LEGISLATIVE HISTORY PROJECT
ON THE UN PRINCIPLES OF REMOTE SENSING
NATIONAL REMOTE SENSING AND SPACE LAW CENTER
UNIVERSITY OF MISSISSIPPI SCHOOL OF LAW

S. NEIL HOSENBALL
INTERVIEWED BY CAROL L. BUTLER AND JOANNE IRENE GABRYNOWICZ
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BUTLER: Today is February 8, 2002. This oral history with Neil Hosenball is being conducted for the Legislative History Project on the United Nations Principles of Remote Sensing for the National Remote Sensing and Space Law Center at the University of Mississippi School of Law. The oral history is being conducted at Mr. Hosenball's home in Port Aransas, Texas. Carol Butler and Joanne Gabrynowicz, director of the National Remote Sensing and Space Law Center, are the interviewers.

Thank you very much for talking with us again today.

GABRYNOWICZ: Mr. Hosenball, here's how I propose we proceed. Do you have a copy in front of you of the U.N. *Principles*?

HOSENBALL: Yes.

GABRYNOWICZ: I have a copy in front of me. For the record, we're going to be referring to the *Principles Relating to Remote Sensing of the Earth from Space*, Resolution 41/65, U.N. document No. A/RES/41/65, 95th Plenary Meeting, dated 3 December 1986.

What I'd like to do is go through them one *Principle* at a time and see what you can tell us about them, what the legal issues were, maybe what the competing positions were, and what the final version embodies. So why don't we just start with that, and let's take a look at *Principle I*. This is the *Principle* that refers to definitions.

HOSENBALL: Yes. The issue relating to definitions came up fairly regularly. Basically what's in…*Principle I* is a slightly changed version of what's pretty much stayed for a long period of time, which is purposes of protection of the environment in particular.

The purpose of improving natural resources management…is different. Originally the definition was "remote sensing" means "sensing for the purposes of the national environment and national resources," words to that effect. That is not as specific as this. But it's a good definition. It's one that I think does pretty much say what these *Principles* should apply to and do apply to.

The rest of it, the data issues were always—nobody in the Legal Subcommittee felt they were expert enough to come up with the kinds of data that would be coming from a remote sensing system—looked…to the Scientific and Technical Subcommittee…[which] was also working on the remote sensing to give us help. There were other attempts. This basically, as far as remote sensing is concerned, is a functional definition.

The Soviet Union did introduce the concept of trying to do it by way of [spatial] resolution. Fifty meters, I think, was what their proposal was, which was another way of doing it except nobody knew really what they meant when they said "fifty meters" and what it applied to, the kinds of instruments. Again, we referred it over to the Scientific

[Subcommittee], or [to] Perek [and] asked, "Is this a logical thing and would you check with the Scientific and Technical Subcommittee to see whether it makes any sense."

I think at that time, as I mentioned previously, I think *Landsat* was lower than fifty, and I'm pretty sure it was scheduled…to go much lower. So it would have been, if you accept[ed] the Soviet proposal, you could have kept an awful lot of remote sensing data…[not] subject to the *Principles*. Our feeling was we wanted all the remote sensing principles to apply without a resolution limitation, because again you can sort of get more information from better resolution and I knew that it was going to go much lower. Basically it went away fairly quickly.

The data [provision], it's not too much different from what I saw originally, some changes. The same true for remote sensing activities, not too much different, a little bit different than I remember it, but not significant.

GABRYNOWICZ: Was there any specific issues related to the distinctions between "primary data", "processed data", and "analyzed data"?

HOSENBALL: Oh, yes. Oh, yes. "Analyzed information".

GABRYNOWICZ: I'm sorry, "analyzed information".

HOSENBALL: Oh, yes. There was a lot of discussion on that. But from the point of view would there be access…. Because it becomes important in the *Principles* whether you're talking about "primary data" or you're talking about "processed data" or you're talking about

"information", because you did have an argument…from developing countries that they had sovereign rights over "information" about their natural resources and…they wanted to impose [soverignity] on information and data coming from remote sensing. Nobody quarreled that they had sovereign rights over their natural resources. The argument was that remote sensing, either sensing, or acquiring data, or disseminating data, there was no sovereignty over information, a major issue all the way through. So the definitions were important from that standpoint.

From a scientific or technical standpoint, they're not very technical. But the mere fact that they're defined, the purpose of defining it, was made clear that this type of data could be distributed, could be accessed and distributed.

GABRYNOWICZ: Is there anything else you want to say about *Principle I* then?

HOSENBALL: No, not really.

GABRYNOWICZ: You want to move on to *Principle II*?

HOSENBALL: There are several provisions in here that deal with the concerns of the developing countries and the less developed countries, and this is one of them. I'm not sure whether this is partly taken from the '67 treaty…. I guess it's *Principle III*, but I think that benefit—no, I guess not. But basically this was one of the *Principles* they wanted to make sure that this new technology, this developing technology, would be to their benefit. They didn't have the scientific and technical capabilities within their own country. In the early

days, it was the U.S. and the Soviet Union, the space powers so called, that had the technology. Nobody else did at that point. They were concerned both about the Soviet Union and the U.S....which they didn't understand or know at this particular time would misuse this technology, and they wanted to make it clear in these *Principles* that their interests would be protected in some way and that these *Principles* would do it. I think it had some general language [about for the] benefit of all mankind or [the same] kind of language in the *Principles Treaty*,[1] but they wanted something much more specific. That's the same reason you have *Principle III*.

GABRYNOWICZ: Now, the reference to the *U.N. Charter* and the *Outer Space Treaty* and the relevant instruments of the ITU, by reference does that mean those documents are incorporated into the *Principles*?

HOSENBALL: I think so. …I think the intent was to incorporate it. The ITU, of course, you had telemetry, and they have very detailed rules, so you had to live with that. So, no, I think definitely they were incorporated.

GABRYNOWICZ: So, if one were to attempt to make an interpretation of the remote sensing principles, would it be appropriate to resort to these as construction tools, look at the rules of those documents and apply them to interpreting the remote sensing principles?

[1] Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, Jan. 27, 1967, 18 U.S.T. 2410, T.I.A.S. 6347, 610 U.N.T.S. 205 (effective Oct. 10,1967). Also known as the Outer Space Treaty.

HOSENBALL: If there was any interpretation needed. If you really needed interpretation, yes, I think you'd go to those basic documents, since they are incorporated.

GABRYNOWICZ: "Conducted in accordance with international law," can you say what that means?

HOSENBALL: Whatever international law exists that might be applicable. …There are some other things that might play a role…. I'm not aware of any. I don't think anybody really did a study of it to see what that term really meant. It was just accepted. Of course everybody acts in accordance with international law, so throw it in. Whatever that international law might be, we'll cover the waterfront.

Again, they were concerned that something would happen, and they wanted every protection…and if there was something in international law they could rely on that wasn't explicitly set forth in these *Principles*, that's what they were going to do.

GABRYNOWICZ: It was just incorporations.

HOSENBALL: Yes. It's an incorporation.

GABRYNOWICZ: *Principle IV*. Before we go there, anything else you want to say about *Principle III*?

HOSENBALL: No.

GABRYNOWICZ: *Principle IV* is pretty extensive.

HOSENBALL: Yes.

GABRYNOWICZ: So if you want to take a minute to look at it and then whatever you want to say about it.

HOSENBALL: Well, here again you [have] the developing countries who wanted, again, as much language as possible to ensure that these activities would respect their sovereignty to the extent that their sovereignty could be respected. But the key thing in it stipulates the principle of "freedom of exploration and use of outer space" [and this] is the balancing provision, a clear statement that you have freedom of exploration, freedom of use of outer space, which [are] the key words and pretty much overcomes any concept of prior consent to the right to sense. Having [stated] that, then you have the balancing language that the developing countries wanted, "full and permanent sovereignty of all States and peoples over their wealth and natural resources," but [we] added "with due regard to the rights and interests, in accordance with international law"—again, the term international law—"of other States and entities," so again, trying to balance not letting it go too far, [so] it's all one sided. You've given the right to sense. Now [the non-space countries] have all these other rights…and [so] it's again balance. It must have come along a lot later. I'm not sure when this exact language came into play.

GABRYNOWICZ: So is the following sentence correct or incorrect: *Principle IV* is a balance between the rights and obligations of the sensed and the sensing states.

HOSENBALL: Yes.

GABRYNOWICZ: You would say that's correct?

HOSENBALL: That is definitely correct.

GABRYNOWICZ: Anything else you want to say about *Principle IV*?

HOSENBALL: No. It just really emphasizes legitimate rights and no detriment. The no detriment came in very early in discussions. This looks like it's a *Principle* that brought several common elements together that may have been in several principles—when I was there…. Brought them together into a single extended paragraph to bring that balance into a clear understanding.

GABRYNOWICZ: Was there a particular conversation that occurred around the idea of no detriment?

HOSENBALL: Well, no. The Soviets even asked, if my recollection is [right,] "What did you mean by 'detriment'?" Definitional problem. We had part of the same problem, but once you start defining terms, you start getting into a real problem [about] defining everything in the

Principles. Like international law. You can end up going on and on trying to define individual words…. Some discussion, but nobody could come to a very good conclusion on how to resolve the problem on what "detriment" meant. In fact, "some harm" and that's it basically. Serious harm, little harm, left open.

BUTLER: Speaking of definitions, was there a similar type of conversation on defining what the natural resources actually entailed or was that pretty well stated by the definitions in the first *Principle*?

HOSENBALL: Pretty much stated by the definition. Again, you get into that kind of a problem. Again, a word that probably needs defining, but once you start defining, you're going to define everything, and…these are principles basically. If you went into a treaty, there may be some question as to [whether to] better define some…words because the treaty is going to be more binding, number one, and you really want to be a little more specific. So, yes, but these are principles. So you say natural resources. It's consistent with a…a principles approach.

GABRYNOWICZ: So anything else about *Article IV*?

HOSENBALL: No.

GABRYNOWICZ: *Principle IV*, rather. Then let's go on to *Principle V*, and this refers to international cooperation.

HOSENBALL: Yes. The U.S. was already carrying [out] that activity, international cooperation, bilateral agreements, multi-lateral agreements. Again, you see…that the big fight was developing countries basically saying, "We don't have any money. We can't afford this. We want it for free." You had that going all the way through, and you can understand that. The "have-nots" wanting the "haves" to provide resources for them. So you find the language in [the] last sentence participation in each case on "equitable and mutually acceptable terms".

Ultimately this was very important to [the U.S.] because sooner or later [remote sensing] was going to be privatized, and if you didn't have this kind of language, would the government be picking up all the money…private enterprise was spending to participate in international cooperation? So again, there was a real reason for having that language. At the same time you wanted to encourage international cooperation and so you have again the balance. There will be international cooperation, but it would be on mutually acceptable terms.

Here it's mutually acceptable. Later on I think there's language that doesn't use the term mutually accepted terms.

GABRYNOWICZ: Let me ask you the about the term "equitable". When that was used, were they talking about the concept of equity as opposed to law? Was that formal jurisprudence?

HOSENBALL: No. No jurisprudence involved. It was basically meaning fair, not as we understood "equity" in the jurisprudential sense, even though it does have a concept of

fairness even in the judicial sense. But we didn't get into a legal type equity versus common law or statutory law, it was basically fairness. If that's in jurisprudence, fine, but [we] didn't get into it. Everybody knew what it meant. It meant fair terms.

GABRYNOWICZ: Anything else about *Principle V*?

HOSENBALL: Let's see. Yes. [The] same concept encouraging cooperation,…agreements or other arrangements,…directed at the operation of centers.

GABRYNOWICZ: So now we're talking about *Principle VI* then? Have you gone on to *VI*?

HOSENBALL: Oh, I've gone to *VI*.

GABRYNOWICZ: So what would you like to say about *Principle VI* then?

HOSENBALL: It was something that the U.S. was already doing, and I think the Soviets had some sort of arrangements with their Eastern European Soviet Bloc countries, and so they made lots of speeches, too, about all the cooperation.

In plenary session…what was largely done at the start of the session, the start of at least the initial session, was everybody gave long speeches about what they were doing relating to space, U.S. included. We had a long speech saying all the good things that we were doing in space and, of course, in particular in the remote sensing area. We'd be furnished with all the bilateral agreements and whatever else had been done internationally.

The Soviets would do the same thing. Argentina and Brazil [being] a little more advanced, would also speak of what they were doing in remote sensing. Other countries would make speeches about the *Principles* themselves, what they liked or didn't like. But the U.S. primarily would really make this speech on…international cooperation in the remote sensing area, as well as other areas, and so would the Soviets. So you'd get that kind of building up to this kind of a principle, which basically says you ought to help wherever it's feasible to develop some systems where it would be easier for developing countries to get the benefits of this technology.

GABRYNOWICZ: There's also a reference to regional agreements.

HOSENBALL: Yes. As I said, there were discussions about how do you organize…remote sensing activity, the role the U.N. should play, regional, national, a centralized data bank somewhere, a lot of discussion about organization. I think [most] states didn't expect to participate in the sensing activity. It was in the data area that they really expected to participate. Nobody, I don't think anybody raised the question. To the extent that they might ask for coverage of a particular region, yes, that, too, would be a participating, but in the technical operations of the sensing activity, except for the point I just made of maybe indicating an area that they might want to go over, it was data. How do you get a hold of the data, and what kind of data do you get, and when do you get it, that kind of argument.

GABRYNOWICZ: Do you think those questions were resolved by the *Principles*, what kind of data do you get, how to you get it, and when do you get it?

HOSENBALL: I think so. I think they've done a pretty good job of at least stating the data that you do get and how you get it and under what arrangements you get it. At least there have to be arrangements in order to get it. No, I think the *Principles* did a pretty good job of that. They may not make everybody happy, because there were issues about access to data.

GABRYNOWICZ: Well, we'll get to those when we get to that *Principle*. So does that conclude *Principle VI* for you?

HOSENBALL: Yes.

GABRYNOWICZ: *Principle VII* refers to remote sensing activities and technical assistance.

HOSENBALL: Yes.

GABRYNOWICZ: Mutually agreed terms.

HOSENBALL: That same thing. [The non-space countries] want help. The issue was do they get free help or do they get help on mutually acceptable, mutually agreed terms? That's interesting, the difference in the language. We have in V "mutually acceptable," and here we have "mutually agreed." I'm not sure there's a difference, but it's surprising that they used different terms. I'm not sure there's any difference. I assume that if you agree, that they're acceptable.

…Why—I have no idea why the words are different. You'd think you'd be consistent and not raise the issue. I just raise the difference between the two.

GABRYNOWICZ: Then *Principle VIII* refers to the United Nations, its agencies, and its role. What was the discussion there?

HOSENBALL: The U.S. typically was not about to fund [a] U.N. operation in remote sensing. At that time it was still paying the largest share [of the U.N. budget, and the U.S. was] always concerned about empire building. The U.N….at least the Outer Space Division people, would have loved to have had a U.N. remote sensing center. I suspect [there was] talk was on a bilateral [basis] or sidebar discussions with developing countries, trying to have them promote that idea. But neither the Soviets or U.S. were interested, and so you ended up with basically this language, to the extent that the [U.N.] agencies had the expertise in remote sensing. Some of them did.

The Food and Agriculture [Organization], what is it, FAO, had always expressed interest in remote sensing and logically so. There is an environmental agency, a U.N. environmental agency, and [it] had obviously expressed interest in use and did have expertise. Those two agencies did, and they had a much closer working relationship with developing countries than the U.N. in general or even that the U.S. had in many cases.

So the principle is a good principle and one obviously that you can't really object to. The key thing was not to have anything in here urging the U.N. to set up a remote sensing operation, either from a point of view of sensing or data distribution. This doesn't, that's for sure. So it's a good *Principle*.

GABRYNOWICZ: Then let's move on to *Principle IX*, which refers to previous space treaties including the *Registration Treaty*,[2] the *Outer Space Treaty* itself, and also refers to the obligation to inform the Secretary General regarding remote sensing activities. Would you like to say something about *Article IX*, I mean *Principle IX*.

HOSENBALL: We ran into this problem in the *Registration Convention*. Everybody wanted prior notification and complete explanation of what the mission was. In fact, we were reporting military missions, military launches under the informal arrangements even before the *Registration Convention* came along. So it was fighting the same battle all over again. They wanted prior notice of launches of remote sensing [satellites]. They wanted to know the information about the activity, where you were going to sense and everything possible. This…is almost the same language that's in the *Registration Convention*, except for, again, the last…couple of –

GABRYNOWICZ: Phrases?

HOSENBALL: Yes, phrases, particularly any developing country that is affected by the programs at its request. But it's all modified again by the same language that was in the *Registration Convention*, "feasible" and "practical". So as I say, it's just rearguing…[the Registration Convention issues]. We'd point to the *Registration Convention* and say that's more specific as to what the procedures ought to be and it's been agreed to and let's move on.

So you ended up with this. They particularly wanted [the] last few phrases in there, again, developing countries' concern about this technology that they didn't know a lot about.

GABRYNOWICZ: Anything else about *Principle IX*?

HOSENBALL: No.

GABRYNOWICZ: Then let's move on to *Principle X*. This is the *Principle* that refers to protection of the Earth's natural environment.

HOSENBALL: Yes. That came in fairly early, as I think I mentioned, *X* and *XI* were, I think, in basically one *Principle* and one thought at least. If you're going to protect the Earth's natural environment, you also wanted to provide information [on] anything that might affect the Earth's environment detrimentally, it naturally follows that if there's a natural disaster you'd want to do the same thing.

So [the Subcommittee] basically put a requirement on states that if they have data or information, analyzed information, that may be useful to states either affected by natural disasters or that could be used to avert any phenomena harmful to the Earth [you] shall disclose such information to [the] states concerned. So they're basically…the same, just dealing with different events.

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[2] Convention on Registration of Objects Launched Into Outer Space, January 14, 1975 28 U.S.T. 695, T.I.A.S. 8480, 1023 U.N.T.S. 15 (effective Sept. 15, 1976). Also commonly referred to as the Registration Convention.

GABRYNOWICZ: So then let's take them together, *X* and *XI*. *XI* is the protection of mankind from natural disasters. Anything about that?

HOSENBALL: No. Early on agreed to. Very little discussion. Very early common element. It really was. Nobody questioned that.

GABRYNOWICZ: Let's digress for a second. Which *Principles* do you believe were accepted early on?

HOSENBALL: That one was accepted early on without brackets. The protection of the natural environment was accepted early on. The concept of the registration idea, prior notice, a big argument but ultimately because there was a *Registration Convention*, that was accepted early on.

GABRYNOWICZ: So that was *Principle IX*?

HOSENBALL: Yes. The concept of technical assistance being provided was accepted early on. The only question was how was it…to be paid for? So was a formulation for *Principle VI*, again, encouraged [states] to enter into agreements. So was *V*. The international cooperation ones were accepted fairly early on. They may have had some words bracketed. Like mutually agreeable terms may have been bracketed, because developing countries didn't want that. They wanted it made available to them without having to negotiate terms and conditions on making it available. So you had that.

The difficult ones were on the access to data, the definitions of remote sensing to some extent, the definitions of data to some extent.

Let's see what the other *Principles* were. Again, the early-on ones were the ones that dealt with international cooperation. You have that. As I say, there may have been brackets on some words, but there were all these common elements that would be merged together from various working papers that were submitted. They may contain different words, but they had the same concept, and so you'd pick and choose which one you'd use or you combined them or did other work on them to try and get agreement and get rid of those brackets. So that's the way the process worked.

You've got to remember, a lot of progress was made in '78, '77 and '78, so that's where the work was done, based on my recollection. Work was done in '75, and then there was a lull because the Soviets threw in the *Moon Treaty*,[3] and they were very anxious to do the *Moon Treaty*. We had been finished with *Registration* and *Liability*.[4] They proposed the *Moon Treaty*, and they were more interested in getting the *Moon Treaty*, so there was that lull. You've got to remember that in '79 the *Moon Treaty* [obtained] consensus, and so it picked up after that again, and I assume that's how it ended up in these *Principles*.

GABRYNOWICZ: Then let's go back and pick up with the principle we left off, and that next one was going to be *Principle XII*.

HOSENBALL: *XII*.

[3] Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, U.N. GAOR, 34th Sess. (1979), Supp. No. 20 (Doc. A 34/20) (effective July 11, 1984).

GABRYNOWICZ: This seems to be an extensive *Principle*.

HOSENBALL: Yes.

GABRYNOWICZ: This is a *Principle* that refers to nondiscriminatory access, access to different categories of data and information.

HOSENBALL: …Here it breaks out the distinction between "primary data" and "processed data" and "analyzed information", and they treat [them] differently and we clearly know why. But again on "reasonable cost terms". They're not going to get it for free. There's availability earlier for "processed data" and "primary data". There's no priority, but basically as soon as it becomes available, a sensed state [w]ould have access to it.

GABRYNOWICZ: Do you remember any discussion about as soon as it becomes available, what that was intended to mean?

HOSENBALL: You mean on—No.

GABRYNOWICZ: [*Referring to document*.] Well, that's not in this particular *Principle*.

HOSENBALL: Yes. That's what I was looking for.

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[4] Convention on International Liability for Damage Caused by Space Objects, March 29, 1972, 24 U.S.T 2389,

GABRYNOWICZ: But that term anyway.

HOSENBALL: I don't think it's anywhere.

BUTLER: "As soon as…[they're] produced." It doesn't say as soon as available.

GABRYNOWICZ: On *Principle XII*, "As soon as primary data and the pro[cessed] data concerning the territory…are produced."

HOSENBALL: "Are produced," right. "Are produced," which makes it available in an earlier time frame than the language that you end up [on] analyzed information. There is a distinction drawn. There is a distinction drawn, and an important difference. Basically the difference is you shall also have access to the "available analyzed information." Now, "available" meant a lot of other things. Not produced. A decision by someone that it's available. From our point of view, that meant that you could have your principal investigators using remote sensing data, doing the analyzing, and then publishing their paper, and then analyzed information would become available then. You could have private parties, private corporation doing the analyzed analysis and available then when they're ready to make it available.

So the analyzed information part was much more important from a point of view of the U.S. than the basic data, because that's the added value that everybody talks about. When

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T.I.A.S. 7762, 961 U.N.T.S. 187 (effective Oct. 9, 1973).

it comes to remote sensing, the ability to analyze the information and come up with some sort of end conclusion about something, whatever it is, whether there's too much water in the ground or not enough water in the ground, or this area might be an interesting place or important place to do some prospecting for natural resources…[was] so very important from our point of view.

The Soviets liked it too because it gave them the ability not to make their information available across the board. I mean, NASA was making an awful lot of analyzed information available. ["Available"] gave the Soviets the ability to retain their analyzed information. Again, they were just as interested as we were that if they had it and somebody wanted it, they would have to enter into an agreement of some sort with them…they wanted [this] as equally as we did. So [that] distinction, that, to me, is probably the most important *Principle* from the point of view of the total *Principles* that we've been looking at. It's a key one for me.

GABRYNOWICZ: *Principle XII* is a key principle?

HOSENBALL: Yes.

GABRYNOWICZ: Then let's take a minute to look the it a little more closely. What is your understanding of the term "nondiscriminatory basis"?

HOSENBALL: It means that you couldn't say, "I'm going to give data to this state and I'm not going to give it to that state. I'll give it to State A and I won't give it to State B for whatever

reason." It had to be available on an nondiscriminatory basis. If I gave it to State A and State B came along and wanted it, I couldn't say, "You can't have it." Basically that. You couldn't discriminate among [states] asking for the data.

GABRYNOWICZ: Okay. And what is your understanding of "reasonable cost terms"?

HOSENBALL: You'd have to come up with a justification basically on the charges you were making. In other words, it just couldn't be totally arbitrary in saying we're going to charge you ten times as much as it costs us. There had to be a basis in the cost of preparing the data or [acquiring] the data. You'd come up with a unit cost of some sort that was based on reason, rather than just being arbitrary. Reasonable cost is fairly common in government.

GABRYNOWICZ: What is your understanding of this: "The sensed State shall also have access to available analyzed information concerning the territory under its jurisdiction in the possession of any State participating"—oh, that's such a long sentence.

HOSENBALL: It's a confusing sentence. Basically it says if you give the basic data to State B, not a state operating the sensing process. In other words, the sensing state always has all the data. It also may have analyzed information. The sensed state says when you give that information to a third state and that state has information, analyzed information, about the territory of the sensed state, then it wanted to get access to that information as well. See what I mean?

GABRYNOWICZ: Yes.

HOSENBALL: Again, they're worried about the neighbor having information about, say, water resources along a border and having that information, the analyzed information. They have data, and they don't have the capability to analyze the data. They want that state to make that information available, again, on terms…[to the neighboring] country….

That's a new thought. I don't remember. The issue was there, but not as explicit as this. They were worried about other countries who got the data, not necessarily the U.S. or the Soviets, who got the data and had it and didn't have any obligation to make it available since they weren't a sensing state. So this came in to the picture that, yes, if somebody else has it, State B has it and State A doesn't have it and State A is the sensed state, B had an obligation equal to a sensing state to make that analyzed information available about its territory…. Interesting section.

GABRYNOWICZ: *Principle XII*, in the past I've heard you refer to this as the "dissemination statute." Would you still characterize it that way?

HOSENBALL: *X* and *XI* dealt specifically with disseminating…data and information about natural disasters and threats to the environment, so they, to some extent, are access *Principles* as well, but *Principle XII* is the general one. It really says you get access to primary data and processed data and analyzed information under these conditions. There's no priority in there, which was one of the issues. There's no prior consent in there, which was, again, a major issue. It deals generally saying that these are the terms and these are the conditions under

which you will have access to any data or information that is in the possession of the sensed state or in the possession of a third state, particularly in the information area, the analyzed information area. I think I probably agree that this [is] the basic *Principle* dealing with access to data.

GABRYNOWICZ: Then let's move on to *XIII*, another *Principle* referring to international cooperation and consultations.

HOSENBALL: Well, it's in another form. It urges consultations, and it says a sensed state can request—if you're ignoring them, they want to participate and you're ignoring them, you're not responding, you can make a request and enter into consultations in order to make opportunities available to participate…. It's, again, international cooperation. You get that through so many of these *Principles*. That was the push.

GABRYNOWICZ: Anything else about *Principle XIII*?

HOSENBALL: That's about all I have to say.

GABRYNOWICZ: Then *Principle XIV* is the principle that refers to governmental and nongovernmental entities.

HOSENBALL: Yes.

GABRYNOWICZ: Would you like to say something about that?

HOSENBALL: …What this principle does is it flows down the '67 treaty [Outer Space Treaty] to remote sensing and applies it, [where] applicable to either governmental or nongovernmental agencies. Nongovernmental agencies would include nongovernment charitable organizations or scientific organizations but also private organizations, corporations organized in the states and elsewhere who might conduct [remote sensing activities]. By the times these *Principles* were finished, I think we had the *Landsat Act*,[5] what, in –

GABRYNOWICZ: '84.

HOSENBALL: —'84 and the U.S. had already started to transfer handling the data and distributing the data…to private parties. So it doesn't surprise me that obviously you'd want to—even if you thought it was going to happen, you'd want to make sure [the *Principles* applied to nongovernmental entities]. To me it's no big deal, because I think it would have been true under the '67 treaty anyway.

Now, what is that responsibility? I'm not sure. The responsibility to conform to these *Principles*, I assume, and responsibility to conform under other provisions [of]…international law, which is again mentioned here for the second time. I don't remember this being in the *Principles* when I…[was deeply involved]. So it was something that was added. I'm not sure. I'm not sure exactly what it means, [the] last sentence.

GABRYNOWICZ: Then anything else about *Principle XIV*?

HOSENBALL: No.

GABRYNOWICZ: Then the last principle is *Principle XV*, and this relates to dispute resolution. We touched on this a little bit in our previous conversation.

HOSENBALL: Yes. The only thing I remember is we had a dispute provision which led to consultations, my recollection before I stopped attending sessions. This one is much broader. It basically commits both governmental and nongovernmental agencies to submit to established procedures, and there's a whole range of procedures for the peaceful settlement of disputes. I mean, it's a very, very broad provision.

I don't know the logic behind agreeing to this, unless, again, as I said earlier, it was something that was holding up final consensus and the trade-offs all took place, and we said, "We'll agree to this if you'll agree to that," and it was important to the developing countries that they wanted to have some entity that they can bring their disputes to and that they would have a choice….

GABRYNOWICZ: Well, then I only have a couple more wrap-up questions about the *Principles* in general, and then I'm going to hand it over to Carol.

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[5] Land Remote-Sensing Commercialization Act of 1984, 15 U.S.C. 4201 et seq., amended and changed to the Land Remote Sensing Policy Act of 1992. Also referred to as the Remote Sensing Act.

Do you think there was anything that the United States wanted to have put in the *Principles* that wasn't put in the *Principles*?

HOSENBALL: No. I can't think of anything. It wasn't at our initiative, U.S. initiative to have remote sensing on agenda to begin with, so we were happy with things going along as they were. So, no, I don't think so. I think on the whole there were some things that I may not be too happy about, that may have gone too far, but they are things the U.S. can live with. There's nothing here that impacts on the ability to carry out the technology, to commercialize it, and do the things you want to do with it. So I think it works out well.

GABRYNOWICZ: Could you summarize your understanding of the responsibility of a sensed state under the *Principles*.

HOSENBALL: Of a sensed state?

GABRYNOWICZ: Of a sensed state, the state that is being sensed.

HOSENBALL: Their responsibilities?

GABRYNOWICZ: Yes.

HOSENBALL: Well, they do have some responsibilities if they get some data. You can't cut off borders, obviously. If you're going to get the data down, you're going to get it from the

area surrounding your own state, depending again on the resolution. If you get data and you analyze the data and you find that your neighbor…there's something happening in his territory, under *Principle XII*, you have an obligation to do something there, too. But other than that, there are no real obligations on a sensed state.

GABRYNOWICZ: How about the rights of a sensed state, summarize the rights of a sensed state under the *Principles*.

HOSENBALL: They list a whole bunch of rights, the right to wealth, right to natural resources, right to have no detriment. There are more *Principles* dealing with their rights and interests than certainly…the rights and interests of sensing states. All the sensing states get is recognition to carry out their sensing activities in space and on the ground…. That's what they get. They don't get anything more.

The sensed states and third parties states, for that matter, get access to data, under terms, but they get access to data. They get access to analyzed information as available…. So they get a heck of a lot more than the sensing states. The sensing states have more obligations.

BUTLER: Could you summarize those obligations?

HOSENBALL: Well, they have to make data available. There may be a cost, but you'll never recover the full cost. They have to enter into consultations. They are subject to a dispute provision. There's a whole area. Most of it deals with benefits to sensed states and provides

obligations on the sensing states, with the only benefit, as I said, basically the right to carry on the activity as it was ongoing at that time. People were complying with the basic principles before these *Principles* came along. It codified to a large extent the activities that were going on and then put obligations on the sensing states vis-à-vis sensed states and in particular repeated over and over again the [rights of] less developed countries.

GABRYNOWICZ: How would you summarize the status of—I want to use the language—developing countries, each one of those phrases, developing countries could be a subset of sensed states? Is there anything over and above the sensed state's rights and obligations that may exist for those sensed states which also happen to be developing nations?

HOSENBALL: Well, what's the definition of a developing country? Mexico considered itself and still does, to be a developing country. Now, you compare them with some of the countries in Africa and Asia. So you've got degrees of development.

I think everybody understood industrialized countries. You don't have to call Western Europe industrialized countries that had the technical capability to take this information and use it, to take remote sensing data and information and use it if they wanted to. That didn't mean they had to do it, but at least they had the capability and so don't worry about them. They can take care of themselves. It's us poor nations and slowly developing nations, this so called *Group of 77*, which also included India, that felt that they did not have the capability to do it.

Now, India did have capability to do remote sensing, if they wanted to put their resources there. In fact, there probably was an agreement with India that I don't recall. The

industrialized states, technically developed states could take care of themselves. What we ought to do is recognize the rights. That's why you single out in a lot of places developing countries and developing states, because they were the ones that said, "Western Europe can take care of itself. United States can take care of itself. Canada can take care of itself. Sweden can take care itself. We've got to worry about people who don't have the resources, both technical and financial to make use of this very good technology." They like the technology. There isn't any question about it.

The question was how would they get a hold of it? How could they use it? Who was going to help them use it? Who was going to give them money to use it? Is it an aid program, foreign aid program? Are there U.N. agencies that could provide this technical assistance? In fact, I think the U.N. did run meetings that were purely technical in nature for the developing countries to show them, one, what this was all about in effect, plus how they could participate and what it could be used for. So even at that time, that activity was going on. So that's why you reference the U.N. and other agencies.

GABRYNOWICZ: Do you think those multiple references to the special considerations for developing nations in the *Principles*, do those references give rise to any additional rights that sensed states have under the—[*Principles*]

HOSENBALL: No, I don't think so. It's again, the emphasis. They wanted to emphasize the particular situation developing countries were in. They really didn't have the technical know-how or the money or the people or whatever to really participate unless they got some help. They were also afraid, not knowing as much about the technology, that they might be harmed

by it in some way. They wanted to be helped by it, and they didn't want to be harmed by it. When the sovereignty argument came up, sovereignty over information about [their] country, I said, "Hey, if you're worried about that, you control your borders. Nothing in these *Principles* allows somebody to enter on to your territory without your consent. Nothing's changed. Yes, people do have information, always may have information about your country that you may not know about today, forget about this technology. So it's not a new problem. That's not a new problem. But you control your territory so that you can exclude people, if that's what you want to do." Sovereignty over information is a different problem. It's a mistake to go in that direction.

GABRYNOWICZ: One final regarding the entities addressed in the *Principles*, could you summarize your understanding of the rights and responsibilities of private entities under the *Principles*.

HOSENBALL: As far as I'm concerned, they're the same as governmental entities. I don't see a distinction being drawn. Matter of fact, nongovernmental entities are only mentioned in one *Principle*. I don't see any special questions arising.

GABRYNOWICZ: One statement, what, if any, value do the *Principles* have—and I'll leave it at that—in your mind?

HOSENBALL: The biggest value that it has is it presses for international cooperation in remote sensing throughout, in various *Principles*. There is a push for international cooperation. It

calls attention to states that this technology exists. There is someplace you can look to see what your rights are, if you will, what your access is, if you will, as well as other provisions like dispute [and consultation] provisions…. So I think it does contribute significantly, if you wish, to space law or space principles or whatever you want to call it.

GABRYNOWICZ: Now, in the year 2002, what would your opinion be, what is the legal status of these *Principles*?

HOSENBALL: Well, I don't know whether they have been around long enough to say it's customary international law, but as far as I know, the sens[ing] states have been in compliance with these *Principles*, and it's now more than just the U.S. and the Soviet Union. You've got the French. There are others, I'm sure, coming down the line, if not in the sensing operation but at least in analyzing data on the ground. So it's pretty widespread and working pretty well. So I think it served a purpose. I suspect it's going to grow. It's growing more important. It's surprising how important it's becoming in this country, between the remote sensing data and global positioning. Farming has changed, and a lot of other operations have changed.

GABRYNOWICZ: I think I'll hand you over to Carol.

BUTLER: I just have a few kind of follow-up questions. In talking about the concerns that existed from the developing nations, particularly about national sovereignty, how much influence, if any, do you think the active work from the U.S. *Landsat* program and the access

they had to data from that program during this negotiation process, how much influence do you think that had on resolving their concerns and actually achieving passing the *Principles*?

HOSENBALL: I think it had a great deal of influence. As I mentioned earlier, we gave these speeches at the beginning of the session and with emphasis on what *Landsat* was doing and how it was being used by not only developed countries, but were being used in less developed countries. Yes, I think it was significant, really significant.

It made it easy to make arguments to get rid of the sovereignty question. Nobody has been hurt. It's [being] used now. …You're talking [19]80s, mid-80s, [so] give us an example of a detriment. How have you been taken advantage of? How has your sovereignty been affected? It's now wider spread, *Landsat 1* and *2*, I think *3* or maybe even *4* by then, for all I remember. So, yes, it had significant influence.

BUTLER: Do you think that the *Principles* have adequately addressed those concerns in the actual statements?

HOSENBALL: I think so. I think it's balanced. I think they got more than probably the sensing states got. They could have ignored the *Principles* and continued on.

I think the fact that the *Principles* were finally reached is showing a recognition that [the LDC's] e were concerned and we ought to not just shove them aside. We ought to do something to give them some assurance that in the future that we would use this technology for the benefit not only of our own country but for developing countries, for developed countries, for the countries of the world. I think [the *Principles*] served that purpose.

BUTLER: You talked about the status of the *Principles* in relation to today's events and activities, but—I just completely lost my train of thought. Oh, during my research I ran across some discussion that certain nations wanted to still consider pursuing a treaty based on the *Principles*. What are your thoughts on that?

HOSENBALL: I don't know what else would be added. You might end up with arguing more about definitions. You'd probably start with the *Principles* as a basis and start arguing about definitions and how do you define it and get more specific. Maybe set up a separate dispute procedure and that sort of thing. I'm not sure what it would add, if you were to go ahead with a treaty.

I think it would be a mistake to reopen all the old issues and reargue them, because they're going to end up basically the same way. The U.S. and Soviets probably won't change their position, and those countries that haven't developed enough won't change their position, so you'd be rearguing the same things. If you did get a treaty, you probably won't have a balanced treaty the way these *Principles* are, I think, reasonably balanced, even though I think to some extent they're more favorable to developing countries.

The U.S. and the Soviet Union and France now, the French and others, who have been carrying on these activities are not going to change. I don't know what they're going to gain. I really don't know what would be gained by reopening and starting negotiating a treaty on remote sensing.

BUTLER: One final question from me is actually very general, when we were talking about the very beginnings of you becoming involved with the remote sensing discussions, negotiations, you mentioned that the U.S. had drafted a statement not exactly proposal. We talked about the Argentine proposal and the French and Soviet. Who came up with the United States' paper position within the delegation, do you recall, and were you involved with that?

HOSENBALL: Yes, I was involved with that. They were fairly general, and so I suspect it largely came from Herb Reis and State, with coordination. NASA more than likely contributed to that draft. But they were very general things and basically in the international cooperation area. We may have had a definition in there of the type that I mentioned, but I would guess it was initiated by State, as it usually is. We wouldn't take that kind of initiative or [be] interested in taking that kind of initiative. NASA wasn't that interested in that kind [of] initiative.

…My recollection is that it was the same time that the Brazilian, Argentine Mexico, that group, and then the…Soviet-French proposal were put in as working papers, and we couldn't just stand by and do nothing. We submitted this very generalized…working paper to see if there were any common elements to get that concept moving along.

That's all I remember about it. I don't think there was really anything significant, except for the areas of international cooperation.

BUTLER: I think in both discussions, yesterday and today, we've discovered most of the topics I had.

HOSENBALL: All right.

BUTLER: Joanne?

GABRYNOWICZ: I may have one or two more tweaks. Let me ask you if the following statement is correct or not: The nondiscriminatory access policy was the U.S. answer to both the prior consent issue and the issue of third party distribution.

HOSENBALL: I think that's true.

GABRYNOWICZ: That's a correct statement? Okay. Then I think you answered these others.

In addition to the commercial questions and preparation [for] commercialization, I'd like to ask you about the value of the *Principles* regarding foreign policy at the level of nation-to-nation. What, if anything, do the *Principles* address specifically regarding nation-to-nation relationships and are they relevant to that?

HOSENBALL: Well, I think that many of the *Principles* are nation-to-nation. Technical assistance, access to data, participating in the program, that's all nation-to-nation. It was, and I think probably still, can be an important foreign policy tool, especially vis-à-vis developing countries or countries that don't have the capability to take advantage of it. The problem is that usually costs money and somebody has to budget for it.

There are a lot of other people in the foreign policy area that think that what they want are more important than this and that those should be funded. I don't know how you do it. Where would you put that activity today to try and expand that connection nation-to-nation, U.S. versus developing countries using remote sensing to assist in the development of their country? Where would you put it? Is it an aid program? If it is, it's gone. The country itself is going to want to use aid money for something other than remote sensing.

Can you make it part of the Peace Corps and send some technical people over there as part of the Peace Corps, have them tie up with the local university and spend some time and see if they can't get some foundations in this country to provide the funds to get whatever equipment is available, nongovernment money. Because I don't think you're going to get much government money. I think it's important.

Now, maybe it's already being done in the Peace Corps. I don't know. They do send specialists out. I doubt it. But it can be an important part, reaching out to the people that you really want to reach out to. You're reaching out to those that are interested in science and technology and the developing countries, the future leaders of that country as it [begins] to develop.

Right now most of our activities are directed at the developing countries by giving them assistance with farming, which is important, but it's not to the intellectual community, not to people that are interested in technology and bringing technology into their country. We don't, as far as I know, seem to be funding that kind of activity across the board.

Yes, we try and offer scholarships, bring people over here to our universities from those countries, but not that many come, and unfortunately when they're here, they don't necessarily go back to their own country. [Technical know-how] has to be taken to their

country [in] some way, [but] I don't know the way. As I say, maybe you get a combination of Peace Corps and foundation funds to get the equipment and with the technology being taught by someone that does know remote sensing technology.

GABRYNOWICZ: Well, I think I have exhausted my questions. Is there anything else you would like to say for the record or expand on?

HOSENBALL: No. You two have pretty much drained me.

BUTLER: We just want to say thank you for talking with us today and sharing with us your thoughts on the remote sensing principles.

HOSENBALL: My pleasure.

GABRYNOWICZ: Yes. Thank you from me too, as the next generation space lawyers, a member of that generation, thank you very much.

HOSENBALL: Right.

[End of Interview]