep Creek, which is a rather small creek, and for various reasons we made a navigability determination that was non-navigable which of course was meandered till there was lots on both sides. Which were different ownerships, different statuses, some of it was private patents, some of it was Federal Public domain, some of it was Federal acquired.

Where is the boundary of a meandered, non-navigable river in this case, so it is about the division of river beds. Which you can just see it took me back to I need to read old IBLA decisions, land decisions, court cases. I need to sort through is this going to be governed by Federal Common Law or the State Law that I was working in?

In many cases, Ron was there, the Office Surveyor was there. I always felt as a BLM Field Surveyor, I had people in the office that I could work with. I was never out on an island if you will. This was a classic case where no one person can know all this stuff but often times one on one can equal three and we can get to it.

>>*R. Scherler:*

I recall all that I learned about navigability on that job as well. So that was an interesting one.

>>*B. Dahl:*

Medial lines or the deepest channel?

>>*R. Scherler:*

Yes, the center of the low water channel, which is it? Go ahead, what else? You have got a few more.

>>*B. Dahl:*

Treaty boundaries. I have worked on Indian reservations that we have of course treated reservations and we have executive order reservations and others. On the Yakama Indian Reservation, which is a treated reservation, the boundary, the treaty boundary, had the terms thence up the river.

Okay, up the river, that is clear, no problems. One of the things that job gave me an opportunity to educate myself more about is the special relationship between American Indians and the Federal Government. That has been incorporated into our laws. As a surveyor coming up through college and reading the *Brown and Clark*, it gave me survey background but this surveying in and around Indian Country is just a tweak off of that. So that was fascinating to do that. Of course on top of that ambiguous thence up the river, I know this may surprise you Ron but rivers move.

>>*R. Scherler:*

Yeah.

>>*B. Dahl:*

They do not always tell us when they move and they do not tell us how they have moved. Believe it or not there are not people out recording that fact. So again, it was a wonderful opportunity to begin to sort out what is evulsion, what is accretion, what is reliction, what is a standard of evidence to prove one or the other, what is evidence; physical evidence, document evidence. So that was again water boundaries, it is ambulatory.

>>*R. Scherler:*

When we are talking about water, we are always talking about high value.

>>*B. Dahl:*

High value. Money is close to water and there is usually a little more interest because of the value. I have had jobs where I have had a chance to work with the General Land Office in Independent Resurveys. The Public Land Survey System while it was created in 1785, it continues to evolve. By the turn of the century, the 1900s, the system had been over 100 years old and there had been surveys that were over 50-60 years old. And we know about the monumentation requirements in let's say an 1850 survey was posts, rocks, pits, and mounds. Occasionally, some of those will disappear.

By the turn of the century, 1900s, the GLO had numerous areas, large areas where there was extensive obliteration of these original monuments and surveys. There just was not much evidence of it. The GLO found themselves in this new situation. And one of the new methods that they had adopted was the independent resurvey. I am not going to go into the details of that but that is in the manual. But again, it was a system that was created, not on the fly because when you study about the evolution of how independent resurveys came to be policies, you go back two decades of the ideas being kicked around by Senior Cadastral Surveyors and Solicitors to come up with a remedy to this impossible situation.

>>*R. Scherler:*

Sure. There you also worked with some Interstate Highway and those are some unique issues as well.

>>*B. Dahl:*

Unique issues that Thomas Jefferson did not have to put into the system in 1785. Interstate Highways is a unique status classification and it is just an example of a parcel that has a unique status or classification that when you bump up against it you realize that, oh wait a minute, this is sort of a body of law onto itself. And then you have an opportunity to learn about the development of the Interstate Highway system and the intent, and the monumentation, and the right a way descriptions. That is just an example.

We could go into county roads and all of that history. I have had a chance to work on lakes. Indian Rancherias on meandered lakes, navigable lakes with dams.

Artificial elevations if you will. Now you are bumping in there. You have got state land, private land, federal land, navigable body of water, artificial elevation, the people on the Indian Rancheria just want to know where their boundary is.

>>*R. Scherler:*

Yeah, and a couple more I think. To me this is really interesting because it speaks to your qualifications and as we have gone through so far, we can touch on almost every part of the manual and you have had experience doing actual surveys in the field with almost every section of the Manual. I think that speaks to your unique qualification and you have got a couple more to tell us about.

>>*B. Dahl:*

Yeah and I have been lucky that way. Many Experience Surveyors have the same background as I do on that. I have been exposed to so many. For instance, I have had the opportunity to work on the Department of Defense Based Insulations and Military Reservations.

It is always interesting on the Four-Door Military Base which I believe has been closed but at the time it was a base where the Department of Defense was feeling that a real high-rent residential area on the backside of it, some of the residents were helping themselves to some of the base. Planting their gardens and moving their fences. So again it gave me an opportunity to work with another agency and another department and that is one of the special things about surveying with the Bureau of Land Management. Ron, most of my surveys has not been on BLM land but has been for other federal agencies.

>>*R. Scherler:*

Yeah, other Federal agencies and in many different states. How many states have you worked on in the field?

>>*B. Dahl:*

I have worked in three states in the field.

>>*R. Scherler:*

Three states? Okay. All basically in the west?

>>*B. Dahl:*

Oregon, Washington, and California.

>>*R. Scherler:*

Okay. Obviously updating the Manual is a huge undertaking, tell us a little bit about the process.

>>*B. Dahl:*

Yes Ron, we formed a Manual committee and tasked ourselves with taking the 1973 edition of the Manual and identifying what we consider obsolete, incorrect, and what was missing. We also compiled judicial decisions, Interior Board of Land Appeal decisions that were issued subsequent to the issuance of the 73 Manual.

We compiled eight three-ring binders of information, bulletins and instruction memorandums. These are BLM polices that have and if you will can impact or affect some of the procedures and processes in the Manual. And then also we had a draft 1992 -1993 Manual where there was a committee formed then that prepared a draft Manual and they did a lot of good work that we were able to use and incorporate.

Then from that core or raw data if you will the mechanics of it sort of became we took the 73 Manual as the base and we converted it to a Word document and from that then I as the Chief Editor integrated these findings from what I alluded to of the raw data and integrated this into the text into a word processor and the result of that process is called a straw man. And a straw man is in and of itself just a target to what was to come on later.

And from that, we formed a sounding board for what we called sounding boards. And a sounding board in this edition of the Manual contains ten chapters as the 73 does is just a coincidence. So in this case, the sounding boards, there were ten sounding boards. Each chapter had a sounding board and each sounding board could consist of anywhere from 2-4 subject matter experts for that chapter.

>>*R. Scherler:*

Now these weren't committees as such. It wasn't meeting as a committee and coming out with a decision. These were just people that you drew on to review and give input and help you deal with the text, is that correct.

>>*B. Dahl:*

That is correct. There was a back and forth iterative process with me and those individuals on the sounding board. The sounding board members didn't have to be surveyors. Many of them were attorneys. They didn't have to be government employees. Although clearly we had some BLM surveyors, private surveyors, state surveyors, county surveyors.

Surveyors who had experience in Indian Country. We had private attorneys, federal attorneys, mineral surveyors. We tried to get nationwide subject matter experts and I was able to work with them. Many of them were very gracious in their time and consideration. And these people are to be credited for willing to give back to the surveying community. And through this iterative process of working with these individuals, we were able to arrive at again working on this Word document where we kept track of all the changes. It evolved to what we call a draft.

>>*R. Scherler:*

And I think, you know not to mention all the people because we are not going to do that, but just to give you an idea of the kind of people that were on this, Jim Simpson is one that was on your committee, is that correct?

>>*B. Dahl:*

Yes. Jim was very gracious. Jim Simpson is the author of Rivers and Lake Boundaries. I think one of the definitive books on water boundaries and Jim was gracious enough to give us access to copyright and his material. And more than that provide an initial outline for the water boundaries areas and worked with me to help get it right or as close as we are capable of getting it right.

>>*R. Scherler:*

And of course many of you know Jim from some of you probably had him as an instructor, but many of you have taken seminars from him and know the kind of background he has and I think that it is just an indication of the kind of people that were on your sounding boards.

>>*B. Dahl:*

Yes and of course in that case, we supplemented Jim with other riparian experts, because as you know riparian isn't always a cut and dry answer.

Taking that draft then we, it went through what we call two internal technical reviews. What I mean by that is, we sent it out to the BLM. The BLM operates with twelve state offices. We have twelve state offices chief cadastral surveyors and obviously their staff. And we sent the draft out two different times for their review, edits and comments. We received over seventeen hundred edits and comments from that process. And we evaluated and further iterated the draft.

>>*R. Scherler:*

So this we are beginning to see all of the people that become involved. I think we will see more as we go along. So what is the next step.

>>*B. Dahl:*

Well, I sort of at that process I sort of felt if you will had a surveyor centric document, and so of course that gave us the opportunity to turn to the attorneys for the office of the solicitor. The solicitor is the Secretary of the Interiors attorneys. There is a staff of attorneys of course in the Washington office and field offices. But these are subject matter experts on public land issues, federal government issues and Indian issues, mining issues so they had it an opportunity to review and give us comments.

The Interior Board of Land Appeal staff attorneys looked at and were very gracious of giving his time to look at it and how we use and interpreted and if you will manage, utilize IBLA decisions. So it was an extensive process a deliberate process. It wasn't a rush. It is amazing how many times you think you have an issue nailed down and somebody will say something else and you say, I haven't thought of that.

>>*R. Scherler:*

So a lot eyes have looked at it to this point, so what was next.

>>*B. Dahl:*

During this process, I took the opportunity to wrangle invites to state surveyor

conferences and conventions and to date I have spoke at fourteen different state surveyors conventions and the topic typically was the development of the next edition of the Manual and that gave me an opportunity to solicit further feedback and to get a better understanding of our surveying community. The perception of the Manual and the opinion from the community was what is the role of the Manual can and should play. That was very helpful to me.

Because we were selecting through what topics to talk about, because you look at the Manual - the Manual typically will not answer any individual factual question. It is a compilation of general instructions. So taking those presentations and the feedback help me to again help integrate the content in this edition.

>>*R. Scherler:*

And while you were doing that several other surveyors within BLM were going to other conferences and conventions presenting the same messages and giving you feedback as well.

>>*B. Dahl:*

Oh yeah this is far bigger than me. Many of the chief cadastral surveyors worked with me and made presentations that in there areas of jurisdiction. They have done it all along, now it is just they had an opportunity to share and talk wit the community about the Manual of Surveying Instructions.

>>*R. Scherler:*

So at this point you have got something pretty well put together what came next.

>>*B. Dahl:*

Well Ron, besides the survey context that the Manual fits in, we have to keep track of the Chief Cadastral Surveyor has the authority to interpret the Manual. The surveys are done at the direction of the Director of the BLM under the supervision of the Secretary of the Interior as delegated by Congress. So we have to keep track that this document while it is a survey manual it is also within the government it is always about delegation of authorities. That is the survey authority that has been issued from Congress to the Secretary of the Interior. That is what the Manual is addressing is part of the Secretary's responsibilities for all executive duties appertaining to the survey.

>>*R. Scherler:*

So really what has happened up to this point is we had some early drafts we have put all of that together, you as the editor put together a draft. We had internal review, then we had the sounding board (external) review then we had the solicitors, then we had the interior board of land appeals judges and so that is kind of getting it down to its final form and at some point, Don Buhler the Chief Cadastral Surveyor says its done. Would that be a fair summary of what happened.

>>*B. Dahl:*

He can say it is done, but the Director of the BLM will tell Mr. Buhler if it is done.

>>*R. Scherler:*
Ok.

>>*B. Dahl:*
And the Secretary of the Interior reserves the right to tell the Director if it is done.

>>*R. Scherler:*
Sure. Well talk a little bit about some of the changes maybe or what is different. We are going to see some videos about some specific things, but just generally what is different from the 73 Manual.

>>*B. Dahl:*
Well I think when folks pick up this edition, some of the things that when they thumb through it will catch their eye is expanded water boundaries, clearly water boundaries is one of the most dynamic aspect of surveying. Water moves the federal courts have continued to talk about the nuances dealing with water boundaries. Typically the land values are higher, the resource values are higher and we are not talking just about the surface interest. There is also the subsurface interest in some areas that have to be dealt with so, they expansion of the water boundaries discussion they will see.

The other thing that they will see is I don't think the 73 Manual discussed resurvey of mineral surveys.

>>*R. Scherler:*
Right.

>>*B. Dahl:*
And clearly, we have been doing them and have done them since the beginning of mineral surveys. We have incorporated made those instructions if you will general instruction for resurvey principles on mineral lands into the chapter on Mineral Surveys.

Those have been quiet a bit request for us to include the three e mile method of section subdivision. That was typically a method of subdividing land typically in Indian country. That is a different approach than the statutory method of subdivision of intersection of the centerlines. Three mile method has unique characteristics. It is geographically and in many states and in some areas extensive townships and but we have so now we have incorporated into one place so general principles on how to survey with the three mile method.

>>*R. Scherler:*
And we will hear more about that later in this tape.

>>*B. Dahl:*
For the first time, the Manual speaks to surveys in reclamation service areas. This is extensive areas in the western United States from 1902 on. And these reclamation areas have a lot of unique characteristics inside. Because they were a

unique experiment by the federal government to turn arid land into irrigation lands. In the process the surveying process took on just a little different tilt than the typical public land survey system process. So when our surveyors go into reclamation district surface area they need to be aware that there are some idiosyncrasies.

>>*R. Scherler:*

Some different authorities and some different record keeping are a couple. Is that correct?

>>>*B. Dahl:*

That is correct. There is quite a body of literature built up about reclamation surveys. The Manual of course isn't the place to bring all of that to the surveyor. I think the role of the Manual is to tweak the surveyor to say "have I asked the right question, have I asked all the right questions" and begin to get a sense of where do I go to begin to get the answer. The other area is legislation that has happened since the issuances of the 73 Manual, for example is the 1983 -84 Service Small Tracts Act that has some unique characteristics and the legislation requires that it will modify how surveys are done and those general instructions are included.

Another interesting thing when I talk to non-surveyors, they ask I hear you are updating the Manual, there must be all kinds of changes with all of this GPS and satellite stuff and that sort of tells me that they don't really understand what dependent resurveys are about. I know some of you are just really impressed when you pick up your 73 Manual and see that picture of that solar attachment in Chapter 2. Well of course we could do the same thing but by putting a picture of the latest gee whiz RTK Kinematic instrument right there. How many years before that will look like it belongs in the museum? What I am getting to is in general terms the Manual will be technology independent. There is many better places to go to find out how to measure from point A to point B.

The Manual is not necessarily a good place to describe that how to measure process. What the Manual focuses in on is how to determine what is point A and what is point B. The other thing that is expanded is the term that has been used with in the BLM and the BLM training courses for years is the public land survey system datum. The PLSS datum in general terms is not a state plains coordinate datum system. It isn't at sea level, it just has unique characteristics and I think the Manual, this Manual takes the opportunity to take apart and explain the component parts that makes up the public land survey system datum which is not a mathematical, scientific system it is a legal system that affects private property rights.

The other thing that we have done in this edition of the Manual is in many cases, we have taken our training materials that we have for our advanced cadastral survey courses and as we have seen in our recent Certified Federal Surveyors Program, we have taken some of our training materials on specific subjects. For instance witness corners, on line witness corners, how are they used for alignment, restoration of lost corners and establishment of new corners. Line trees, witness

points, so there is more of our training material is in the Manual to give I think down one more level of iteration of instructions for the user.

The other thing that this edition of the Manual does is in Alaska, Congress has past unique federal survey statutes that are unique and specific to Alaska only. And in some of those legislations they have modified, if you will the public land survey system the general laws of surveying. There are not very many of them but the ones that are very critical to be known about and so the Manual just highlights those. It isn't a dissertation about how to do them, but it just mentions them so the surveyor has a heads up.

And I will speak to one more the standard of evidence that is used for what is an existent obliterated and lost corner. The Interior Board of Land Appeals beginning in the mid 80s begin to evolve that definition. For example, they said in the 73 Manual, we have used the term beyond a reasonable doubt. They said that is a criminal standard, a civil standard is substantial evidence. So they made rulings the Interior Board of Land Appeals speaks for the Secretary of the Interior. So they tell the BLM Surveyor what's up. So with that substantial evidence standard, they have changed the definition at the same time IBLA has told us that oh by the way the standards you have been providing over these years is a substantial evidence standard. So really nothing has changed in our evaluation of original corner evidence it is just how it is defined is more consistent with how it is actually being done.

>>*R. Scherler:*

Bob I have heard you say this several times, when all is said and done on total not an awful lot has changed from the 73 Manual.

>>*B. Dahl:*

Yeah I have talked there. Most of it you know there is huge percentages that was untouched. The worst thing you can do is change something that is good.

>>*R. Scherler:*

Well Bob we know that surveyors don't always agree on everything so how did you deal with controversial or contentious issues. How did you resolve that?

>>*B. Dahl:*

In general terms, I make recommendations to Don Buhler. These recommendations are based upon my surveying experience, my reading of judicial decisions, land decisions, interior and department decisions, IBLA decisions and historical GLO materials. It is often enlightening to go back and read some of the GLO correspondence, when issues were first brought up and discussed.

To begin to get a sense of how the issue was framed when it was just beginning. Double-proportioning how did they arrive at proportioning? What was there process? I alluded to earlier about dependent resurveys, independent resurveys and bona fide rights concept. So I have had a chance to do a lot of reading of this historical prospective of surveying and surveying issues. And of course we are not

the only generation that has had disagreements, controversies and really more than one right way to solve an issue. In many cases the disagreements are not about one answer is right and one answer is wrong. They probably both could work, but often times for particularly when it comes to one monument, one line there needs to be one answer.

And then also, with these controversial issues, I found that I made the right choices with the sounding board selection. If I got both opinions or multiple opinions from my sounding board members, because that gave me a chance to make sure I understood what there issues were, because we all have blind spots and I am no different than anybody else. But to hear other subject matter experts talk about an issue that, oh I haven't thought about it that way or he framed it in a way that was very helpful. At the same time I receive counsel from the solicitor. There are various solicitors in the Washington office so that is how I compiled my recommendations for Don's consideration.

Because all of the years that I have been out giving presentations, and I had a chance to begin instructing about surveying in the mid 1980s, I found that if you want to learn about something, try to teach it. So I have had I think a good exposure or good sense of the classical contentions within not only the BLM community but with the survey community as a whole. From that I compiled recommendations and Mr. Buhler makes the final determination for the Manual.

>>*R. Scherler:*

So talk a little bit about the impact the Manual will have on the licensed state surveyor. What are your comments?

>>*B. Dahl:*

I start with the fact that it is different, somewhat different from state to state. I think the impacts every public land surveyor in a public lands survey system state. But how it impacts an individual state will vary a little bit. In some states, state legislature by statute law has incorporated portions of the Manual. In some states it has been incorporated by administrative rule and in some states it has been incorporated by common law or court decisions.

When I find that I go give presentations at the various state conventions, part of my preparation is I will study and research that states statute, administrative rules and common law decisions and attorney general decisions and opinion as it relates to the Manual. Then I walk to the group of how the Manual has been incorporated into the practice of land surveying in your state. That is one way.

At another level, the way that the Manual will impact a licensed land surveyor is if the deed you are interpreting and surveying, if the origin of that deed is federal in nature, well the rules governing the creation of that deed , if you will the intent of the grantor in this case is the federal government. That intent and those rules are summarized in the Manual of Surveying Instructions. They are going to guide how to interpret those legal descriptions so that the surveyor can trace back to the origin of that boundary is federal in nature.

>>*R. Scherler:*

And of course, any time that you are surveying against any kind of federal land which the private sector survey often does, the state licensed surveyor, you are dealing with the same thing because you are dealing with federal land.

>>*B. Dahl:*

Federal land and we know in our system, we have different jurisdictions, state jurisdiction, federal jurisdiction and how we have a system that handles the conflicts when there are and I think that is pretty obvious when if you are up against a federal land you are going, the Manual is probably going to have an impact.

But even when it is private property and private on both sides, I think you need to look at that origin of the description of the boundary that you are surveying. And the other thing that I think that surveyors will find is the deference given to the Manual of Survey Instructions by our legal system. I think you hesitate much research of the U.S. Supreme Court decisions, federal court decisions and most of the public land survey system state decisions back you know hundred years, 150 years back in their history where the Manual has been cited and in some cases obviously just as controlling in locating certain boundaries.

>>*R. Scherler:*

Thank you Bob. It is clear a great deal of effort by a large number of subject matter experts have gone into the creation and development of this 2009 edition of the Manual of Surveying Instructions.



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