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BEFORE THE
ARIZONA NAVIGABLE STREAM ADJUDICATION COMMISSION

IN THE MATTER OF THE NAVIGABILITY)
OF THE VERDE RIVER FROM ITS) NO. 04-009-NAV
HEADWATERS AT SULLIVAN LAKE TO)
THE CONFLUENCE WITH THE SALT) ADMINISTRATIVE
RIVER, YAVAPAI, GILA AND MARICOPA) HEARING
COUNTIES, ARIZONA.)
_____)

At: Phoenix, Arizona
Date: March 31, 2015
Filed: April 22, 2015

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1 you expect to do some additional cross-examination of
2 Mr. Burtell after we finish with Mr. Dimock?

3 MR. SLADE: If we have time, certainly;
4 and tomorrow, if it goes until tomorrow, Mr. Chairman.

5 CHAIRMAN NOBLE: Let's take a break for
6 15 minutes, about 10:20. Let's come back at 10:35.

7 (A recess was taken from 10:20 a.m. to
8 10:41 a.m.)

9 CHAIRMAN NOBLE: We're online.

10

11

12 BRAD DIMOCK,
13 called as a witness on behalf of the State Land
14 Department, was examined and testified via video as
15 follows:

16

17 DIRECT EXAMINATION VIA VIDEO

18 BY MS. HERNBRODE:

19 Q. Can you tell the Commission your name?

20 A. I'm Brad Dimock.

21 Q. And what do you do for a living, Brad?

22 A. In the summer I'm a river-runner, and in the
23 winter I'm a boat builder.

24 Q. And are you also a historian?

25 A. Yeah. I've worked as a historian, written
26 biographies of river characters and river history.

1 Q. Well, let's talk about the river guide
2 portion first. How many years have you been a river
3 guide?

4 A. Forty -- this would be 45 this year.

5 Q. And about how many trips a year?

6 A. It varies. Anywhere from about zero to
7 nothing for a couple years to 13 or 14 in Grand Canyon.

8 Q. In what kind of boats?

9 A. Every kind of boat they've got, from the big
10 motorized pontoon boats, rowing rafts, wooden dories,
11 paddle rafts where you scream and holler; and also run
12 it in various historic craft, from the Powell boat to
13 sweep scow, old-style Galloway boats, modified Galloway
14 boats, Nevills boats. So I've got a pretty good feel
15 for all the major types of boats that have been run
16 down there.

17 Q. And along the Colorado?

18 A. On the Colorado.

19 Q. Okay. Have you run other western rivers?

20 A. Yeah. Probably once a year up in the upper
21 stretches of the Colorado drainage, the San Juan, the
22 Yampa, the Green River, the upper Colorado.

23 Q. Have you ever run the Verde?

24 A. I've run the Verde a lot back in the 1970s in
25 kayaks and rafts.

1 Q. How come you haven't run it since the '70s?

2 A. My attention has just been elsewhere. I've
3 been working commercially for most of my river-running,
4 and that's up north and in Grand Canyon.

5 Q. And you love the Canyon?

6 A. I do. I love the canyon country and it's my
7 home.

8 Q. The trips you went on the Verde, did you
9 portage on any of those trips?

10 A. I believe we portaged around Verde Falls once
11 or twice when we had something we thought was
12 inappropriate, like a big canoe or something.

13 Q. Okay. Have you ever run it, run The Falls?

14 A. Yeah, mostly we ran The Falls.

15 Q. Do you remember how long that portage was?

16 A. I don't remember it as being much of a
17 project at all. I think you just get out on the right
18 bank and walk around the main drop and get back in.

19 Q. And when you talk about a boat being
20 inappropriate for running The Falls, what were you --
21 do you remember why you were worried about it?

22 A. The one time I know I portaged it was my
23 girlfriend and I were just learning to paddle a two-man
24 decked canoe, and flat water was scary. So Verde Falls
25 was just like we're not going to do that, and we

1 carried around it; but then the next month we took it
2 down the Grand Canyon, so...

3 Q. Okay. And you did all the other rapids with
4 no problems?

5 A. Yeah.

6 Q. Have you ever run a dory on the Verde?

7 A. I haven't. By the time I got into dories,
8 again, my eyes were pointed northward. You know, you
9 might want to line or portage at Verde Falls, but I
10 never looked at it with a doryman's eye, so I would
11 have to reassess it.

12 Q. Okay. Do you use a life jacket when you run
13 rivers?

14 A. I do. It's the law, and in a bouncy river
15 it's only common sense. We used to not wear them,
16 unless there was an actual obvious threat ahead.

17 Q. How about a helmet?

18 A. In a kayak I wear a helmet. That's the only
19 thing I've ever -- and in a decked canoe, where you're
20 likely to be upside down and still in a boat.

21 Q. Do you check the USGS gage records before you
22 run a river?

23 A. Sometimes we did. It was a lot harder in the
24 '70s to get that information. They didn't have a
25 worldwide web. So we would usually just go and look

1 and say, "Hmm, there's no water. Let's go do something
2 else."

3 I went to run the east Verde one time and
4 that happened, so we went over and ran the Camp Verde
5 down stretch instead.

6 Q. Did you bring a GPS?

7 A. GPSs had not been invented.

8 Q. How about a map?

9 A. Sometimes we would have a map, a primitive
10 map, usually kind of a bad xerox of a USGS topo map
11 wrapped up in clear contact paper, which would usually
12 get wet and it would dissolve, so...

13 Mostly, you know, you go until you get to the
14 car, which is at the other end, so...

15 Q. Okay. Were any of those things around,
16 available in 1912?

17 A. Which things?

18 Q. The life jacket, helmet, USGS gage records,
19 GPS, that.

20 A. No, there are pictures of an expedition up in
21 Colorado in 1916 where they're wearing football helmets
22 going down the Gunnison River, which is insane, but...

23 Q. Insane to go down the Gunnison --

24 A. Yeah.

25 Q. -- or insane to wear helmets?

1 A. No, sane to wear a helmet on the Gunnison.
2 But life jackets, yeah, were available. They used them
3 on ships, and so they were made of strips of cork and
4 usually some kind of canvas sewing together. Been
5 trying to find one on eBay for years, but I think
6 they're all rotted away.

7 Q. Even in the 1970s, when you were running
8 rivers, were any of those things sort of commonly used
9 by people, or did most people just go out with a boat?

10 A. Well, I started at Prescott College, which,
11 to be nonnegligent, made us wear helmets and life
12 jackets for all of our kayaking. And so it was
13 available. Kayaking was just starting to pick up in
14 the early '70s. They invented the plastic kayak, which
15 was more durable than the fiberglass ones and the skin
16 ones before that, and that's sort of when I got into
17 the kayaking.

18 Q. So your career as a historian, you have
19 written some books?

20 A. Yeah, I've written biographies of some of the
21 lesser-known mythic characters of the Colorado River.
22 The Hyde couple, who vanished down there in 1920s.
23 Buzz Holmstrom was the first person to solo it in a
24 wood boat. I've got a replica of his boat down here.
25 And a fellow named Bert Loper, who spent almost all his

1 life on the river and died at 80 years old. I've
2 written those and then researched a lot of the other
3 characters.

4 Q. So your focus has really been Grand Canyon
5 boating?

6 A. It has.

7 Q. Do you use newspapers in your research?

8 A. All the time.

9 Q. As a historian, would you be surprised to
10 learn that not every boating account on a particular
11 river was documented?

12 A. Not at all. One of the stories I have worked
13 on is a character who went through Grand Canyon in
14 1903, who does not show up in any newspaper accounts
15 anywhere, but one of the fellows who accompanied him
16 showed up in 1951, when a river historian was speaking,
17 and told him a story and produced his diary. And the
18 diary checks out. There's no way he could have written
19 it without being there. And so -- and the fellow he
20 went with is -- went by the name of Hum Woolley, Elias
21 Benjamin Woolley; said that he had been there before.

22 So there could have been one, two, or more
23 trips that Woolley had done without telling the press,
24 and there were no press sitting by the river when he
25 put in or took out. So it was never recorded.

1 Q. And he did pass by some towns that had
2 newspapers?

3 A. Yeah, he went all the way down to the gulf.
4 So he went through, you know, Needles, Blythe,
5 Ehrenberg, Yuma. But there were trappers down there,
6 so it wouldn't surprise him to see a person in a boat
7 at Needles, but, you know, they didn't get out and say,
8 "Oh, oh, we just ran the river."

9 And there are other little accounts that you
10 come across that you can't verify of people who said
11 they went down the river. I think I'm trying to
12 remember one out of Williams that mentioned a fellow
13 who had just gone down the Colorado and who the hell is
14 that, and that's the only account, so you don't know.
15 I mean there's no witness. There's no journal.
16 There's no interview. So...

17 Q. And the Colorado is fairly well-researched;
18 there are a lot of people in Grand Canyon who are
19 interested in that little history?

20 A. Correct. But, you know, in the early 1900s
21 and the 1800s, there were no people near the river at
22 the remote points, and so no one to witness it and
23 write a story about it.

24 Q. Have you looked at some of the materials from
25 the 1931 case where the navigability of the Colorado,

1 Green, and San Juan Rivers in Utah was decided?

2 A. I've looked at a lot of it, primarily when
3 doing my river history writing, because each of the
4 significant boaters or residents along the river was
5 subpoenaed for that, and so if you wanted to know the
6 history of any of those early boaters, you could go to
7 that riverbed case and they'll get them to tell their
8 whole life story as part of that. So I've used it a
9 lot. It's a great resource.

10 Q. And you've run these rivers?

11 A. Yeah.

12 Q. Does it surprise you that the Special Master
13 in that case found that you needed 3 feet of water for
14 navigability?

15 A. It does, because there isn't a boat that's
16 been run on any of those upper rivers that would need
17 3 feet. There were a couple little steamboat
18 adventures near Moab to Green River and a little bit up
19 in Green River, Wyoming, and maybe a steamboat. But
20 even those were only drawing a foot or two, and they
21 didn't prove practical. But all the river expeditions,
22 they're drawing 6, 8, 10 inches, maybe a little more.

23 Q. You run commercial dories through the Grand
24 Canyon?

25 A. I do.

1 Q. How much draw does a fully loaded commercial
2 dory take?

3 A. A fully loaded dory is a very heavy boat for
4 its size, and it can draw, with the heaviest load we
5 run, 10, 11 inches, and that's tough to row.

6 Q. How many pounds of gear and passengers is
7 that, about?

8 A. That's four passengers. The passengers are
9 getting bigger. And we probably put in maybe a ton of
10 gear in the boat. That's just a wild guess. And
11 myself.

12 Q. Okay. So I would like to move on to the boat
13 builder, and at some point we'll go down and look at
14 your boats, but we'll stay in the warmth for a little
15 while longer.

16 You're located in Flagstaff?

17 A. I am in Flagstaff.

18 Q. What's your boat building education?

19 A. My boat building education sort of began
20 self-taught as we would break dories, crashing dories
21 and having to fix them on river and then fix them
22 better when we got back to the warehouse, taking them
23 apart, rebuilding them.

24 I broke one in two in 1988 and had to do a
25 full rebuild in the winter, and eventually started

1 building complete boats, and all sorts of different
2 techniques, old lapstrake and plywood boats, and
3 working with some pretty good boat builders along the
4 way, reading a lot of books. And the last four years
5 I've been training at WoodenBoat School in Maine under
6 some of the best boat builders in the country, and
7 continuing with the self-taught process as well.

8 Q. And the boat you broke in half, that was on
9 the Colorado?

10 A. That was a dory on the Colorado River in the
11 Grand Canyon. Sad day.

12 Q. How many boats have you built?

13 A. Oh, a few dozen.

14 Q. Okay, let's talk a little bit about one that
15 you've built.

16 Are you familiar with the boat the Kolb
17 brothers used for their -- or the boats the Kolb
18 brothers used for their Grand Canyon trip?

19 A. I am intimately familiar with the Kolb boats
20 and replicated one.

21 Q. Okay. The one that we still have in
22 existence is the Edith?

23 A. They're both in existence. The Defiance is
24 on display in Utah. The Edith is up at South Rim.

25 Q. Okay. And you're familiar with it because

1 you've worked with it at Grand Canyon?

2 A. Yeah. I've been around the original boat a
3 lot. I built the display carts on which they sit, and
4 I've been in, out of it, all around it, measuring it,
5 documenting it, and gone through the blueprints that
6 were made from it. So I could answer a lot of
7 questions about that boat. It's an amazing boat.

8 Q. How big is it?

9 A. I would have to put a tape on it. I think
10 it's 18 feet.

11 Q. And how wide?

12 A. About 4 feet, so very narrow compared to a
13 modern boat.

14 Q. Does she have cargo compartments?

15 A. Yeah. It has two cargo compartments, one
16 forward, one in the rear, which the Kolb brothers had
17 lined with zinc boxes. I didn't do that.

18 Q. And they did that to try to waterproof
19 their boxes a little bit.

20 A. Yeah, they knew that the wood boat would
21 crack and leak and so forth, and they had cameras and
22 film they wanted to keep dry. It didn't work, but...

23 Q. How much weight can she carry?

24 A. Boy, that boat would carry a lot. And, of
25 course, the more you put in, the less manageable it

1 becomes, but I bet you could put a ton in that boat.

2 Q. What kind of cargo?

3 A. Oh, whatever you wanted. You know, I just
4 put in food and beer, but anything.

5 Q. You could replace the beer with skins or the
6 food with skins?

7 A. Yeah, you could put skins, if you're out
8 there being a trapper. You could put a fair amount of
9 mining supplies in it. You could fill it full of
10 staple goods and go down the river being a merchant.
11 You could do a lot of things with a boat like that. I
12 think anything you want to carry you could put in
13 there, except livestock. You could put chickens in it.

14 Q. There you go.

15 Why did the Kolb brothers have the Edith
16 built; what were they planning on doing?

17 A. Well, the Kolb brothers wanted to go down the
18 Green and Colorado down the Powell route that Powell
19 did in 1869, but they knew there was better technology
20 available. A fellow named Nathaniel Galloway had
21 designed and had been using a boat that was flat on the
22 bottom, instead of keeled, like a Powell boat is, and
23 so it didn't hit the rocks so much and pivoted a lot
24 better.

25 And Galloway had done a second Grand Canyon

1 trip a few years before the Kolb trip, and they wrote
2 back and forth by mail, got the design from Galloway
3 and his friend Stone, and then sent that design to a
4 boat builder back in Racine, Wisconsin, and had them
5 built professionally.

6 Q. In what year did they start on their trip?

7 A. 1911. Boats were built in the winter of
8 1910, 1911 and shipped out to Wyoming, and they
9 started -- oh, I can't remember when. Mid-summer, I
10 think.

11 Q. Did they make it all the way through Grand
12 Canyon?

13 A. They did. They had a long layover halfway
14 through because they lived halfway through on the rim,
15 and when they came out, they found Emery's wife was
16 very, very ill, so they took a month off while she got
17 better, and then continued on through to Needles.

18 Q. Did they have any issues?

19 A. They had a lot of issues. Neither one of
20 them knew how to row when they started, and they had
21 been told by Galloway and Stone, you know, the theory
22 of the technique; but learning that technique is not
23 that easy in a heavy, old wooden boat, and so they
24 crashed and burned. Well, they didn't burn, but they
25 crashed, put holes in the boat, and they had to patch

1 them a lot, portaged them, lined them, pushed them over
2 the rocks, and -- but they're tough American men; you
3 know, that it doesn't matter what gets in your way, you
4 find a way to overcome it, which is the way a lot of
5 boating was done in those days.

6 Q. And I think we have a photo in the record of
7 the Kolb brothers on their trip through the Grand
8 Canyon where they're looking out through a hole in a
9 boat. Is that the Edith?

10 A. That is the Edith.

11 Q. I think you have another picture of it down
12 where the boat is, so...

13 A. Yeah, Emery had just watched his brother flip
14 over in the deep water, so he pulled into the shallow
15 sideways and, pow, T-boned the thing. And that boat in
16 particular is not designed to be hit from the side, and
17 the whole side collapsed.

18 Q. But they fixed it down at the bottom of the
19 canyon?

20 A. They fixed it and went on. Took a couple
21 pictures of them waving through the hull and put up a
22 Merry Christmas sign, because it was Christmas. It
23 didn't bother them much.

24 Q. And I think you said they lined or portaged
25 some of the rapids?

1 A. They did. Lining, where you're actually
2 lowering the boat through the water without picking it
3 up is difficult work, slippery rocks and the boat
4 pulling against you, but it's a lot of times easier
5 than actually unloading and carrying the boat,
6 especially when there's just two of you. So they lined
7 a lot and portaged some.

8 Q. And what did they do with the film they had
9 taken on that trip?

10 A. They took it home and edited it into an
11 absolutely dreadful little movie, which became the
12 longest running movie in the history of the world.
13 They ran it four times a day for 60 years.

14 Q. And you built a replica of the boat the Kolb
15 brothers used to float the Colorado?

16 A. I did for the centennial of their trip. I
17 built an exact replica and used the same type of wood,
18 same type of hardware, same techniques. And the only
19 thing I didn't do authentic was I could not bear to
20 paint it battleship gray, which is what they did. I
21 left it natural.

22 Q. And you call your replica the Edith as well?

23 A. I do. It's my mom's name.

24 Q. And you've run her through Grand Canyon?

25 A. I've run it through Grand Canyon and Cataract

1 Canyon, and they're both pretty serious whitewater.
2 I've run it through Lodore Canyon on the upper Green,
3 which is a very shallow, steep, rocky thing. Hit some
4 rocks pretty darn hard in it thundering through the
5 bottom of Hell's Half Mile. Made my GoPro jump.

6 Q. Did you line or portage any rapids?

7 A. I didn't. And, you know, a lot of these
8 replica trips are very inauthentic because a modern
9 boat you do not want to line or portage. You have got,
10 you know, a hundred years of passed-down growing skills
11 that our skill set is something that was unavailable
12 then, and we can run just about anything pretty
13 successfully, and so we do.

14 Q. Could you use the Edith on a Verde or another
15 relatively shallow, rocky river?

16 A. Yes, you could.

17 Q. How about on a sandy river?

18 A. Absolutely.

19 Q. Would you be concerned about hitting rocks on
20 the Verde?

21 A. I would be concerned, but not horribly
22 concerned. You know, you always hate to hit rocks, but
23 on a river like that, you would be hitting them all the
24 time, and wood is tremendously resilient. It wouldn't
25 be a real problem.

1 Q. Would you be concerned about scraping the
2 bottom?

3 A. No. Bottoms are made to be scraped. You've
4 got an inch or so of wood, and on those style boats
5 there are runners of oak that are even beneath that,
6 which take a lot impact.

7 Q. And Edith isn't the only replica boat you've
8 built?

9 A. No. I've built a modified Galloway, which is
10 sort of the next step in the evolution. Built in the
11 1930s originally. It's shorter, wider, more up-kick,
12 so treading more toward the modern dory design that we
13 have today, and that one was run all over the West.
14 And it's built in the old plank style, unvarnished, you
15 know, unpainted. And it's got about 4,000 miles on it
16 on rough, shallow rivers, a lot of it. And I've built
17 plywood replicas of the Nevills' boat, plank replica,
18 the Glen and Bessie Hyde's sweep scow, and I've run all
19 the way through the Grand Canyon.

20 Q. And you build more modern boats as well?

21 A. Mostly I build what we call dories, which are
22 an Oregon drift boat design that evolved in Oregon in
23 the 1930s. The really great designs came around the
24 1960s and '70s, and those are the designs that we still
25 use today. The last 40 years nothing's evolved,

1 haven't seen better.

2 Q. Let's talk a little bit about materials. Do
3 modern finishing methods make wooden boats more durable
4 today than they were a hundred years ago?

5 A. No. They make the prettiness of them more
6 durable, perhaps. You know, varnish is very pretty,
7 but it doesn't make the wood stronger. I prefer to use
8 oils because you can hit it again and again and again
9 and just rub a little oil on it again and it looks
10 great. But the durability has not been enhanced by the
11 finish on it. The wood is stronger than the finish.

12 Q. One of the things the Commission needs to
13 determine is if modern boats are meaningfully similar
14 to the types of boats being used on the Verde today.

15 So I guess the first question is what kind of
16 boats were available in 1912?

17 A. Well, from the small end, kayaks had just
18 come on the market about two years earlier. Klepper
19 from Germany started producing a collapsible kayak,
20 which we can see a sample of, that their design did not
21 change; that today they still make them. The materials
22 are somewhat better. The skin is a Hypalon rubber,
23 rather than a gummy rubber or a canvas, but a very
24 tough, tough kayak. That was available.

25 Canoes, there were collapsible canoes with a

1 heavy wire steel frame with canvas that were being used
2 in the Grand Canyon around then in the flat water and
3 small riffles.

4 Big freight canoes, Peterborough freight
5 canoe you could get, which are an incredibly tough, old
6 beast. They used those on the first descent of
7 Westwater Canyon, actually, a couple years later in
8 1916.

9 So you got the kayaks, canoes.

10 In terms of rowboats, a lot of home-built
11 boats, and home-built boats you never know what they're
12 going to be; a bunch of planks with a couple of sides
13 nailed on. A lot of the early Grand Canyon boats
14 that's what they were, and if you don't have a picture,
15 you don't know what it was. So you got Hum Woolley's
16 boat, the Flavell boat. You don't know what they were;
17 something somebody whacked together.

18 Commercially, steel boats were very popular
19 around then. Right around the turn of the century they
20 started making these things. Michigan Steel Boat
21 Company made the boats used on the 1907 trip through
22 Grand Canyon, and they're kind of like a Powell boat.
23 They had a bit of a keel to them. Not terribly
24 appropriate for whitewater, but nobody knew that.
25 They're mainly made for the Midwest, where people would

1 take them out on a lake for a family picnic. Well,
2 people started taking them everywhere; you know, steel,
3 it's unsinkable. So you could get those delivered by
4 train out West. They're 50 bucks. They used them
5 again in 1914, the Mullins steel boats, which was a
6 very popular brand. And I'm not sure what else was
7 available to buy.

8 There were boat builders, of course, out on
9 the coast that would build you anything. In Arizona I
10 would imagine they were either buying steel boats or
11 they were building something themselves; more likely
12 the latter.

13 Q. We have an account in the record, actually,
14 of two brothers who made at least five trips from Camp
15 Verde to Yuma in a home-built boat, trapping furs that
16 they later sold. Do you think building a boat like
17 they did would be impossible or unusual?

18 A. No. No, I think it was very common. You
19 know, it's just our perception of what it takes to do
20 some of these things has changed so radically. People
21 were so handy back then. Building a boat was, "Okay,
22 I'll build a boat."

23 And so, you know, you might look at a book or
24 you might just say, "I saw a boat that looked like
25 this," and you get someone who is a half-decent

1 craftsman and they can make a box that floats and they
2 call it a boat and off they go. Some of the
3 contraptions people were running on rivers were just
4 comical, but people are adaptable.

5 Q. I think there was a guy on the Colorado who
6 started running in a wooden horse trough?

7 A. Well, that's Norman Nevills, and there's a
8 bit of urban legend of that, but it was a modified
9 horse trough/outhouse that -- you know, and he didn't
10 change the design very much, and that was Nevills'
11 first trip with his bride, whose maiden name was Doris
12 Drown.

13 Q. Oh, dear.

14 A. But they didn't. Died in a plane crash.

15 Q. Were any of these small boats you've been
16 talking to used to carry cargo or passengers?

17 A. Yeah. Cargo meaning food supplies, yes.

18 Q. Trappers?

19 A. Trappers were carrying skins. Galloway was a
20 trapper. That's why he designed that boat, and he
21 would go out for many, many months at a time in these
22 things and just heap them full of skins and ship them
23 back.

24 Q. Mining equipment?

25 A. What's that?

1 Q. Mining equipment?

2 A. Sure, you could carry mining equipment. You
3 could carry staple foods to sell. I know in Idaho in
4 those days, people would load up their boat with all
5 the staple goods, you know, the good trade items,
6 coffee, tobacco, whiskey, sugar, flour, and end the
7 trip six months later with pelts and maybe a few bags
8 of high-grade ore from the miners or something. So
9 boats have always been a great trade mechanism.

10 Q. Did they have some kind of dry bag equivalent
11 that you could stick stuff in?

12 A. Oh, not so good. There was natural rubber
13 that was used in making some bags that you could roll
14 them tight and they would be watertight, but they
15 usually would crack and leak. They dried stuff out a
16 lot in those days. They had tin cans with screw-on
17 lids. Some people were carrying stuff in those.

18 But no plastic bags, no Jack's Plastic
19 Welding river bags at all. Even when that started in
20 1971, the waterproof bags were not waterproof. It was
21 pretty primitive even then.

22 Q. Do you need a break, or are you doing okay?

23 A. I'll go on forever.

24 Q. Okay. Second question. Could you have used
25 these types of boats, the canoes, kayaks, rowboats, in

1 a relatively shallow, rocky river like the Verde?

2 A. Yes, they could have used any of those boats
3 on the Verde.

4 Q. How about a braided sandy river? And let me
5 talk a little -- let me distinguish a little bit about
6 braiding, because we have had some disagreement among
7 the experts as to what a braided river looks like. So
8 some experts characterize a river where there is an
9 occasional braid, where in some places the river is two
10 or three distinct -- taking two or three distinct paths
11 and then comes back together as braided. Some experts
12 have characterized the river as braided where the
13 majority of the river is in multiple paths.

14 On either of those things, could you have
15 used canoes, kayaks, rowboats?

16 A. Absolutely. In fact, the Klepper is the boat
17 of choice in the braided rivers of Alaska, where these
18 rivers just fan out into literally hundreds of channels
19 that just dry up at a moment's notice, and you get out
20 and drag it over and continue on.

21 And, you know, on the San Juan today we run
22 braided channels, sandy, braided channels, and we run
23 aground all the time, and it's always, oh, goddamnit;
24 get out, pull it over, get back in, and continue on.

25 In dories, in canoes, in kayaks, in rafts,

1 it's very common, and braiding isn't a problem at all.

2 Q. We have an account of some guys in 1905 who
3 took some iron boats down the Verde and got somewhere
4 around Beasley Flats and decided they didn't want to go
5 any further; that their boats were too heavy.

6 Does that change your opinion about whether
7 or not historic boats were appropriate to use on the
8 Verde?

9 A. No. I'm curious as to what an iron boat is.
10 If they were the steel boats that were commercially
11 available or something a blacksmith hammered out. But,
12 you know, in any endeavor you'll find people who say
13 this is stupid and they quit, and other people forge on
14 through.

15 Q. So I guess the next question is, what does
16 meaningfully similar mean? So let's talk about some
17 boat characteristics, the things that make a boat
18 suited for a particular use.

19 So would draw be one of those things?

20 A. Yeah, the amount of water a boat draws, and
21 the kayaks and canoes would be very similar to today.

22 The wood boats are a narrower profile, and
23 they're going to draw more than the big, wide rafts of
24 today, which means you'll run aground a little more
25 often, but...

1 Q. Okay. Handling?

2 A. Handling is entirely a function of the design
3 of the boat. The wood boats that were designed with
4 more of an up curve toward the end, which is already
5 happening in the late 1890s on the San Juan and the
6 Utah, those handle very well, similar to how a raft
7 handles today.

8 Q. Weight?

9 A. Weight, depends on how you build them. You
10 could build a wood boat that would be lighter than a
11 raft. You could build one that could be far heavier.

12 The Edith, for example, is built to withstand
13 major calamities and it's terribly overbuilt, so it's
14 going to be a good deal heavier than a raft; but you
15 could also build, with a light planking, a very light
16 boat that you could pick up in one hand.

17 Q. Durability?

18 A. Durability, I will say modern rafts take a
19 beating for a lot longer than a wood boat, but modern
20 rafts are designed to be used over and over and over
21 and over and over again; whereas the wood boats in
22 those days were maybe going to do one trip, because
23 there's nobody there in their car to drive them back to
24 the put-in. They would probably build another boat.
25 So in terms of durability, they would last a trip or

1 two, no problem.

2 Q. Cargo capacity?

3 A. Pretty similar. Kayaks today hold less than
4 the historic ones because they're making them very
5 small. The modern ones turn quicker. But they're
6 terrible for expeditions. Something like a Klepper is
7 the expedition boat of choice and the boat very similar
8 in shape that I first learned to kayak with on the
9 Verde and Salt, and we like that because you could put
10 so much gear, their sleeping bags and food and beer,
11 and so, yeah, but those things held about the same
12 amount.

13 An open wood boat you can put a tremendous
14 amount of gear in; some of the pictures of the old
15 boats just heaped high with pelts and stuff. So I
16 would say similar.

17 Q. Any other boat characteristics you can think
18 of that we should talk about?

19 A. I don't know. I mean transport is one thing,
20 but I think I kind of covered that. Rafts these days,
21 they're easy to get to and from, mostly because there's
22 roads and cars. I run a big wood boat and I take them
23 everywhere where the rafts go. But in those days
24 they're probably building them on site or in some cases
25 bringing them in by rail.

1 Q. Okay. So I want to just highlight any
2 possible differences to make sure I've got them. So
3 the draw isn't really any different between boats today
4 and boats in 1912; the laws of physics haven't changed
5 or anything exciting like that?

6 A. No. As I said, the wood boats are narrower,
7 and they're going to draw a bit more.

8 Q. And turn too?

9 A. Depends on the boat and what you put in it.

10 Q. All right. So has boat shape changed
11 significantly; is a canoe today roughly the same shape
12 as a canoe in 1912?

13 A. There's a million variations of canoes today.
14 They were more standardized then. But canoes, in
15 general, look a lot like canoes used to look.

16 Kayaks have gotten, just in the last few
17 years, much shorter; just like skis now, shorter and
18 wider. But still a similar shape. I mean I still
19 paddle a Nanook of the North style kayak.

20 The rafts, as I say, are much wider than the
21 old wood boats were, and so they do draw less and they
22 can carry a bit more capacity, and they're made more
23 maneuverable.

24 Q. When you're talking rafts, you're talking the
25 big commercial style rafts that are used in the Grand

1 Canyon; not --

2 A. Well, the paddle rafts and small rowing rafts
3 that are used on the Verde, and the Salt as well, are
4 wider at the oarlocks than most of the historic wood
5 boats were. They did start building them wide, a few
6 folks, pretty early on, and it was like, wow, do these
7 work better; but didn't really catch on until the '50s.

8 Q. Okay. But in 1912 there were some people
9 building them a little wider?

10 A. There are some accounts I know in Oregon of
11 these guys building these bathtub things, and people
12 made fun of them, but they worked better.

13 Q. Is the weight of a wooden boat -- or, I'm
14 sorry, is the weight of a boat made of modern material
15 substantially different than that of a wooden boat?

16 A. Well, I mentioned that earlier. Depends on
17 what kind of wood you use and what style of boat you're
18 building. The canoes, light, thin planking, and you
19 can come up with a very light boat. You can use heavy,
20 thick planking and come up with a very heavy boat,
21 so...

22 Q. Is there a difference once the wooden boat
23 gets waterlogged?

24 A. They do take on a bit of water. Any boat
25 that's strong enough to withstand boating is probably

1 not going to soak up a tremendous amount of water.
2 What it does change, though, is the durability of the
3 boat. Waterlogged wood is much more resilient to
4 impact, really hard to break with a stick.

5 Q. Would you estimate -- how many pounds would
6 you estimate difference spread for the Edith between
7 its dry weight and its wet weight?

8 A. I would be pulling a number out of thin air,
9 but I think 20, 30 pounds maximum. Really can't hold
10 that much water, unless it's just completely rotten and
11 holds a lot and the boat just falls apart.

12 Q. Is there a difference between the
13 expectations of historic boaters and those of modern
14 boaters?

15 A. Yeah. Modern boaters think everything is
16 going to be just fine, and they've got a map and their
17 buddies have all done it, and they think they're going
18 to be able to drink beer all day and get to the end of
19 the trip and be fine.

20 Historic boaters had no such preconceptions.
21 They didn't know what was going to happen. They're
22 explorers. They're mountain men. They're going into
23 it cocky or they wouldn't be doing it; thinking I can
24 do this, but ready for anything, you know, to sink
25 their boat and hike out or whatever.

1 So totally different expectations. I mean
2 their plan, obviously, is to take their boat and go
3 down from one end of the river to the other, but
4 historically they were planning on or expecting a lot
5 of problems.

6 Q. If you were to build a boat from historical
7 materials for the Verde, would it be a bit different
8 from one you might build for the Grand Canyon?

9 A. Yeah, if -- but, of course, I know too much.
10 You know, I've been a boat builder and I've run all
11 these rivers; whereas those guys haven't. But I would
12 build a smaller, lighter craft for a smaller river.

13 Q. Would it be different than what you might
14 build for the San Juan?

15 A. Somewhere in between. You know, the
16 San Juan's a bit more flow than the Verde. I would
17 build a small, quick-turning boat for the Verde.

18 Q. The Salt?

19 A. The Salt, depends on the stretch. From the
20 Route 60 bridge on down, I don't think -- for several
21 miles I wouldn't be very happy to be in a wood boat.
22 Other stretches of it, as you get further down, you
23 could portage the nasty stuff and get away with it in a
24 wood boat; and then, of course, down below Roosevelt a
25 wooden boat would be fine.

1 Q. If you built a boat for one of these rivers
2 and tried it out, do you think you might modify the
3 design a bit after running it a time or two?

4 A. Depends how many trips I had in mind.
5 Modifying a wood boat is a project, and so usually you
6 build it and you run it and you make do with it.

7 If I was going to run it every year and the
8 boat was wearing out, I might say, okay, I'm going to
9 take some of these ideas; maybe I'll make a little more
10 rocker or make it a little wider or a little smaller or
11 a little bigger, but you're not going to, probably,
12 change your whole shape between trips.

13 Q. But if you're doing like we were talking
14 about historic boaters typically do, which is to make
15 one run through, and then the next time they run
16 through, build a new boat, you might build a slightly
17 different boat the next time?

18 A. Yeah, yeah. If you're building a homemade
19 boat, you would probably incorporate what you learned
20 the last time.

21 This fellow Hum Woolley I mentioned, the
22 mysterious Hum Woolley, who seems to have run the Grand
23 Canyon in 1903, and probably before that, when he built
24 that boat, the guy who helped him build it said he told
25 me it was the best boat he had built yet, meaning he

1 was incorporating ideas from previous boats that were
2 probably not so good.

3 Q. Perhaps starting out something like a cross
4 between an outhouse and a horse watering trough?

5 A. Yeah. I mean Nevills, that was his first
6 boat, and he built better and better boats. I still
7 don't like his boats, but they're better than a horse
8 trough.

9 Q. From your perspective, as someone who builds
10 and runs historical replica boats, is information about
11 modern recreational boating highly relevant to your
12 decision about whether a river would be navigable in a
13 historical boat?

14 If you know other people are running it in
15 modern boats, does that inform your decision?

16 A. Yeah. Yeah, it depends on what kind of boats
17 are being run on a river. You know, if it's just
18 young, hairball guys in creek kayaks, I don't think I
19 want to go down there in a wood boat. But if it's
20 families in inflatables, I would say I could probably
21 do that in a wood boat.

22 Q. People in canoes?

23 A. Canoes? Canoes are known for incompetent
24 drivers. Not -- present company excepted. Canoes have
25 more wrecks than anything.

1 So if people are routinely canoeing it who
2 aren't good canoeists, I would certainly take a wood
3 boat down there.

4 Q. Would you say, based on your experience as a
5 boat builder and river-runner, that modern kayaks are
6 meaningfully similar to kayaks used around 1912; in
7 other words, that they have similar draw, handling,
8 weight, durability, and cargo capacity?

9 A. Yeah, I would say meaningfully similar. The
10 kayak that we have in the driveway, which is a 1910
11 style, is very similar to what I was paddling in 1970.
12 In the last few years they have gotten shorter and a
13 little more bulbous, but still pretty darn similar.

14 Q. And you're not saying that you know of any
15 kayaks that were being used in Arizona in 1912, but
16 they were available for sale in the United States, and
17 they were used to carry cargo in other places around
18 that time?

19 A. Yes.

20 Q. Would you say, based on your experience as a
21 boat builder and river-runner, that modern canoes are
22 meaningfully similar to canoes used around 1912; in
23 other words, that they have similar draw, handling,
24 weight, durability, and cargo capacity?

25 A. Even more so, yeah. You know, the

1 Peterborough freight canoes of 1900, they're probably
2 still building that boat today. It's just a big,
3 beautiful canoe and tough as nails, and it's called a
4 freight canoe for reasons.

5 Q. Would you say, based on your experience as a
6 boat builder and river-runner, that modern duck boats,
7 dories, rowboats, and flatboats are meaningfully
8 similar to duck boats, dories, rowboats, and flatboats
9 used around 1912; in other words, that they have
10 similar draw, handling, weight, durability, and cargo
11 capacity?

12 A. In terms of hard boats, yeah. Yeah. The
13 inflatable boats are different. Yeah.

14 Q. And you have experience with the canvas
15 canoe?

16 A. I've never been in one. I've seen them.
17 I've touched them. I've seen how they're put together.
18 And I know that they were running them on swift rivers
19 and small rapids, but that's about all I can tell you
20 about them. Dave Rust was taking them all over the
21 place at the turn of the century.

22 Q. In Arizona?

23 A. Arizona and Utah and the Colorado and others.
24 You know, there's a canoe or something -- we don't even
25 know what it is. -- down in Grand Canyon some

1 prospector kind of put together, and he dragged it up
2 under a ledge and it's still there, and it looks like
3 it's partially manufactured and partially jury-rigged
4 as the parts broke or wore away, and the skin is gone,
5 but, you know, there were people doing that.

6 Q. So let's talk about a particular historic
7 boat we know was used for commercial purposes in
8 Arizona around 1912, the Edith.

9 Let's say I invite you on a river trip on a
10 river neither of us has run before. We know nothing of
11 the characteristics of the river, its depth, width, or
12 anything, and we don't have any maps. The only thing
13 we know about this river is it's run by thousands of
14 people in canoes every year.

15 Do you have any hesitation about putting the
16 Edith on that river?

17 A. No. No. As I said, canoes go wherever wood
18 boats go.

19 Q. Okay. Thank you very much for your testimony
20 today.

21 (End of Video 1.)

22 CHAIRMAN NOBLE: Is that it?

23 MS. HERNBRODE: We have a little bit we
24 go down and look at his boats, so...

25 It's shorter, though.

1 (Start of Video 2.)

2 MR. FULLER: Okay, we're on camera.

3 THE WITNESS: 16 foot 8; same size as a
4 dory.

5 BY MS. HERNBRODE:

6 Q. Same length.

7 A. Length.

8 And 4 feet.

9 Q. Okay.

10 A. There's the Holmstrom boat. It's 6 inches
11 wider.

12 Q. And the Julius is a later design?

13 A. 1930s. About a foot shorter.

14 Q. Okay. But, essentially, it's the same kind
15 of construction?

16 A. Yeah.

17 Q. All right. And how many miles did you say
18 you had had on the Julius?

19 A. About 4,000.

20 Q. All right. You hit a few rocks on the way?

21 A. Oh, yeah.

22 Q. But it doesn't have any big holes in it?

23 A. No holes.

24 Q. All right. Bottom looks all right?

25 A. Bottom looks fine.

1 The biggest problem the bottom had is
2 transport. In Arizona we have low humidity, and
3 waterlogged wood shrinks, swells, shrinks, swells,
4 shrinks, swells, which in a boat you're going to keep
5 and keep moving around in the desert, it's kind of a
6 problem; but probably not that big an issue back then,
7 because you're only using them a couple times.

8 Q. Okay. So let's talk a little bit about the
9 Edith. Can you show us the cargo compartments on it or
10 where they are?

11 A. Yeah. Big compartments here, that you open
12 up these thumb screws, and you reach down in there and
13 jam stuff all over inside.

14 Q. And that goes all the way to the front of the
15 boat?

16 A. Goes from here all the way up to the point.

17 Q. Okay.

18 A. And, again, in the Kolb boat they lined that
19 with zinc, and that's because they wanted to try and
20 keep something draw. Didn't succeed.

21 Q. Okay. And then you've got one in the back
22 too?

23 A. A larger one in the back. You can actually
24 put a tremendous amount in this boat. And I cheated on
25 one of my runs in this and I built a couple cargo boxes

1 that just sit in here, but it's an open cockpit. But
2 the Kolbs actually talk about having a box in there,
3 but I don't know what it was. So I took that liberty
4 and built a big box.

5 Q. Okay. And I notice that it has canvas on the
6 top?

7 A. Yeah, and this is traditional. You stretch
8 canvas over the deck and then paint the canvas, and the
9 canvas lasts a tremendously long time, incredibly
10 tough. It's not glued on. It can shift around.

11 Q. But there's wood under the canvas?

12 A. Yeah, there's wood just like this. So these
13 are built the same, and they have a plank bottom, which
14 takes great abuse, and you can see these runners along
15 the bottom that are oak that take a lot of the major
16 hits. And then the sidewalls are screwed on and then
17 riveted, overlapping riveted. That's called lapstrake
18 construction, copper rivets. And then the deck is thin
19 planking with canvas over the top and paint.

20 Q. So when we talk about a wooden canvas canoe,
21 would it be made similar to the top?

22 A. The ones I know of, yeah. What you do is you
23 would make a frame and run very thin wooden planking,
24 wooden strips along it, and then stretch canvas over
25 the top of that. And I've seen it done. At WoodenBoat

1 school they built a few of them, and it's an amazing
2 process.

3 Q. And the canvas adds a little bit of --

4 A. It's waterproof and it's strong, and it goes
5 on very tight, just like this. So your exterior is
6 going to look a lot like that.

7 Q. And I think you have a poster board there
8 with a picture of the Edith with a hole in there?

9 A. Yeah.

10 Q. Not this Edith with a hole in there.

11 A. Yeah, that's the Kolb brothers, and they took
12 a side hit. And when I built this replica, I looked at
13 the construction of the way the side was built, and I
14 went, boy, if you took a really hard hit, the whole
15 side would collapse. And I think it's just the guys in
16 Racine who built it, never occurred to them to build it
17 for that kind of strength.

18 Q. It's made --

19 A. Another boat builder might have built it a
20 little different.

21 Q. It's made to hit things with the front --

22 A. Yeah.

23 Q. -- not with the side?

24 A. (Witness nodded.)

25 Q. But as long as you keep your boat pointed

1 downstream, you should be okay?

2 A. Yeah. Basically, these side ribs, these oak
3 side ribs, just butt-joint onto the interior corner
4 board, so there's nothing to keep that side from just
5 blowing in. These little boards here, they're just
6 butt-jointed onto that chine log, which is really
7 silly. But that's not the standard for the day. That
8 just happens to be how the Edith was built.

9 But it's is a very typical type of
10 construction. It's a peculiar design, because it was
11 the one that Nathaniel Galloway came up with, having
12 run the Palisades up in Utah, and he thought flat from
13 side to side, upturned ends. And he was right, and
14 they're pretty good. And in their day I mean these
15 were the rocket ship. These were the best thing going.

16 Q. It doesn't fit it quite as well as your
17 modern dory?

18 A. No. The shorter and fatter you make them,
19 the better they float.

20 So this one is 1930s; 6 inches wider, a foot
21 shorter. It was way longer. And then a dory is going
22 to be another foot wider on the bottom and probably
23 2 feet shorter on the bottom and flared sides, and so
24 you get the runoff would be way out here, which gives
25 you a tremendous amount more leverage. So that's the

1 evolution to where we are today.

2 Q. Okay. There was some evolution in how you
3 run rivers too, running them facing forward rather than
4 facing backwards?

5 A. Well, Galloway started facing downstream in
6 the 1890s, and he's famous for that, and it's called
7 the Galloway-style; but Bert Loper was doing it in the
8 1890s on the San Juan, and he didn't ever meet Galloway
9 until years later.

10 And so it's a style that's going to evolve
11 anywhere in shallow water. If you're rowing backwards,
12 you're gonna crash. If you turn around and row
13 upstream, you're going to see what you're doing and
14 you're going to slow down and you're going to move
15 sideways.

16 So I think anywhere where they were running
17 shallow, rocky streams, that exact same style evolved
18 almost instantaneously or they gave up on it.

19 Q. Have you ever hit something pretty hard with
20 either one of these boats?

21 A. Yeah. I hit this one hard enough to stop and
22 bounce it in Upset Rapid.

23 Let's see if we can find where it hit. I
24 don't think you can see it.

25 Q. And that's on the Colorado in Grand Canyon?

1 A. No, you can't even see it.

2 Yeah. Yeah. What happened was just in a
3 very big rapid. There was a rock at the bottom of one
4 lane that sort of surfaces for about every 20th boat,
5 and I got unlucky.

6 Q. All right.

7 A. The Edith took some pretty good bottom hits
8 up in Lodore, at pretty good velocity as well. The
9 steepest rapid in the system is called Hell's Half
10 Mile. It was never run until the 1920s, when Bert
11 Loper ran it in an 18-foot Galloway.

12 And so I ran this through it and I hit a rock
13 pretty good, but it didn't do any damage.

14 We could hoist it up and -- oops, the hoist
15 is gone.

16 Q. That's all right.

17 A. I don't want to go down under it. My knees
18 don't want to do that.

19 Q. All right.

20 A. But, yeah, these plank boats are very strong.

21 Q. Okay. And it's got some copper on the edges
22 to kind of deck the corner?

23 A. Yeah. The copper is a bit of a mystery to
24 me, why they would use copper. It's very soft for a
25 protection. All it really does is hold in the mud and

1 the water and the rock.

2 Q. All right. Makes it pretty when it's sitting
3 up here.

4 A. It sure does. It does. It's kind
5 of confusing and expensive, but...

6 Q. All right. So let's talk a little bit about
7 your Klepper here.

8 A. Das Klepper, das boat from Germany.

9 Q. Okay. So this is a modern Klepper?

10 A. Yeah. This is a modern 1970s --

11 Q. Modernish. Modernish Klepper then.

12 A. 1974.

13 Q. All right.

14 A. But it's the exact same design as they
15 started making in 1910 when Hans Klepper first came up
16 with the concept and canvas and canvas with rubber on
17 it on the bottom originally. Now it's a tougher
18 material.

19 Q. But the same shape, same rib system?

20 A. Same shape, same system; a bunch of metal
21 ribs with clips on them and some big frames that just
22 fold in there and a pontoon, and even those originals
23 had a little inflatable thing here made of rubber.

24 Q. Which helps you --

25 A. It gives you a little more buoyancy, bounce

1 off a few more things. It's a neat boat.

2 Q. How much cargo can you put in it?

3 A. A ridiculous amount of cargo. You can fill
4 this entire end with cargo; and from your feet
5 forward -- your feet are going to be probably right
6 about here for a big guy like me. -- you can fill all
7 that with cargo.

8 And I would say this. Until some of the
9 very, very modern inflatable kayaks came out, oh, in
10 '70s, '80s, '90s, this was the boat of choice in Alaska
11 for expedition boating, was the Klepper.

12 And an American guy came out with them
13 shortly thereafter, Folbot. Jack Kissner started
14 making Folbots, which were cheap Klepper knockoffs.
15 They weren't as good, but it was an ingenious design.
16 They're incredibly strong. They have a lot of flex to
17 them, and they look like they would explode if you look
18 at them crosswise, but they take tremendous impacts.

19 Q. So you could bounce off a lot of rocks in
20 that?

21 A. Yeah.

22 Q. Even if they --

23 A. There's a guy in the 1930s -- let's see. --
24 Harold Leich, took one up to Grand lakes in Rocky
25 Mountain National Park headed for the Gulf of

1 California; went through Gore Canyon, went through
2 Granby Gorge, which is under the lake now, all the way
3 down to Grand Junction in the damn thing and broke
4 every stick in it and just taped them together and kept
5 going in a Klepper, and that's a rough ride, and that's
6 a very early Klepper too, because he had a used one in
7 the early '30s.

8 And then he bought some wood and built a box
9 and headed for the Gulf rowing his box. Didn't even
10 look like a boat. Got most of the way through Cataract
11 Canyon and was looking at a rapid in the dusk, one more
12 rapid, and hit something in the flow and, boom, hit the
13 boat, and that was the end of his trip and he had to
14 hike out.

15 But, yeah, Kleppers are amazing boats.

16 Q. So if you had one of these in 1912 and you
17 ripped a hole in the bottom, what did you do?

18 A. Get out a needle and thread and sew it shut.
19 You could sew a little piece of bear skin or something.
20 I don't know. Patch it with goo, tar. But you would
21 patch it up. You have to.

22 Q. And you would bring some sort of patch kit
23 and you would recover?

24 A. I would. I mean maybe the first time you
25 took it out, you would think, oh, it's invulnerable and

1 then you would rip it; and if you try it again, you
2 would take a patch kit.

3 Q. Okay. And it folds up into those bags over
4 there?

5 A. Yeah. Yeah, these are the original Klepper
6 bags, the skin and the ground ripped it's got on this
7 bag. Rats been eating it.

8 And here is the spray deck for paddling
9 whitewater. Goes around you.

10 Q. Did they have those in the early days?

11 A. I don't know. I don't know.

12 And it's got a rudder and foot pedals, if you
13 want to use it as a seat kayak, and I think the
14 originals had something like that. This is aluminum,
15 so it's much more modern. And a little inflatable seat
16 and a little backrest.

17 Very ingenious boat. Still being made today,
18 but basically the same design. And they're no longer
19 the preferred boat because the brand-new inflatables
20 are a lot easier to deal with. And there's people
21 still using them in Alaska.

22 Q. Okay. Thank you very much for showing us and
23 talking to us about your boats.

24 A. Sure. Let's put the Klepper back up here and
25 away another day.

1 (Direct Examination Via Video
2 concluded.)

3 MS. HERNBRODE: Would you like me,
4 Mr. Chairman, to ask Mr. Dimock a few more questions,
5 or would you like to break a little early for lunch?

6 CHAIRMAN NOBLE: Is it your intent to
7 have Mr. Dimock do some direct --

8 MS. HERNBRODE: It is.

9 CHAIRMAN NOBLE: -- testimony?

10 MS. HERNBRODE: Very briefly direct.

11 CHAIRMAN NOBLE: Let's have him do it
12 now.

13 MS. HERNBRODE: Okay. Brad, if you'll
14 come up and sit right here.

15

16 DIRECT EXAMINATION CONTINUED LIVE

17 BY MS. HERNBRODE:

18 Q. All right. For the record again, Brad, can
19 you introduce yourself?

20 A. I'm Brad Dimock, Flagstaff, Arizona.

21 Q. Okay. I just had a couple of additional
22 questions. You make some modern dories out of wood,
23 right?

24 A. Yes.

25 Q. Okay. Some have fiberglass or part

1 fiberglass?

2 A. Correct.

3 Q. The entirely wood ones, is there anything
4 about what they're made of that makes them more
5 durable? Is modern lumber somehow more durable than
6 the historic lumber?

7 A. Well, plywood is more durable than planks,
8 but we're using much thinner plywood, so you end up
9 it's kind of a trade-off. The boats we built for Grand
10 Canyon have just quarter inch plywood on the side and
11 they explode, so...

12 Q. The cedar that you used in the Edith --

13 A. Uh-huh.

14 Q. -- my understanding is that historic cedar
15 had fewer knots in it and all and so it was a little
16 bit stronger wood than the cedar that is available
17 today; is that true?

18 A. Yeah. That's true for most kinds of wood you
19 can get today. All the old growth is gone, and so the
20 nice clear, beautiful wood that the old boats were
21 built out of is all gone. So now we use wood with
22 knots all over the place and have to cut around them
23 and replace them, and it's inferior to what the old
24 boats had.

25 Q. Was modifying your boat along the way and

1 learning as you go kind of a common way of learning to
2 boat in the 1800s and early 1900s?

3 A. I would guess it was. You know, in the big
4 factories back East, you know, you learned from a great
5 master; but the home builders are certainly learning as
6 they go. And if you look at the Oregon boat builders,
7 you can see year by year how they were starting to
8 change due to how the boats performed.

9 Q. The early boatmen that you've studied all
10 sort of taught themselves?

11 A. Yeah, some of them taught themselves. Some
12 of them had them built, like the Kolb brothers had that
13 thing built, but it was to Galloway's specifications;
14 and he had sort of learned by trial and error what
15 shapes worked.

16 Q. And they taught themselves how to boat as
17 well?

18 A. Sort of. Not very well.

19 Q. And you ran both the Julius and the Edith
20 through Cataract Canyon?

21 A. Yeah.

22 Q. And that's a pretty seriously rocky, rapidly
23 sort of canyon?

24 A. Yeah, it's -- only about half of Cataract
25 Canyon remains. The rest is under Lake Powell. But

1 it's a very rocky stretch.

2 Q. And fairly high velocity, so if you're
3 hitting a rock, you're hitting it pretty hard?

4 A. Yeah, yeah, they're steep, rocky rapids.
5 It's a nasty place.

6 Q. Different than the Verde?

7 A. Yeah. The Verde is much calmer. You know,
8 you can still crash into rocks, but I don't think
9 you're going to hit them with the impact that you would
10 hit them in the big rivers.

11 Q. You're familiar with the international system
12 of rating rapids?

13 A. Uh-huh.

14 Q. Even though Colorado rapids are rated
15 differently?

16 A. Grand Canyon has its own weird system, yeah.

17 Q. Is a Class I rapid an impediment to a wooden
18 boat?

19 A. No. A Class I rapid is really -- means you
20 have to be awake. You know, I mean there's maybe a
21 rock or maybe some little waves.

22 Q. Class II rapid?

23 A. Not much more to it. You know, you've got to
24 get up to Class III before you're really in any danger
25 of having much of a problem, I think.

1 Q. Before you even really have to think about
2 what you're going to do?

3 A. Well, you have to think. People drown in
4 their bathtubs and people flip their boats on Class 0
5 water and drown, so...

6 Q. When we were talking about the Edith, you
7 talked about the fact that a Galloway boat pivots
8 better than older designs. Why is pivoting important?

9 A. Well, if you're going to miss a rock, you're
10 going to have to alter your course if there's a rock in
11 your way, and if you've got a keel along the bottom of
12 your boat, you're just going to track right into it,
13 and so the idea is if you're slowing your momentum by
14 rowing upstream and you can pivot, then you can turn
15 and move back and forth. And so the boats that pivot
16 better are much better in rocky streams.

17 Q. Are modern boating skills necessary to run
18 the Verde, or could you have run it if you were
19 Galloway?

20 A. Galloway could have run it fine. A lot of
21 our modern skills aren't applicable to those smaller
22 rocky streams.

23 Q. You wrote an article in Arizona Highways,
24 which has been introduced as X070-2, in 2004 about
25 running replica boats through the Grand Canyon; is that

1 correct?

2 A. Correct.

3 Q. And the boat you were running was the Julius?

4 A. Right.

5 Q. Which was that second boat you were showing
6 us at the shop?

7 A. Yeah, modified lapstrake Galloway.

8 Q. So slightly newer design --

9 A. Yeah.

10 Q. -- than the Edith.

11 On Page 12 of the Arizona Highways article,
12 you talk about how most boatmen on the Colorado train
13 on rubber rafts and never find a reason to press their
14 luck with a fragile boat.

15 What do you mean by that?

16 A. Well, commercially, we're running very heavy
17 loads with large, litigious people, and you don't
18 really want to take chances. And the modern boats, you
19 know, you can land in the rocks, you can park in the
20 rocks, you can bounce off rocks and walls. And the
21 wood boats you can't do those things. So, you know,
22 people who aren't really into wood boats think it's
23 really silly to run them anymore, and they would rather
24 run an inflatable. It's easier.

25 Q. You also wrote an advertisement for Arizona

1 River Adventures, which has been entered into evidence
2 as X070-1, where you're talking about a river trip that
3 you're going to be on running wood boats.

4 A. Uh-huh.

5 Q. And you say that the modern method of rowing
6 where you push downstream works better than even the
7 Galloway method of pulling upstream while facing
8 downstream.

9 Can you elaborate a bit on those two methods?

10 A. Well, I was just describing the
11 Galloway-style, where you row upstream, slow your
12 momentum, move back and forth to avoid obstacles.

13 Grand Canyon is not shallow, and we've found,
14 starting in the 1970s, early '80s, that you push ahead
15 and run it more like a kayak or a motor boat would, and
16 it works better in big, deep water with no rocks. And
17 we all sort of relearned boating at that time.

18 I later went back up to the upper Colorado
19 and the upper Green in a wood boat and was trying to
20 row like that and crashed all over the place and went
21 straight back to the Galloway technique for small,
22 rocky rivers. It really is dependent on the type of
23 water.

24 So in that article I was writing about Grand
25 Canyon, and I said, yeah, it works better down there;

1 but it doesn't work very well at all on the shallow,
2 rocky streams.

3 Q. And there's also a Wooden Boat People blog
4 that you wrote, which has been entered into the
5 evidence as X070-4. Do you often post on Wooden Boat
6 People?

7 A. Not anymore. I started my own blog, and I'll
8 go on there once in a while when I'm bored and see what
9 they're up to and make comments. But I used to post
10 some of my exciting boat building adventures there.

11 Q. In that article you talk about chines. What
12 are chines?

13 A. The chine is the corner between the side of a
14 boat and the bottom of the boat, and in the old style
15 boats it's usually a fairly squared corner where two
16 planks meet.

17 Q. The place where Edith has that copper on it,
18 is that the chine?

19 A. Correct. Correct.

20 Q. When you talk about building the Euphrates,
21 it's a modern-style dory?

22 A. Correct.

23 Q. Not a replica boat?

24 A. Correct.

25 Q. And so they're putting -- you're looking at a

1 foam floor and some fiberglass on it to increase
2 durability because they're going to run it over and
3 over again, is that --

4 A. Right, right. The commercial boats in Grand
5 Canyon, most of them we cover in fiberglass for years
6 and years of abuse.

7 Q. How many times do those boats get used a
8 year?

9 A. Depends. Just a couple times up to five,
10 six, seven, eight times.

11 Q. A year?

12 A. Yeah.

13 Q. And we also have in evidence a couple of
14 blogs from Fretwaterlines, which are X070-3 and X070-5.
15 That's your blog, the Fretwaterlines?

16 A. Yeah, that's mine.

17 Q. And we have to be careful we don't talk over
18 each other or she starts giving us really nasty looks.
19 She had ammunition yesterday. You wouldn't want to
20 have been here for that.

21 In your blog for April 10, 2011, titled
22 "Edith in the Wild," you talk about your first river
23 experience in the Edith. Can you tell us a little bit
24 about that?

25 A. It's a tough boat to row compared to the

1 modern wooden boats. It's long and narrow compared to
2 a modern boat, which makes it harder to pivot; and so
3 when you get in the big hydraulic currents that you get
4 in the big rapids in Grand Canyon, it sometimes just
5 takes off, and very difficult to control. Smaller
6 rapids it moves quite well, though.

7 Q. It didn't surprise you that the Edith didn't
8 handle as well as a modern boat?

9 A. No. It's simple geometry. You know, it's,
10 what did we say, 16'8" by 4 feet wide, and a modern
11 boat is about that long by 6 feet wide, so radically
12 different geometry.

13 Q. Okay. And you did take the Edith through
14 Grand Canyon?

15 A. Yes.

16 Q. Did it require forethought and luck, as you
17 predicted in your blog?

18 A. Well, it always require a bit of luck, but I
19 ran it like I would run a normal boat and just took my
20 hits in it.

21 Q. You still think you could take the Edith on
22 the Verde or any other river boated by thousands of
23 canoeists every year?

24 A. Yes.

25 Q. And in your blog post from January 3rd, 2013,

1 the boat you were building at that time was a replica
2 Nevills boat?

3 A. Correct.

4 Q. And it's a plywood boat?

5 A. It's plywood, yeah.

6 Q. So much later?

7 A. Yeah, 1938.

8 Q. You do talk a bit about the Edith. Did you
9 make any structural improvements to the Edith like you
10 talked about doing on the Nevills boat?

11 A. The only thing that was inauthentic on the
12 Edith was I did not put in the zinc linings inside
13 them. Other than that, same type of wood, although
14 knottier, because you can't get the clear stuff, and I
15 didn't paint it gray.

16 Q. You didn't use any modern fasteners on the
17 Edith?

18 A. No. All old bronze screws and copper rivets.

19 Q. You did add those boxes to it, but you had
20 run it several times without the boxes?

21 A. Yeah, I've run it without the boxes, and then
22 I added some just because I was going to do a
23 commercial trip and needed to haul more gear.

24 Q. Gives you a handy place to keep things you
25 might need?

1 A. Yeah.

2 Q. So if you hit a rock really hard sideways in
3 your Edith, you would likely have the same problem as
4 the Kolb brothers?

5 A. Probably the exact same problem, yeah; that
6 the whole side would collapse.

7 Q. Is that something you would worry about on
8 the Verde?

9 A. Well, I would try and avoid it, but I don't
10 think -- there's a rapid called Verde Falls that I
11 think I would probably lower the boat through on ropes
12 rather than risk getting out of control on the initial
13 drop and then this big rock, and if you broached on it,
14 you would have that problem.

15 Q. So it's not the drop in Verde Falls you're
16 worried about; it's the rock sort of center after that?

17 A. Yeah, it's the consequence after perhaps
18 becoming out of control from the first drop.

19 MS. HERNBRODE: Okay. That is all I
20 have, Mr. Chairman.

21 CHAIRMAN NOBLE: Let's break for lunch.

22 COMMISSIONER HORTON: Could I ask him a
23 couple questions?

24 CHAIRMAN NOBLE: Sure, Jim.

25 COMMISSIONER HORTON: Do you know Kim

1 Crumbo?

2 THE WITNESS: Very well.

3 COMMISSIONER HORTON: He's a hell of a
4 strong fellow.

5 THE WITNESS: Frighteningly so.

6 COMMISSIONER HORTON: And were you --
7 did you work for the original owner of Dories at any
8 time?

9 THE WITNESS: I did for 10 years, for
10 Martin Litton.

11 COMMISSIONER HORTON: Martin Litton. I
12 was trying to think of his name. So you have a hell of
13 a lot of experience taking a boat through the Grand
14 Canyon.

15 THE WITNESS: More than most. There's a
16 few senior to me out there.

17 COMMISSIONER HORTON: It would be hard
18 to know that, but anyway, that's pretty impressive.

19 CHAIRMAN NOBLE: Any other Commissioners
20 have questions for Mr. Dimock at this time?

21 Okay. Then we'll reconvene at 1:30.

22 (A lunch recess was taken from
23 11:58 a.m. to 1:30 p.m.)

24 CHAIRMAN NOBLE: Let's go on the record
25 and have George do a roll call.

1 DIRECTOR MEHNERT: Commissioner Hennes.

2 COMMISSIONER HENNESS: Present.

3 DIRECTOR MEHNERT: Commissioner Allen.

4 COMMISSIONER ALLEN: Present.

5 DIRECTOR MEHNERT: Commissioner Horton.

6 COMMISSIONER HORTON: Here.

7 DIRECTOR MEHNERT: Chairman Noble.

8 CHAIRMAN NOBLE: I are here.

9 DIRECTOR MEHNERT: We have a quorum and
10 we are ready to go.

11 CHAIRMAN NOBLE: And it is 1:30, and
12 Mr. Hood was very appreciative that we waited.

13 MR. HOOD: Let the record reflect it is
14 1:30 on the nose.

15 MR. HELM: Whose nose?

16 CHAIRMAN NOBLE: Mr. Heilman, go ahead,
17 please.

18 MR. HEILMAN: Thank you.

19

20 CROSS-EXAMINATION

21 BY MR. HEILMAN:

22 Q. Hi, Mr. Dimock. My name is Jeff Heilman. I
23 represent the Salt River Project in these proceedings.
24 I just wanted to ask you some questions about the video
25 testimony that we watched this morning.

1 A. Okay.

2 Q. They're submitted under X066, and there's two
3 videos, the one where you're talking in your house and
4 then the one outside. The one in your house I'm going
5 to refer to as Video 1, and the one where you're
6 showing the boats will be Video 2.

7 A. Okay.

8 Q. Does that work for you?

9 A. Yeah.

10 Q. Okay. I've also tried my best to transcribe
11 what you and Ms. Hernbrode were saying. If I get that
12 wrong, please correct me, but let's wait until after
13 I'm done so we don't mess up the court reporter.

14 And then, finally, for the record, I'll do my
15 best to approximate which minute of the video we're
16 talking about, but they're not exact timestamps, so
17 forgive me if they're a little off.

18 So in Minute 0 of Video 1, you said that you
19 worked as a historian and written biographies of river
20 characters and river history.

21 Do you have a degree in history?

22 A. I do not.

23 Q. Any other formal training in history?

24 A. No.

25 Q. In Video 1 Ms. Hernbrode asked you if you've

1 ever run the Verde River, and you state "I ran the
2 Verde a lot back in the 1970s in kayaks and rafts."

3 She then asked you how come you haven't run
4 it since the '70s, and you reply, "My attention has
5 been elsewhere. I've been working commercially for
6 most of my river-running, and that's up north and in
7 the Grand Canyon."

8 Does that sound right?

9 A. Correct.

10 Q. When you say that most of the river runs you
11 do are commercial, what kind of commercial operations
12 are we talking about?

13 A. I work for a rafting company out of Flagstaff
14 in the Grand Canyon and occasionally up in Utah.

15 Q. Okay. So that same company also has boating
16 trips in Utah?

17 A. No, other river companies.

18 Q. Gotcha.

19 Besides the Colorado River, what other rivers
20 do you run commercially?

21 A. The San Juan, the Green, the Yampa, and the
22 upper Colorado.

23 Q. And you said you live in Flagstaff; is that
24 correct?

25 A. Correct.

1 Q. About how far away is Flagstaff from the
2 Verde River?

3 A. About an hour, about 50 miles.

4 Q. Okay. And you've never thought about running
5 commercial trips on the Verde River?

6 A. No, I haven't.

7 Q. Why is that?

8 A. I make quite a bit of money in Grand Canyon.
9 It's a much higher paid job, and I don't enjoy short
10 trips. I like the one and two and three-week trips.

11 Q. And so you haven't been on the Verde River in
12 a boat since the 1970s; is that correct?

13 A. I believe I did a trip in the 1990s or maybe
14 2000.

15 Q. Okay. But, still, it's been a while since
16 you've been on there?

17 A. It's been a while.

18 Q. And I believe you stated you've taken your
19 replica boats on a number of other rivers; is that
20 correct?

21 A. Yes.

22 Q. Which rivers have you taken the Edith on?

23 A. The Edith has been on Lodore Canyon and the
24 upper Green River and Cataract Canyon and Grand Canyon.

25 Q. And the Julius has been on even more?

1 A. Many, many more; from the source of the Green
2 up in the Wind River Mountains all the way to Lake
3 Mead; and the Rogue River source to sea; the Salmon
4 River from Salmon, Idaho to Lewiston; the Yellowstone
5 from Yellowstone Park to Billings; and the San Juan as
6 well.

7 Q. And how do you take those boats to those
8 different places; what does that entail?

9 A. I have a little trailer that I tow behind my
10 little Toyota van.

11 Q. So you've taken your replica boats all over
12 the country, but never taken them on the Verde River?

13 A. No. I'm usually taking them where they were
14 taken historically, and my main interests are the
15 Colorado River boaters, so I've been following their
16 tracks with those boats.

17 Q. Have you discussed the possibility of putting
18 your replica boats on the Verde River to prove that you
19 can actually navigate it?

20 A. We have, and we have actually talked about
21 doing that this year, but I'm recovering from two knee
22 surgeries and a hernia, so I have not been able to do
23 it this year. I would love to, though.

24 Q. Okay. At Minute 2 of Video 1, you and
25 Ms. Hernbrode were discussing your trips on the Verde

1 River, and she asked you "The trips you went on the
2 Verde, did you portage on those trips?"

3 And you replied, "I believe we portaged
4 around the Verde Falls once or twice when we had
5 something that we thought was inappropriate, like a big
6 canoe or something."

7 Why would a big canoe be inappropriate for
8 running the Verde Falls?

9 A. Well, almost any canoe would be. An open
10 canoe might very likely swamp; and the other boat we
11 have is a decked canoe, but we were really amateurs at
12 the time, so the portage is quick and easy and we did
13 that.

14 Q. And what other kinds of craft would be
15 inappropriate for running the Verde Falls?

16 A. I think most anything. Well, kayaks are fine
17 because you have such quick recovery. It just depends
18 on who's running the boat. If it's something you're
19 likely to get out of control and bash into this one big
20 rock below there, you might want to think about not
21 running it.

22 Q. And your replica boats would be in that
23 inappropriate category?

24 A. For me, yeah. I'm not young enough to think
25 I can get away with that anymore.

1 Q. And then a little bit later in Video 1, she
2 asked you, "Do you remember how long the portage was?"

3 And you respond, "I don't remember it being
4 much of a project at all. I think you just get out on
5 the right bank and walk around the main drop and get
6 back in."

7 What kind of boat were you in when you
8 portaged the Verde Falls?

9 A. Canoes.

10 Q. Canoes?

11 And would that portage be more difficult if
12 you were running one of your replica boats?

13 A. It would. You might want to just lower it by
14 ropes, just drop The Falls with a couple of ropes.

15 Q. Approximately how much do your replica boats
16 weigh?

17 A. Anywhere from 300 to 500 pounds.

18 Q. And that's for both the Julius and the Edith?

19 A. Yeah.

20 Q. How thick is the wood in the hull?

21 A. The floor on those are seven-eighths of an
22 inch to an inch thick of pine or fir planking or cedar.
23 The walls are five-eighths to three-quarters-inch
24 thick.

25 Q. Could you portage the Verde Falls by yourself

1 in one of your replica boats?

2 A. I couldn't portage it. I could line it,
3 probably, figure a way with ropes to line it.

4 Q. And I think you might have said that in the
5 video, but how much cargo can you hold in the Edith,
6 for instance?

7 A. A lot. I mean there's a tremendous amount of
8 room in there, more than I would want to row, depending
9 on, you know, how dense it is. If you're carrying iron
10 ore, you wouldn't put much in it.

11 Q. How much weight would you feel comfortable
12 rowing?

13 A. I would have to pull a number out of my head.
14 Half a ton or a ton, somewhere in there.

15 Q. Up to a ton?

16 A. Yeah. I mean they're incredibly buoyant.
17 That would be like four great big people, and it
18 wouldn't be tough for a half a ton.

19 Q. If you had half a ton of cargo in your boat
20 when you had to either portage or line Verde Falls,
21 that would make it more difficult, wouldn't it?

22 A. Probably take it out and carry it around.

23 Q. At Minute 3 of Video 1, you talked about --
24 more about portaging. You state, "The one time I know
25 I portaged, my girlfriend and I were just learning to

1 paddle a two-man decked canoe and flat water is scary.
2 So Verde Falls was just like we're not going to do
3 that."

4 Did I -- does that sound right?

5 A. Yeah. That was the first time we had been in
6 a decked canoe.

7 Q. Could you tell me what a decked canoe is?

8 A. It looks more like a kayak, so that you get
9 down in it and kneel and put spray decks around, and so
10 it looks like a kayak. But they're a whitewater racing
11 canoe.

12 Q. And what did you mean by flat water is scary?

13 A. Well, just getting in the thing was scary
14 when we first got in it, because we had never been in
15 it before, so flat water was even scary, so...

16 Q. What is flat water?

17 A. Still water.

18 Q. At Minute 3 of Video 1, Ms. Hernbrode asked
19 you, "Have you ever run a dory on the Verde?"

20 And you reply, "I haven't. By the time I got
21 to dories, again, my eyes were pointed northward. You
22 might want to line or portage at Verde Falls, but I
23 never looked at it with a doryman's eye, so I would
24 have to reassess."

25 Why might you want to portage or line the

1 Verde Falls in a dory?

2 A. As I stated earlier, if you get out of
3 control in that first drop, it's very likely to broach
4 on a big boulder at high speed, and dories don't like
5 that.

6 Q. At Minute 3 of Video 1, Ms. Hernbrode asked
7 you if you wear a life vest when you run a river. And
8 you reply, "I do. It's the law, and in a bouncy river
9 it's only common sense. We used to not wear them
10 unless there was an actual obvious threat ahead."

11 When did that law requiring life vests come
12 into place?

13 A. Probably before I was born. But I worked
14 with a lot of rebels in Grand Canyon and we would take
15 them off in the flat water on a hot day, but we don't
16 anymore.

17 Q. And what did you mean by bouncy river?

18 A. Yeah, anything where you might bounce
19 overboard.

20 Q. Would you consider the Verde a bouncy river?

21 A. Yeah, in a lot of places.

22 Q. And then when you said, "We used to not wear
23 them unless there was an actual obvious threat ahead,"
24 what is an actual obvious threat?

25 A. A rapid.

1 Q. So you would have them in the boats?

2 A. Yeah.

3 Q. At Minute 6 Ms. Hernbrode asked you, "Do you
4 check the USGS gage records when you run a river?"

5 And you reply, "Sometimes we did. It was a
6 lot harder in the '70s to get that information. We
7 didn't have a worldwide web. So we would usually just
8 go and look and say, 'Hmm, there's no water. Let's go
9 do something else.' I went to run the east Verde one
10 time and that happened, so we went over and ran the
11 Camp Verde down stretch instead."

12 So there have been occasions where you've
13 gone to a river and there hasn't been enough water for
14 you to run your boats?

15 A. Yeah. The east Verde is where it goes
16 through Payson there or Snowflake. I forget. That
17 you've really got to have floodwater to get on the east
18 Verde, but there's just about always enough to go down
19 the main fork of the Verde.

20 Q. At Minute 6 of Video 1, you state, "Well, I
21 started at Prescott College, which, to be nonnegligent,
22 made us wear helmets and jackets for all of our
23 kayaking. So it was available. Kayaking was just
24 starting to pick up in the early '70s. They invented
25 the plastic kayak, which was more durable than the

1 fiberglass ones and the skin ones before that, and
2 that's sort of when I got into kayaking."

3 Why did the invention of plastic kayaks make
4 kayaking more popular?

5 A. They were cheaper and they were more durable.
6 The fiberglass boats will shatter if you hit a rock
7 hard enough; and the plastic ones, after a couple
8 generations of plastic ones, they got them to where
9 they were pretty much unbreakable. They're like
10 Tupperware.

11 Q. And the fiberglass kayaks were more durable
12 than the canvas ones before them then, correct?

13 A. Maybe yeah, maybe no. The wood and the
14 canvas ones are probably quite a bit tougher than the
15 fiberglass ones, but the fiberglass ones were lighter.

16 Q. But neither the plastic or fiberglass boats
17 were available in 1912, right?

18 A. Correct.

19 Q. At Minute 7, you say that as a historian, you
20 use newspapers in your research all the time.

21 How many newspaper articles have you read
22 about boating on the Colorado River?

23 A. A lot. I mean I've written three books and
24 traveled all over the country looking through
25 microfilm, old newspapers and -- I don't know. Lots.

1 Q. So it's not difficult for you to find
2 newspaper articles about boating on the Colorado River?

3 A. Well, it's difficult to find them. You have
4 to go through a lot of stuff if it's not well-indexed,
5 and most of them are not indexed well.

6 Q. But you say there are a lot of them out
7 there, you've read a lot?

8 A. Yeah. Like you go to Utah, the Mormons have
9 indexed the entire gamut of Utah newspapers. So it's
10 very easy in Utah.

11 Q. At Minute 11 of Video 1, Ms. Hernbrode asks
12 you, "How much draw does a fully loaded commercial dory
13 take?"

14 And you respond, "A fully loaded dory is a
15 very heavy boat for its size, and it can --"

16 CHAIRMAN NOBLE: Mr. Heilman, we
17 appreciate your ability to read. Jody doesn't.

18 MR. HEILMAN: I'll slow down. Sorry.

19 BY MR. HEILMAN:

20 Q. And you respond, "A fully loaded dory is a
21 very heavy boat for its size, and it can draw, with the
22 heaviest load we run, 10 to 11 inches, and that's tough
23 to row."

24 When you say it's a very heavy boat, do you
25 have an idea of how much it weighs?

1 A. I would guess we're looking at a ton and a
2 half at that point.

3 Q. And why do you say that's tough to row?

4 A. Well, the more weight you get in it, the more
5 sluggish they are, and they just get to a point where
6 it's not much fun and it's a whole lot of work. And so
7 I would rather row something that's not overloaded.

8 But we almost always start overloaded on the Grand
9 Canyon trip, because it's two to three weeks of gear.

10 Q. At Minute 12 of Video 1, Ms. Hernbrode asks
11 you about your boat building education, and you state,
12 "My boat building education sort of began self-taught
13 as we would break dories, crashing dories, and we would
14 fix them on the river and then fix them better when we
15 got back to the warehouse, taking them apart and
16 rebuilding them. I broke one in two in 1988 and had to
17 do a full rebuild over the winter and eventually
18 started building complete boats, and all sorts of
19 different techniques."

20 CHAIRMAN NOBLE: Thank you, Mr. Heilman,
21 that's much better.

22 BY MR. HEILMAN:

23 Q. How many times have you crashed a dory and
24 had to fix it on the river?

25 A. Oh, maybe two dozen.

1 Q. And are you more likely to crash one of those
2 dories if it's fully loaded?

3 A. It's not so much the load as the rapid, the
4 situation, the water level.

5 Q. How long does it take you to fix a dory on
6 the river?

7 A. Most wrecks it takes us half an hour or less.

8 Q. And what happened when you broke the dory in
9 two in 1988?

10 A. I spent all night fixing it.

11 Q. But you still fixed it on the river?

12 A. Yeah.

13 Q. At Minute 14, Ms. Hernbrode asked you some
14 questions about boats used by the Kolb brothers on
15 their trip. Without measuring it, you guessed that it
16 would be about 18 feet long, about 4 feet wide, and
17 fully loaded could weigh about a ton.

18 Does that still sound about right to you?

19 A. Well, we went down and measured it. It was
20 16'8". I had forgotten exactly how long it was. But
21 the rest of it's correct.

22 Q. You don't know, do you, whether you could
23 take an 18 foot long, 4 foot wide, one-ton boat down
24 the entirety of the Verde River in its ordinary and
25 natural conditions?

1 A. Well, I haven't done it. I believe I could
2 do it.

3 Q. When Ms. Hernbrode asked you, "How much
4 weight can she carry," you say, "Boy, that boat could
5 carry a lot, and, of course, the more you put in, the
6 less manageable it becomes, but I bet you could put a
7 ton in that boat."

8 What do you mean by the more you put in, the
9 less manageable it becomes?

10 A. Well, as I said earlier, the heavier they
11 are, the more difficult they are to row. It's just
12 physics. You're deeper in the water. There's more
13 weight out there. Takes more strength to get it
14 moving, slow it down, change its direction.

15 Q. At Minute 15, Ms. Hernbrode asked you what
16 kind of cargo you could put in the Edith, and you
17 state, "You could put skins, if you're out there being
18 a trapper. You could put a fair amount of mining
19 supplies in it. You could fill it full of staple goods
20 and go down the river being a merchant."

21 Did you discuss using these boats to haul
22 mining equipment with anyone from the State Land
23 Department before you recorded the video?

24 A. No.

25 Q. At Minute 17, Ms. Hernbrode asked you if the

1 Kolb brothers had any issues on their boating trip
2 through the Grand Canyon.

3 So you said, "They had a lot of issues.
4 Neither one of them knew how to row when they started,
5 and they had been told by Galloway and Stone the theory
6 and the technique, but learning that technique is not
7 that easy in any old wooden boat, and so they crashed
8 and burned. Well, they didn't burn, but they crashed
9 the boat. They had to patch a lot and portage them,
10 line them, push them over rocks, but they're tough
11 American men. It doesn't matter what gets in your way,
12 you find a way to overcome it, just the way a lot of
13 boating was done in those days."

14 What do you mean when you say learning that
15 technique is not easy in any old wooden boat?

16 A. Learning to row isn't easy in any boat,
17 wooden or not. Some people pick it up quicker, some
18 don't; but it's difficult.

19 Q. Is that specific to rivers with whitewater,
20 as compared to like a lake?

21 A. Yeah. You know, when you're dealing with
22 rocks and walls coming at you and you have to learn to
23 react and control that boat with these two levers, it
24 takes a while.

25 Q. Were the Kolb brothers carrying any pelts or

1 skins on their trip?

2 A. Not that I know of.

3 Q. Mining equipment?

4 A. I doubt it.

5 Q. And staple supplies to sell to other people?

6 A. No.

7 Q. If they had been carrying, let's say, mining
8 equipment, skins, or supplies they wanted to sell, that
9 means the boats would have been heavier and even less
10 manageable?

11 A. Correct.

12 Q. So they would have possibly crashed it more
13 often as a result?

14 A. Possibly.

15 Instead, they had a lot of camera gear, which
16 was also very heavy.

17 Q. But not as heavy as mining equipment?

18 A. Not as heavy as mining equipment, no.

19 Q. And if you had something like mining
20 equipment, that would make portaging and lining more
21 difficult as well, right?

22 A. Uh-huh, more to carry around.

23 Q. And given how often they crashed and how
24 often they had to patch, they might have lost or ruined
25 some of those pelts or that mining equipment or the

1 supplies they intended to sell in those crashes,
2 correct?

3 A. Very possibly.

4 Q. At Minute 17, Ms. Hernbrode asked you about
5 the picture of the Kolb brothers looking through a hole
6 in the Edith.

7 And you state, "Emery had just watched his
8 brother flip over in the deep water, and so he pulled
9 into the shallow sideways and, pow, T-boned the thing.
10 And that boat in particular was not designed to be hit
11 from the side, and the whole side collapsed."

12 Could you explain what you mean, and I know
13 you touched on this in the video, but what you mean
14 when you say "that boat in particular was not designed
15 to be hit from the side"?

16 A. Yeah. In the framework of a boat, usually
17 the stiffeners that would go across the floor of the
18 boat are firmly fastened to the ones that go up the
19 side of the boat. For some reason, the way they built
20 the Edith, those sideboards just butt-jointed against
21 the floor of the boat. So if you hit it from the side,
22 they would just give way. They weren't fastened at the
23 base, which is very peculiar.

24 Q. Yeah.

25 A. And I don't know why they did that.

1 Q. I've actually watched some of your videos
2 that you have on YouTube of you rowing your boat
3 through some whitewater. It's not always exactly easy
4 to keep your boat pointed straight down the river, is
5 it?

6 A. No, it is not.

7 Q. And that would be especially true if the boat
8 was full of cargo, as opposed to light?

9 A. Yeah.

10 Q. Have you ever hit a rock with the side of
11 your Edith?

12 A. No.

13 Q. But have you ever wrecked a dory that way,
14 hitting from the side?

15 A. I have had a couple good side hits, yeah.

16 Q. At Minute 18, Ms. Hernbrode asked you about
17 the Kolb trip. "I think you said they lined or
18 portaged some of the rapids?"

19 And you reply, "They did. Lining, where
20 you're actually lowering the boat through the water
21 without picking it up, is difficult work, with slippery
22 rocks and the boat pulling against you, but it's a lot
23 of times easier than actually unloading it and carrying
24 the boat, especially when there's just two of you. So
25 they lined a lot and portaged some."

1 Why do you say that lining is difficult work?

2 A. Well, you've got the entire force of the
3 river pushing against the boat, and you're trying to
4 hold that rope while you're standing in slippery, muddy
5 rocks. Very easy to hurt yourself, break an ankle or
6 something, rope burns, boat gets away, or the nose
7 catches the current and pulls out.

8 I've done a little bit of it just to see what
9 it's like. It's terrifying.

10 Q. And do you have to unload the boat when you
11 line the boat?

12 A. You don't have to, and depending on the
13 situation, sometimes they did, sometimes they didn't.

14 Q. And when you say the boat's pulling against
15 you, it would pull against you more if it had that
16 stuff in it and it was heavier, correct?

17 A. Yeah.

18 Q. And what do you mean when you say "Lining the
19 boat is a lot of times easier than actually unloading
20 it and carrying the boat, especially when there's just
21 two of you"?

22 A. Well, if the boat weighs 500 pounds, it's
23 hard for two people to carry it; whereas they might be
24 able to brace themselves and lower it, where gravity is
25 working with you, rather than actually pick that boat

1 up and portage it around.

2 Q. So a single person by themselves could not
3 portage a 500-pound boat?

4 A. It's actually been done. Buzz Holmstrom
5 portaged Big Drop 2 with a 500-pound boat, and nobody
6 knows how he did it; but there's pictures.

7 Q. But the Kolb brothers weren't able to portage
8 their boats by themselves?

9 A. They were. They did.

10 Q. They were together, though, right?

11 A. Yeah. They portaged one boat at North Canyon
12 Rapid, and it took them all day, and they said to hell
13 with that and ran the other one through.

14 Q. At Video 1, Minute 19, Ms. Hernbrode asks
15 you, "And you built a replica of the boat the Kolb
16 brothers used to float the Colorado?"

17 And you reply, "I did for the centennial of
18 their trip. I built an exact replica, used the same
19 type of wood, the same type of hardware, same
20 techniques, and the only thing I didn't do authentic
21 was I could not bear to paint it battleship gray, which
22 is what they did. I left it natural."

23 I think you said earlier -- Ms. Hernbrode was
24 asking you about that. -- the wood that they actually
25 used is now -- you can't get it, correct?

1 A. Right. You can get the same species, but
2 it's just got knots in it now.

3 Q. The old growth is stronger?

4 A. Yeah, and lighter and better.

5 DIRECTOR MEHNERT: Is this new?

6 MR. HEILMAN: No, this is X069.

7 BY MR. HEILMAN:

8 Q. This is one of your actual blog posts from
9 your -- the Fretwaterlines blog.

10 A. Correct.

11 Q. Is that your current blog?

12 A. Correct. Yeah.

13 Q. And in this particular post, are you
14 discussing the replication of the Edith, or is it a
15 different boat?

16 A. This is a 1938 boat, the WEN, and I'm
17 creating a replica of that.

18 Q. And you talk about some of the things you did
19 with that boat, like using quick-drive powder-coated
20 deck screws in places where it will never show.

21 A. Uh-huh.

22 Q. Did you do anything like that when you built
23 the Julius replication?

24 A. For the Julius and the Edith, we did not. We
25 used all brass and bronze.

1 Q. In the second paragraph you discuss putting a
2 more effective brace on the splash guard and making the
3 entire gunwale system structurally sound.

4 A. Correct.

5 Q. Did you have to do anything like that when
6 you replicated the Edith or the Julius?

7 A. I didn't. The Julius was very well-designed.
8 The Edith, you know, I thought about that joint I was
9 telling you about, but I went ahead and did it, did it
10 like they did. I can't think of anything I did
11 different on the Edith from the original.

12 Q. Even changing the joinery at all, like you
13 did in this one?

14 A. No. My joinery may not be as fine as the
15 Racine Boatworks, though.

16 Q. At Minute 20 of Video 1, Ms. Hernbrode asked
17 you if you would be concerned about hitting rocks if
18 you took your Edith on the Verde River.

19 And you reply, "I'd be concerned, but not
20 horribly concerned. You know, boatmen hate to hit
21 rocks, but on a river like that, you would be hitting
22 them all of the time, and wood is tremendously
23 resilient and it wouldn't be a real problem."

24 What do you mean when you say you would be
25 hitting rocks all of the time on the Verde River?

1 A. Well, it's a shallow river in places, where
2 it goes out into gravel bars and such, and it would
3 just be hard not to hit some of those; but you're not
4 going to hit them hard. You can hit them with the
5 floor of the boat.

6 Q. At Video 1, Minute 20, Ms. Hernbrode asks
7 you, "Would you be concerned about scraping the
8 bottom?"

9 And you reply, "No. Bottoms are made to be
10 scraped. You've got an inch or so of wood, and on most
11 boats there are runners of oak that are beneath that,
12 which take a lot of impact."

13 Did the Kolb brothers' boats have oak runners
14 on them?

15 A. Yes.

16 Q. They did?

17 And I know you discussed with Ms. Hernbrode
18 your Wooden Boat People blog post.

19 A. Yeah.

20 Q. That's X070.

21 And you were talking about a replica you were
22 doing for other people; is that correct, the Euphrates?

23 A. Oh. That wasn't a replica per se. That was
24 a 1970s style dory that we were building for a friend
25 of mine. A 1971 design.

1 Q. And in that blog post, in the second
2 paragraph, you say "I get to frame them in
3 sweet-swelling Port Orford Cedar and build them mostly
4 out of Meranti plywood, but we decided to go with a
5 foam floor and radiused glass chines due to the track
6 record for damaged floors and chines in the Grand
7 Canyon."

8 What did you mean by "the track record for
9 damaged floors and chines in the Grand Canyon"?

10 A. Well, that's where you usually will hit, is
11 the floor or that chine corner, and a square one breaks
12 quicker than a round one. A round one dissipates the
13 impact better.

14 Q. And the Grand Canyon has a particular track
15 record for damaging --

16 A. Well, it has a track record of us taking
17 those boats down 20, 30, 40. My boat's been down over
18 a hundred times, and the floors are the parts that get
19 beaten up.

20 Q. And you said that you would be hitting rocks
21 all the time on the Verde River, right?

22 A. Uh-huh.

23 Q. So are foam floors and radiused glass
24 chines -- do they protect the floor better?

25 A. The foam floor, which is a rigid foam

1 fiberglass inside and outside, it's a sailboat
2 technology, and a couple years ago, when we built that,
3 we still thought that those outlasted the wood floors.
4 And it turns out maybe they don't. So I can't give you
5 a yea or nay on that. There are various theories. But
6 all floors get beat up.

7 Q. But there weren't foam floors -- they weren't
8 building boat like that in 1912, right?

9 A. No. No.

10 Q. At Video 1, Minute 21, Ms. Hernbrode asked
11 you, "And Edith isn't the only replica boat you've
12 built?"

13 And you reply, "No. I've built a modified
14 Galloway, which is the next step in the evolution.
15 Built in the 1930s originally; shorter, wider, and more
16 up-kick, so trending more towards a modern dory that we
17 have today, and that one I've run all over the West.
18 And it's built in the old plank style, unvarnished,
19 unpainted. And it's got about 4,000 miles on it on
20 rough, shallow rivers."

21 That's the Julius, correct?

22 A. Correct.

23 Q. And you've run this boat all over the West,
24 and it has over 4,000 miles on it?

25 A. Yeah.

1 Q. But not the Verde, correct?

2 A. Correct. I ran it everywhere where the
3 original designer of the boat had run it.

4 Q. And it sounds like you heavily favor this
5 replica over the Edith; is that correct?

6 A. The more modern the hull, the easier they are
7 to row; and, yes, I do.

8 Q. Why is a shorter boat an improvement in
9 design in these types of wooden boats?

10 A. Well, it's -- and you're seeing that in all
11 the sports. Skis are getting shorter, surf boards are
12 getting shorter. When a ballerina spins and pulls her
13 legs in, she spins quicker. It's physics. A shorter
14 boat is going to turn better. A wider boat will have
15 more buoyancy in the middle. It will spin better.

16 Q. A wider boat will spin better?

17 A. Yeah.

18 Q. And why is a boat -- you say the term
19 up-kick, which I'm not sure I understand. Why is a
20 boat with more up-kick an improvement in design?

21 A. I'm talking about the floor as it goes from
22 end to end. If it's perfectly flat, you've got that
23 out in water. It's hard to spin. If it has up-kick or
24 rocker or rake -- there's a lot of terms for that, and
25 so the more modern boat's got more and more of that,

1 and so they tend to turn better because they're not
2 dragging on the water out there.

3 Q. And the Julius is a replica of a boat
4 designed from the 1930s, correct?

5 A. It's a modified concept based on what the
6 Edith is. They're both Galloway boats, but the Julius
7 was built by an Oregonian, and he was probably looking
8 at early dories as well, so...

9 Q. But it was an evolution of that type of boat?

10 A. It's an evolution, yeah.

11 Q. So that type of boat was not available in
12 1912?

13 A. As far as we know, no one was building a boat
14 that looked like that; but there are a couple of early
15 boats that have later been like thirdhand described as
16 looking more like an Oregon boat than what Galloway was
17 running.

18 Q. But comparably, boats that people were
19 running on rivers in the Southwest, they were longer
20 and narrower, with less up-kick?

21 A. The ones we know of; but the home-built ones
22 that never survived, people would build them all
23 different shapes.

24 Q. At Minute 22 of Video 1, Ms. Hernbrode asked
25 you, "And you build more modern boats as well?"

1 And you replied, "Mostly I build what we call
2 dories, which is an Oregon drift boat design, which
3 evolved in Oregon in the 1930s. The really great
4 designs came around the 1960s and '70s, and those are
5 designs that we still use today. The last 40 years
6 nothing has evolved."

7 What were the really great designs,
8 innovations that came around in the '60s and '70s?

9 A. Well, that Oregon drift boat, as I say, it
10 got a bit wider. They started tilting the sides out,
11 which makes them stable when they start to tip, and it
12 moves the oarlock further out. You can use a bigger
13 oar. And they brought the ends up into these very high
14 prows on both ends that really break through the water,
15 so they became much, much better whitewater boats.

16 Q. But boats with that type of design weren't
17 around in 1912, right?

18 A. Well, again, not that we -- not that have
19 survived. The 1896 Flavell boat was never
20 photographed, and a person who saw it said it was such
21 a good boat he built a boat that he thought looked like
22 it, and he said it looked like those Oregon boats you
23 see today.

24 So it's hearsay that someone may have thought
25 of that shape back then, but the ones that survived,

1 the Galloway boats, no.

2 Q. At Minute 23 of Video 1, you mention
3 something called freight canoes. What are freight
4 canoes?

5 A. They're big, heavy canoes used for hauling a
6 lot of goods. They came out of Canada, you know, the
7 Voyageur canoes and all that, but great big, beefy
8 canoes.

9 Q. How big are we talking?

10 A. Gosh, I would have to look it up, but I think
11 they got them up over 20 feet; but all different sizes,
12 heavily built, and very tough boats.

13 Q. What rivers were they used on, historically?

14 A. All over the Canada and Northern United
15 States, New England.

16 Q. Were they used in the Southwestern United
17 States at all?

18 A. I know some made it this far. You could have
19 them delivered by train.

20 Q. At Minute 30, Ms. Hernbrode asked you about
21 using canoes, kayaks, and rowboats on a braided, sandy
22 river.

23 And you replied, "Absolutely. In fact, the
24 Klepper is the boat of choice in the braided rivers of
25 Alaska, where these rivers just fan out into literally

1 hundreds of channels that dry up at a moment's notice,
2 and so you get out, drag it over, and continue on.
3 And, you know, on the San Juan on the day we ran
4 braided channels, sandy, braided channels, we ran
5 aground all the time, and it's always get out, pull it
6 over, get back in, and continue on. In dories and
7 canoes and kayaks and rafts, it's very common, and
8 braiding isn't a problem."

9 So it's your opinion that the San Juan River
10 is a sandy, braided river?

11 A. In places, the lower San Juan, where it's
12 been inundated by Lake Powell and gone back down, you
13 get a lot of sandbars and braids. In the upper
14 San Juan above Bluff, you get a lot of gravel bar
15 braids.

16 Q. And those sandbars and gravel bars would run
17 you aground sometimes?

18 A. Sometimes. It's annoying.

19 Q. And you said on the San Juan River you ran
20 aground all the time?

21 A. In low waters.

22 Q. And you were in the Klepper; is that correct?

23 A. In any kind of boat. I haven't run a Klepper
24 on the San Juan. I've run other kayaks.

25 Q. Does that happen to you on the Colorado River

1 ever?

2 A. Grand Canyon? It is exceedingly rare. It's
3 not a gravel bar sort of a river.

4 Q. At a Minute 31, Ms. Hernbrode asks, "So I
5 guess the next question is, what does meaningfully
6 similar mean? So let's talk about some boat
7 characteristics, the things that make a boat suited for
8 a particular use. So would draw be one of those
9 things?"

10 And you reply, "Yeah, the amount of water a
11 boat draws, and the kayaks and canoes would be very
12 similar to today. The wood boats are a narrower
13 profile, and they are going to draw more than the big,
14 wide rafts of today, which means you'll run aground
15 more often."

16 So the boats people like the Kolb brothers
17 were using in 1912 were narrower than the rafts that
18 we're using today?

19 A. Correct.

20 Q. In fact, the Edith is even more narrow than
21 Julius, right?

22 A. Correct.

23 Q. So the boats in 1912 had a greater draw than
24 these modern boats?

25 A. Depending on their length, yeah. If it's the

1 same length and narrower, it's going to draw more.

2 Q. And that will cause you to run aground more
3 often?

4 A. If you're in shallow water.

5 Q. At a Minute 33 of Video 1, Ms. Hernbrode asks
6 you if durability of boats in 1912 were meaningfully
7 similar to boats used today.

8 And you replied, "Durability, I will say
9 modern rafts take a beating a lot longer than a wood
10 boat, but modern rafts are designed to be used over and
11 over and over and over again; whereas the wood boats in
12 those days were going to do one trip, because there is
13 nobody there in their car to drive them back to put
14 them in. So in terms of durability, they would last a
15 trip or two, no problem."

16 So the boats in 1912 that they were using
17 were only durable enough to survive a trip or two; is
18 that correct?

19 A. They would last until you wreck them, but
20 they would certainly last a trip or two, yes. Again, I
21 mean, you can wreck anything. But a wood boat won't
22 last as long as a rubber boat.

23 Q. And even on those trips themselves, there's
24 an expectation that they would have to repair them
25 occasionally?

1 A. Yes.

2 Q. So if you wanted to use these boats to move
3 mining equipment, animal skins, supplies you would want
4 to sell, you would have to build a new boat for every
5 trip you would take, basically?

6 A. Depends on the river. I know on the San Juan
7 they would drag the boat all the way back up and use it
8 again, rather than build a new one, because the lumber
9 was hard to come by. And they were carrying a lot of
10 mining gear up there in shallow boats, shallow rivers.

11 Q. And most modern recreational boaters use
12 their boats over and over and over again, right?

13 A. Yeah.

14 Q. And most modern recreational boaters don't
15 expect to have to repeatedly repair their boat on a
16 trip?

17 A. No.

18 Q. At Minute 38 of Video 1, Ms. Hernbrode asks,
19 "Is there a difference between the expectation of
20 historic boaters and those of modern boaters?"

21 And you reply, "Yeah. Modern boaters think
22 everything is going to be just fine, and they've got a
23 map and their buddies have all done it, and they think
24 they're going to be able to drink beer all day and get
25 to the end of the trip and be fine. Historic boaters

1 have no such preconceptions. They didn't know what was
2 going to happen. They're explorers. They're mountain
3 men. They're going into it cocky or they wouldn't be
4 doing it. I can do this, but ready for anything. So
5 it's totally different expectations. I mean their plan
6 obviously is to take their boat and go down from one
7 end of the river to the other, but historically they
8 are planning on or expecting a lot of problems."

9 What kind of problems were historic boaters
10 expecting on those trips?

11 A. Oh, my gosh, everything from boat wrecks to
12 hostile natives to impassable gorges. They never knew.

13 Q. Things like boat wrecks modern boaters don't
14 have to worry about?

15 A. Oh, they do. There was a spectacular one
16 last week in Grand Canyon. But people still wreck
17 boats and pin rafts and tear them up pretty bad, and
18 the dories get busted up.

19 Q. You actually mentioned earlier today that you
20 build -- or the dories that you run commercially, it's
21 only a quarter-inch thick, is that what you said?

22 A. The side panels.

23 Q. And you said they explode?

24 A. You hit them hard, they just...pow, yeah.

25 Q. How often does that happen on your trips?

1 A. Hardly ever.

2 Q. At Minute 39, Ms. Hernbrode asks, "If you
3 were to build a boat from historic materials for the
4 Verde, would it be a bit different from one you would
5 build for the Grand Canyon?"

6 And you reply, "Yeah, but, of course, I know
7 too much. You know, I've been a boat builder and I've
8 run all these rivers; whereas those guys hadn't. But I
9 would build a smaller, lighter craft for a smaller
10 river."

11 How much smaller of a boat would you build to
12 navigate the Verde River compared to the boats you
13 build for the Colorado?

14 A. Oh, a couple feet shorter, probably.

15 Q. Would it be -- and lighter, would you use
16 different materials or --

17 A. Boy, you know, I would have to sit and think
18 about that for a while, what I would build to run the
19 Verde with; but I think I would build it fairly light.

20 Q. How would you build it lighter compared to --

21 A. You know, just use light cedar framing and
22 light cedar planking.

23 Q. Someone who did not have your experience on
24 the Colorado might try to use a longer and heavier
25 craft on the Verde?

1 A. Yeah. They might do anything.

2 Q. And they would likely be less successful than
3 you would in the boat you designed?

4 A. Probably. You know, we have so much
5 experience now that those guys didn't. They were
6 just -- there was no skill set out there.

7 Q. At Minute 39, Ms. Hernbrode asks you if you
8 would ever build a different boat for the Verde River
9 than you would for the San Juan River.

10 And you replied, "Somewhere in between. You
11 know, the San Juan has a bit more flow than the Verde.
12 I would build a small, quick-turning boat for the
13 Verde."

14 So the boat you would build for the Verde
15 River is even smaller than a boat you would build for
16 the San Juan?

17 A. Yeah, if I was building a different boat for
18 each river.

19 Q. Why would you want the boat for the Verde to
20 be more quick-turning than the boat for the San Juan?

21 A. Well, because you're going to run into a lot
22 of shallows, a lot of rocky stretches. You want to be
23 able to move quickly, dodge whatever rocks you can, and
24 pick it up and carry it if you run aground.

25 Q. Would that boat that you would build for the

1 Verde be able to hold one ton of cargo that you
2 estimate the Edith could hold?

3 A. Probably not very well, not a whole ton.
4 But, again, we're getting pretty hypothetical here.

5 Q. And if you loaded the boat you built for the
6 Verde, the hypothetical boat -- this is my last
7 question about it. --

8 A. Okay.

9 Q. -- with cargo at its max capacity, that would
10 defeat your efforts somewhat to make it more
11 maneuverable and quick-turning, correct?

12 A. Absolutely.

13 Q. At Minute 42, Ms. Hernbrode asks, "From your
14 perspective, as someone who builds and runs --"

15 CHAIRMAN NOBLE: That was your last
16 question before.

17 MR. HEILMAN: Last question about the
18 hypothetical boat.

19 CHAIRMAN NOBLE: Oh, okay.

20 MR. HEILMAN: We're coming close,
21 though.

22 THE WITNESS: He's got a lot more pages.

23 BY MR. HEILMAN:

24 Q. At a Minute 42, Ms. Hernbrode asks, "From
25 your perspective, as someone who builds and runs

1 historical replica boats, is information about modern
2 recreational boating highly relevant to your decision
3 about whether a river would be navigable in your
4 historical boat? If you know other people are running
5 it in modern boats, does that inform your decision?"

6 You reply, "Yeah, it depends on what kind of
7 boats are being run on the river. You know, if it's
8 just young, hairball guys in creek kayaks, I don't
9 think I want to go down there in a wood boat."

10 So would you say that the use of creek kayaks
11 by young, hairball guys is not relevant to your
12 decision about whether a river would be navigable?

13 A. I think it's very relevant. Those guys are
14 going off waterfalls and bouncing off rocks. It's a
15 very specialized kind of boat. They're running things
16 that are insane.

17 But if you're running it in a traditional
18 kayak or a canoe, yeah, you can run a boat.

19 Q. So the fact that they would use that river
20 would be almost a sign that you shouldn't use your
21 historic boat?

22 A. Well, if that's the only kind of boating
23 that's being done there.

24 Q. Okay, now shifting over to Video 2. That's
25 the one where you were showing Ms. Hernbrode your

1 boats.

2 I notice that neither you nor Ms. Hernbrode
3 were filming the video. Who was the camera person?

4 A. Was it --

5 MS. HERNBRODE: Jon.

6 THE WITNESS: One of these people there,
7 yeah.

8 BY MR. HEILMAN:

9 Q. It was Mr. Fuller; does that sound right?

10 A. Sounds right.

11 Q. Was Mr. Farmer there, Don Farmer?

12 A. Who is Mr. Farmer?

13 Q. I guess that answers the question.

14 MS. HERNBRODE: There's your answer.

15 THE WITNESS: I don't know Mr. Farmer.

16 I'm not good with names.

17 BY MR. HEILMAN:

18 Q. When were you approached to become a witness
19 in these proceedings?

20 A. Last year I got an e-mail from Joy asking
21 about historic boats and if I knew anything about them.

22 Q. So you didn't know Mr. Fuller prior to --

23 A. No.

24 Q. -- that going on? Okay.

25 Did you have discussions about --

1 CHAIRMAN NOBLE: Whoa, you've been with
2 McGinnis way too long.

3 Is this going to be ten more?

4 MR. HEILMAN: No.

5 CHAIRMAN NOBLE: No, no, I'm just giving
6 you a hard time. We hope we don't upset you. Please
7 go ahead and do as much as you want to.

8 BY MR. HEILMAN:

9 Q. Okay. At Minute 5 of Video 2, you were
10 talking about the Galloway-style boats. You say, "This
11 is a very typical type construction. The peculiar
12 design was one Nathaniel Galloway came up with, and he
13 was up in Utah, and he thought flat from side to side,
14 upturned ends. And he was right. They're pretty good.
15 And in their day these were the rocket ships. These
16 were the best thing going."

17 I believe you were talking about the Edith at
18 that point?

19 A. Yeah, that style boat.

20 Q. So the boats the Kolb brothers had, you would
21 consider that to be the rocket ships of boats at that
22 time?

23 A. It was the best anybody had come up with that
24 survives historically that we know about.

25 Q. So would you say that those boats were on the

1 cutting edge of technology at that time?

2 A. Yeah. It's a dull cutting edge, but...

3 Q. And then at a Minute 11, Video 2, you tell a
4 story would Harold Blake, is that right?

5 A. Leich, L-E-I-C-H.

6 Q. In that story, he was on a Klepper?

7 A. Yeah.

8 Q. And that was in the 1930s?

9 A. Correct.

10 Q. Was that a canvas Klepper?

11 A. Yeah. It was before they had Hypalon, which
12 is a type of rubber they use now.

13 Q. And I believe you stated that he broke every
14 stick in it and just taped it together and kept going
15 in the Klepper?

16 A. Probably not every stick, but he shattered it
17 repeatedly and just kept splinting it with sticks he
18 found along the way, and he kept going.

19 Q. But at some point on his trip he had to build
20 a new boat, right?

21 A. Well, he got down below what he felt he
22 needed a kayak for around Grand Junction and built a
23 very clumsy wooden box of a boat and continued on.

24 Q. And he ultimately wasn't able to reach his
25 destination?

1 A. He ultimately crashed it and sank it and had
2 to walk out with one shoe, which was too bad. He was
3 already below the hardest stuff.

4 MR. MCGINNIS: Trying to make myself
5 useful.

6 CHAIRMAN NOBLE: See, this is what you
7 like to use Mr. McGinnis for. It's probably one of his
8 better uses, supporting you.

9 MR. HEILMAN: That's right.

10 BY MR. HEILMAN:

11 Q. So this is X071. It's another one of the
12 blog posts from your Fretwaterlines blog, right?

13 A. Uh-huh.

14 Q. In the second paragraph, you pose the
15 question "What's a Galloway boat like to row?"

16 And in the next paragraph you write "Wet.
17 Awkward. Slow to turn. But fast, easy to power
18 through the wind, and kind of fun in its own sick,
19 weird, twisted way. The eight-foot oars are both too
20 long and too short at the same time. A bit too long
21 for a 45-inch oarlock-to-oarlock canoe - it is
22 impossible to get enough leverage inside the oarlock to
23 take a good, mighty stroke; yet the oar is too short to
24 really get the boat moving in the big water. The other
25 thing is that with its long, narrow profile, she draws

1 water from end to end and is nearly impossible to pivot
2 in the big water. Oh-and the stern, which is at the
3 downstream end of the boat, is low enough so that even
4 modest waves crash over it, crash over the splashboard,
5 and then squarely in my face and the oversized cockpit
6 quickly swamps. These are problems. But I've rowed
7 worse. The Powell boat is even tougher in big water,
8 being another five or more feet long and no wider.
9 What I came to realize is that the Galloway-style boat
10 is far closer to a Powell boat than I had imagined, far
11 more distant from Nevills boat that superseded it.
12 Truly a transitional hull, but it is small wonder that
13 Nevills' boat eclipsed it so suddenly and definitely in
14 1938. I had expected Edith to row somewhat like the
15 Holmstrom boat I built ten years ago, since that was a
16 modified Galloway, being the same lines, but shortened
17 a foot and a half and widened nearly a foot. Not even
18 close. Holmstrom was far further ahead of his time
19 than I had guessed."

20 And you're talking about your replica of the
21 Edith, correct?

22 A. We're talking about the Edith and the Julius
23 there. The Holmstrom boat is the Julius.

24 Q. Oh, gotcha. Okay.

25 And the Nevills boat, when was that invented?

1 A. 1938.

2 Q. And you said that was a huge step forward in
3 boating tech --

4 A. Yeah. It went to 5 feet wide amidship and
5 just made a tremendous difference, and shorter and more
6 up-kick.

7 Q. And when was the Holmstrom boat invented?

8 A. 1937. So it's just a year ahead or year
9 earlier than the Julius, or a year earlier than the
10 Nevills boat.

11 The Julius was the last Galloway-style boat
12 ever built until I started replicating them.

13 Q. Then moving on to -- you talked about this,
14 the thing you wrote for Arizona Raft People; is that
15 the right -- Arizona Raft Adventures. I'm sorry.

16 A. Oh, right, on their blog, yes.

17 Q. "Rowing Wooden Dories." You talked about in
18 the 1960s --

19 MR. MCGINNIS: Sorry, got interrupted by
20 Vanna.

21 BY MR. HEILMAN:

22 Q. In the sixth paragraph, under the second
23 photo, it states "In the 1960s conservationist Martin
24 Litton brought these boats to the Grand Canyon, decked
25 them over, rechristened them wooden dories after the

1 similar-looking Grand Banks fishing boats, and began
2 running commercial river trips in them. They worked
3 great; it caught on."

4 Does that mean that people weren't running
5 commercial boats in the Grand Canyon until the 1960s?

6 A. No, it means that wooden boats had kind of
7 gotten eclipsed by rubber boats starting in the 1950s,
8 and the last few people running wooden boats had
9 basically Nevills boats, which are very low to the
10 water until they just get inundated. And when Martin
11 brought these high-sided dories down, they were just so
12 much better that they eclipsed all the other wooden
13 boats. But, still, the rubber boats are the main boat.

14 Q. But then people started running commercial,
15 these dory boats commercially?

16 A. Yeah, Martin Litton did, and now most river
17 companies have a few in their fleet.

18 Q. And this is the last exhibit that I'm going
19 to ask you about.

20 This is X072. It's the Arizona Highways,
21 July 2004, which you discussed with Ms. Hernbrode
22 earlier today. Let's turn to Page 6 of the magazine,
23 which actually isn't paginated. It's the cover of your
24 article.

25 A. The picture.

1 Q. This is an article you wrote, correct?

2 A. Right.

3 Q. Turning to the next page, Page 8, the fourth
4 paragraph on that page, which is in the second column,
5 you write "My world reverberates with a deep baritone
6 roar. I'm entering Granite Falls, one of the largest
7 rapids on the Colorado River - one that most early
8 river runners portaged around or lowered their boats by
9 rope down the boulder-studded shore. Boat designs and
10 techniques have evolved, however, and navigating this
11 maelstrom is now standard procedures. But the tiny
12 cedar boat I am rowing is not standard."

13 And the picture to the right of that
14 paragraph, that's you in the Julius?

15 A. That's me in the Julius in Granite Falls.

16 Q. And that's the boat you mean when you say "my
17 tiny cedar boat"?

18 A. Yeah.

19 Q. All right. Let's turn to Page 12, the third
20 paragraph there in the first column. You write "But
21 wooden boats are still in the minority, rowed by the
22 eccentric and the devoted. Most oarsmen train in
23 inflatable rafts, and the majority of them never find a
24 reason to press their luck with a fragile boat."

25 So you would agree that your Julius replica

1 is fragile compared to modern recreational boats?

2 A. Compared to a raft.

3 Q. And the 1911 Edith, that's even more fragile,
4 at least on the sides?

5 A. Edith is, I think, tougher. Well, it's as
6 tough as the Julius, yeah. They're both heavily
7 overbuilt.

8 The modern boats, the dories, are quite
9 fragile, which is what is being rowed commercially in
10 Grand Canyon. They won't take near the hit that these
11 old ones will. And there's some pictures of them in
12 there too somewhere. Page 8, those colored boats are
13 the modern dories, and those are the ones with the
14 quarter-inch sidewalls, and those are quite fragile.

15 Q. Okay. And then on Page 13 of this article,
16 the first column, last paragraph, you write "But we're
17 not always that fortunate. If we have had better luck
18 than some of the pioneers did, perhaps it is because on
19 this trip we have almost 500 transits of Grand Canyon
20 beneath our belts."

21 What did you mean by "we're not always that
22 fortunate"?

23 A. Well, there were a lot more boat wrecks in
24 the early days.

25 Q. And then what did you mean when you wrote "we

1 had better luck than some of the pioneers did"?

2 A. Well, luck is a pretty funny word. I mean we
3 got through without crashing, and a lot of them didn't.
4 But is it luck, is it skill? It sounds cocky if you
5 say it's skill, so you say it's luck.

6 Q. Earlier today, when I asked you about whether
7 you talked about maybe putting one of your boats on the
8 Verde, you said that we talked about possibly trying to
9 row one down the Verde. Who did you mean by we?

10 A. When I was interviewed.

11 Q. And that discussion happened before the
12 interview or during it?

13 A. That day sometime. I'm not sure. I had just
14 come out of knee surgery.

15 Q. Did Mr. Fuller, Mr. Farmer, or anyone else
16 ask you to borrow one of your replica boats so they
17 could try to run them on the Verde?

18 A. No.

19 Q. You also said that you ran your replica boats
20 on all of the rivers the original designer of the boat
21 ran them on; is that correct?

22 A. That's true with the Holmstrom boat, yeah.

23 Q. As far as you know, the designer of the Edith
24 never ran the Edith on the Verde, correct?

25 A. I don't believe Galloway ever got this far

1 south.

2 Q. Or anyone else?

3 A. Any Grand Canyon boater, no.

4 Q. So the designer of the Julius or no?

5 A. No.

6 MR. HEILMAN: I think that's all the
7 questions I have for you.

8 THE WITNESS: Okay.

9 CHAIRMAN NOBLE: Okay. We'll take a
10 break, 15 minutes. Let's be back about 2:48.

11 (A recess was taken from 2:33 p.m. to
12 2:48 p.m.)

13 CHAIRMAN NOBLE: Mr. Hood, please
14 proceed.

15 MR. HOOD: Thank you, Mr. Chairman.

16

17 CROSS-EXAMINATION

18 BY MR. HOOD:

19 Q. Good afternoon, Mr. Dimock.

20 A. Good afternoon.

21 Q. We haven't had a chance to meet yet. My name
22 is Sean Hood, and I represent Freeport Minerals
23 Corporation.

24 A. Okay.

25 Q. Thank you for coming by this afternoon to

1 talk about your tape and the testimony you've given.
2 I've just got a few follow-up questions, and I'm going
3 to do my best to be brief. Because I'm following
4 Mr. Heilman's cross-examination, I'm going to bounce
5 around a little bit.

6 A. Okay.

7 Q. So if you're not sure what I'm getting at or
8 if I've moved off of a topic and you're unsure, let me
9 know, okay, and we'll get centered.

10 A. All right.

11 Q. The first thing I wanted to ask you about,
12 Arizona Raft Adventures, is that one of the companies
13 that you've worked for?

14 A. Yes.

15 Q. And, essentially, when you're talking about
16 these commercial boating activities, you're talking
17 about tourists are paying you and others to run them
18 down the river?

19 A. Correct.

20 Q. So it's recreational for them. Obviously has
21 a commercial component, because you're doing it for a
22 living?

23 A. Exactly.

24 Q. Okay. And you've been doing that, I saw in
25 the article that's X072, you've been doing that for

1 over a quarter century in the Grand Canyon?

2 A. Forty-four years.

3 Q. Okay. And is it fair to say that the vast
4 majority of your boating experience is in the Grand
5 Canyon or the Colorado?

6 A. Correct.

7 Q. You talked about having some prior experience
8 on the Verde in the 1970s in kayaks, I believe; is that
9 right?

10 A. Kayaks, canoes, and small rafts.

11 Q. And small rafts, okay.

12 And then I think in response to one of
13 Mr. Heilman's questions, you said you've also been back
14 to the Verde one time, either in the '90s or maybe in
15 2000; is that about right?

16 A. Yeah.

17 Q. And what craft were you on for that trip?

18 A. Gosh, I'm trying to think. It was a kayak.

19 Q. A modern plastic kayak?

20 A. Plastic kayak.

21 Q. And for those of us who are not avid boaters,
22 a plastic kayak is probably various different kinds of
23 plastic. Probably don't mean anything different to me.
24 They might to you. Are you able to differentiate among
25 the different kinds of plastic?

1 A. Not really. They're mostly some sort of a
2 polyethylene.

3 Q. Okay. And is that the same sort of plastic
4 kayak that sort of proliferated in the '70s?

5 A. Yeah.

6 Q. And that's when that whole thing became very
7 popular?

8 A. They've used a lot of different plastics.
9 They've got some really tough ones now.

10 Q. And are those a variation on the
11 polyethylene, or is it a different plastic?

12 A. I'm not exactly sure.

13 Q. And so you've done kayaks, canoes, and rafts
14 on the Verde. Most of that was done in the 1970s and
15 then the one trip here in the '90s or in 2000, correct?

16 A. Right.

17 Q. And you've also, in addition to your
18 considerable experience boating in the Grand Canyon, on
19 the Colorado, you've done a lot of historical research
20 concerning boating on the Colorado; is that right?

21 A. Correct.

22 Q. Have you done any similar research concerning
23 boating on the Verde?

24 A. No.

25 Q. So you're not going to be able to add

1 anything to these proceedings in terms of boating
2 accounts that have occurred on the Verde in historic
3 times --

4 A. Correct.

5 Q. -- say 1912, before 1912; you don't have any
6 of that information?

7 A. No.

8 Q. You mentioned a few times, both on your video
9 and then in your live testimony, this notion that
10 back -- turning the clock back a hundred years or
11 thereabouts, circa statehood, things were different
12 then. Boatmen were different then. Your average
13 citizen out in the West was different than we are.
14 Correct?

15 A. (Witness nodded.)

16 Q. Is that right?

17 A. Yes.

18 Q. And handier, as a general matter, right?

19 A. I would say more often than not.

20 Q. I bet about 50/50 changing a light bulb, so I
21 wouldn't have done very well in the West in 1912. Of
22 course, I wouldn't have had to change light bulbs, I
23 suppose. But I probably would have died if I tried to
24 run a river. I know my limitations, or at least a lot
25 of them.

1 So, basically, you would expect that that
2 sort of western American man faced with a challenge
3 would be able to craft a boat that's suitable to the
4 watercourse; is that right?

5 A. Some would.

6 Q. Uh-huh, some would. Not everybody, not
7 Larry, Dick, and Sam; but somebody, when met with a
8 need and a challenge, would be able to craft a boat
9 that would be suitable for the stream?

10 A. Sure.

11 CHAIRMAN NOBLE: You mean they had
12 lawyers back then too?

13 THE WITNESS: They shot them.

14 CHAIRMAN NOBLE: If they could catch
15 them.

16 BY MR. HOOD:

17 Q. I would have been in big trouble in the
18 American West circa 1912.

19 But I just want to make sure I'm
20 understanding. You're painting a picture of a time
21 when people were, I think you used the word, adaptive
22 or more adaptable, something along those lines; is that
23 right?

24 A. Yeah, yeah. I mean in the areas I do know
25 about, the San Juan and the Green, people were doing

1 that. People with no boat building training were
2 building crafts and going down the river, and some did
3 a lot better than others.

4 Q. Okay. And so if we're -- and obviously you
5 have vast experience building boats, you have vast
6 experience boating on the Colorado right?

7 A. Uh-huh.

8 Q. And if we're going to take you back in time
9 to 1912 and say, "Mr. Dimock, we need you to craft --
10 we need you to build the right boat for us to be
11 supplying these military installations along the
12 Verde," do you feel you could meet that challenge?

13 A. Well, we could build something that I think
14 would work and see how it worked and maybe adapt.

15 Q. If the first try didn't work, you would have
16 adapted --

17 A. Yeah.

18 Q. -- and found a boat that worked?

19 A. Yeah, and I imagine there would be portaging
20 and dragging involved.

21 Q. And that's because -- and you've been, I
22 think, straightforward. -- the Verde is a shallow,
23 rocky river?

24 A. Correct.

25 Q. Okay. So you're going to have -- even when

1 you pick the right boat and you build the right boat,
2 you're going to be hitting rocks; is that right?

3 A. Unless it's real high water.

4 Q. Right.

5 A. You might run pretty clean.

6 Q. Under more ordinary circumstances, normal
7 flows, you're going to hit rocks, you're going to have
8 probably some things you're going to need to portage,
9 correct?

10 A. I believe so.

11 Q. Okay. And so these adaptive Western
12 Americans, if met with a need for using the river, you
13 think they would have been able to satisfy that need;
14 they would have adapted and figured out a way to build
15 the right boat to serve that task?

16 A. I would think so.

17 Q. I want to talk a little bit about -- let me
18 show you. This is Figure 5. This is just for the
19 record. You don't need to worry about this,
20 Mr. Dimock. This is Figure 5 from Mr. Burtell's
21 report, which is Freeport 1, X009. Again, it's
22 Figure 5.

23 And this shows some rapids that exist along
24 sort of the upper portion of the Verde River, and these
25 are all I or I+ rapids. I'm pretty sure about that.

1 The record will correct me if I'm off and there's a II
2 in there. But these are all I's, I+'s, I believe.

3 It's been so long since you have had any
4 regularity on the Verde River. Do you have any
5 familiarity with any of these rapids?

6 A. These look to be above the stretch that I'm
7 most familiar with. Is this like up around
8 Perkinsville? Does anyone know?

9 Q. This is Segment 1, so it's very likely that
10 this would have been upstream from where you were
11 boating. I think that's probably a good guess.

12 A. Yeah, I've paddled through there. Yeah,
13 that's pretty far up the river.

14 Q. Right, it is.

15 Well, let me ask you this: You talked about
16 you think you could get the Edith down the Verde; is
17 that right?

18 A. Well, we never really said where we were
19 starting and stopping.

20 Q. Okay. Well, let's --

21 A. I mean starting way up by Sullivan Lake, it's
22 probably not going to work so well.

23 Q. Not going to work.

24 Where do you think is the farthest upstream
25 you could get the Edith onto the Verde and get it all

1 the way down to the Salt?

2 A. I would think somewhere around Perkinsville.

3 Q. Let me ask you, if you had the Edith, let's
4 say you got it in the river upstream of these rapids.
5 Just looking at these rapids as they're portrayed in
6 these photographs, are these rapids that you would feel
7 comfortable running in the Edith, or are these things
8 you would be looking to line or portage?

9 A. You would be lining or portaging in these
10 guys here at this water level.

11 Q. Because these rocks would be smacking the
12 wood around pretty good; is that right?

13 A. Yeah. You would hang up in this Guv Drop
14 one. It doesn't look like you would get through at
15 that water level.

16 Q. And so you described the lining and portaging
17 process earlier today. You would hope you've got at
18 least one compadre with you to help you with those
19 processes; is that right?

20 A. You would hope, but you might not.

21 Q. You talked about some of the history of early
22 boating on the Colorado River and the accounts that you
23 came across in your research, and you've written books,
24 and you mentioned one example of a circumstance where
25 there was somebody who supposedly had done it before

1 Powell; did I write that down correctly?

2 A. There is an account.

3 Q. What was his name? I missed the name.

4 A. James White.

5 Q. James White, okay. And it sounded like
6 there's -- is there scholarly debate as to whether that
7 trip actually took place?

8 A. Yes, there is.

9 Q. What's the evidence, what's the evidence that
10 it did take place?

11 A. He was found in where upper Lake Mead is now
12 near the mouth of the Virgin River in a sunbaked,
13 half-naked, half-starved, semi-delusional state on a
14 very primitive log raft. And when they nursed him back
15 to health, he said he had started up in the San Juan
16 Mountains, gone down the San Juan River on foot, and
17 then north till they hit the Colorado. He said they
18 were attacked by Indians. One of his buddies was
19 killed. He and the other guy ran down to the river,
20 built a log raft and started floating, and then his
21 buddy fell off and drowned at some point. And he said
22 he was out there two weeks.

23 Q. Goodness gracious, quite a trip.

24 A. Yeah, and so --

25 Q. I wouldn't have made it.

1 A. -- the debate is where did he really start
2 that float. And most early historians were actually
3 river-runners that were offended by the thought someone
4 could survive on a raft and did their best to discredit
5 him.

6 Q. Do you think he actually made that trip, or
7 do you have some --

8 A. I think it's the most logical answer.

9 Q. And what was the source of skepticism among
10 some other scholars? Was it just that there was no
11 support for it aside from his own word?

12 A. There was no witnesses, no one to say he
13 really started anywhere in particular.

14 Q. Other than what he said?

15 A. Other than what he said.

16 They all believed he was telling what he
17 believed to be the truth. They said he was too dumb to
18 make up a lie. But any of the other stories that the
19 skeptics made up were even less probable that he would
20 have survived at that time, so...

21 Q. So some scholars had skepticism about the
22 veracity of what he was saying or at least the accuracy
23 of what he was saying?

24 A. Right.

25 Q. But there may not have been a better, more

1 reasonable explanation for what happened?

2 A. Right.

3 Q. So it's certainly possible that when you just
4 have someone saying, "Hey, I went and ran this river,"
5 and you don't have any support for it, you don't have
6 witnesses, it may not have happened, right?

7 A. Yeah.

8 Q. Correct?

9 A. Correct.

10 Q. I think I heard you say that. I just wanted
11 to make sure it was on the record.

12 A. I was choking when I said yes.

13 Q. Oh, you've got water. Are you okay?

14 A. Yeah.

15 Q. Great.

16 You talked a little bit about the collapsible
17 canvas canoes that were available circa statehood?

18 A. Right.

19 Q. And I think you said that that was before, is
20 that -- now they're Hypalon?

21 A. No, the collapsible can -- well, there's two
22 ones we spoke of. The Klepper --

23 Q. That's for the kayak, not for the canoe.

24 A. Okay, yeah.

25 Q. Okay. Sorry, I had that backwards.

1 A. Those collapsible canoes, I don't know if
2 they have a modern day equivalent.

3 Q. Okay. So those collapsible canvas canoes, if
4 you're running down the Verde and going through these
5 sorts of rapids, is that canvas going to be tested
6 pretty thoroughly in terms of its ability to hold up?

7 A. These rapids at that water level, I think I
8 might carry around. Those are pretty low and rocky
9 there.

10 Q. Okay. And just for the record, that, again,
11 was Figure 5 from Mr. Burtell's report, which is X0079,
12 Freeport 1.

13 You talked on the video about modern boatmen
14 having -- and I have this in quotes, so I hope I got
15 this right. -- a hundred years of growing skills, and
16 you talked about how people in the late 1800s and in
17 the early 1900s, they were kind of doing this as they
18 went; they didn't have a lot of history to draw from
19 like we do now; is that fair?

20 A. Correct.

21 Q. And so what are some of the skills that have
22 developed over the last hundred years that are so
23 critical to what -- you know, you said we can run
24 anything now. We've got the knowledge. We've got the
25 background. We've learned from our predecessors and

1 built upon that. What are some of those skills that we
2 have now that they didn't have back in 1912?

3 A. Well, it's just being able to it's called
4 reading water, you know, looking at a complex set of
5 rocks and differential currents and knowing what that
6 will do to a boat, and then being able to position your
7 boat such that you use those strange currents to
8 further your goal of surviving; and it's very complex
9 stuff and it takes a long time to learn to do it well.

10 Q. Is it the equivalent of someone sort of
11 computing the physics in their mind visually as to
12 what's likely to happen, or is it --

13 A. Yeah. It's a time-space thing, and some
14 people get it like that and others never get it.

15 Q. How is it that you and your contemporaries
16 benefited from the experiences of your predecessors
17 such that it's this continuum of a hundred years of
18 knowledge that's grown?

19 A. Well, I started learning in the '70s from
20 people who learned in the '60s from people before them;
21 and, honestly, it was pretty primitive even in the
22 early '70s of some of the techniques in those rapids,
23 and it's still changing. You know, we're still --
24 we'll teach a new trainee in about two hours what it
25 took us 20 years to figure out. It's frustrating.

1 Damn those kids. And they're better than we are.

2 Q. Well, and here's where I think I have a
3 correct note on the collapsible kayak. Those were
4 canvas, and now they're Hypalon; is that right?

5 A. The kayak, yeah.

6 Q. Okay. And is the Hypalon going to stand a
7 better chance of getting through those Figure 5 rapids
8 than the canvas would have?

9 A. I think you can make it through there in a
10 Klepper, yeah. And the collapsible canoes were much
11 flimsier than a Klepper. You know, even the old
12 Klepper you might be able to bounce down through that.

13 Q. By the old Klepper, do you mean the circa
14 1912 Klepper?

15 A. Yeah.

16 Q. And what material was that, remind me?

17 A. I believe it was a rubberized canvas.

18 Q. A rubberized canvas.

19 A. Yeah.

20 Q. Okay. And what's going to do a better job
21 down those Figure 5 rapids, the current Hypalon or the
22 old-time --

23 A. The more modern.

24 Q. The more modern is going to be better for
25 that?

1 A. Yeah, the tougher stuff. Be longer before
2 you've got to fix it.

3 Q. You said at one point that in Arizona you
4 would imagine that people were either buying the steel
5 boats that you could order, and you said 50 bucks and
6 they'll show up by train, or building their own by, I
7 guess, homemade, basically, boats; is that right?

8 A. Uh-huh. That's my guess.

9 Q. Yeah.

10 A. That's what we're seeing in Grand Canyon.

11 Q. The steel boats, do you think those are the
12 kind of boats that you would want to use on the Verde,
13 the shallow, rocky type of small stream?

14 A. Boy, not most of them. Most of them were
15 modeled like the Major Powell boats that have sort of a
16 round belly and a bit of a keel to them, and that keel
17 is very vulnerable in shallow streams.

18 I think they did have some flat-bottomed
19 steel boats, which would have been fine.

20 Q. From a weight perspective, is that a good
21 choice for the Verde?

22 A. They were fairly light, really. They didn't
23 weigh that much. They were cheap steel with ribs in
24 them. Sometimes they had wood ribs in them.

25 Q. So from your perspective, those

1 flat-bottomed, smaller steel boats would have been a
2 fine choice for the Verde?

3 A. Probably so.

4 Q. Do you have any -- I don't think you've
5 looked into whether any were used on the Verde. You
6 don't have any information about that?

7 A. I don't, no. I mean I heard the stories of
8 the iron boat, but Lord knows what that was. Was it a
9 sheet steel or was it made out of horseshoes? I don't
10 know.

11 Q. What was the design?

12 A. Yeah.

13 Q. What was -- okay.

14 And then the other point about the home-built
15 boats is you said unless we have a picture, we don't
16 really know what it was, correct?

17 A. Correct.

18 Q. So even if someone says I've got a -- I made
19 a boat out of X, Y and Z materials, unless you have a
20 photograph, you're not really able to tell what that
21 boat was capable of doing; is that right?

22 A. Huh-uh.

23 Q. Correct?

24 A. Correct.

25 Q. Hard to compare any of those home-built boats

1 unless we've got a good picture --

2 A. Yeah.

3 Q. -- to anything that we have today, right?

4 A. Exactly.

5 Q. Yeah.

6 San Juan River you have some experience on as
7 well, you've described; is that right?

8 A. Quite a bit.

9 Q. Yeah.

10 And you talked about some steamboat
11 adventures, and you said that the steamboats didn't
12 prove practical on the San Juan; is that right?

13 A. Steamboats were on the Green and Colorado.

14 Q. That was the Green and Colorado.

15 A. Yeah.

16 Q. Okay.

17 A. There are pictures of something that looks
18 like a steamboat, but I think it's a dredge on the
19 Colorado; great, big, huge wooden thing during the
20 mining days of the 1890s.

21 Q. So when you made the statement on your -- and
22 I misunderstood you on the tape when you said that they
23 didn't prove practical. What stream were you talking
24 about?

25 A. The Green, upper Green, and the Green and

1 Colorado stretch between Green River, Utah and Moab,
2 Utah.

3 Q. Okay, okay. And you've alluded to this, but
4 my note was not clear. What boats have you used on the
5 San Juan River?

6 A. I've used kayaks, canoes, rafts, dories, and
7 one Galloway-style boat, motorized rafts. I think
8 that's about it.

9 Q. And you mentioned earlier the San Juan is a
10 somewhat larger, higher-flowing river than the Verde,
11 correct?

12 A. Yes.

13 Q. And I gather that it sort of surprises you
14 the result from the courts that the San Juan is deemed
15 nonnavigable; is that fair?

16 A. It does.

17 Q. That surprises you?

18 A. It does.

19 Q. What is your understanding of what it means
20 to be a navigable stream?

21 A. My understanding is that you can conduct
22 commerce in some sort of a floating vessel moving along
23 that river, which you could. I mean there were
24 trappers and miners and boaters on that river. So I
25 was surprised to hear that.

1 Q. And you've engaged in recreational boating on
2 numerous occasions on the San Juan?

3 A. Oh, yeah. That sort of commerce didn't exist
4 then, but it does now.

5 Q. Right.

6 What times of year have you run the San Juan?

7 A. I've run it in December and then March
8 probably through October. So most of the year.

9 Q. Is it similar to the Verde; that you're going
10 to get your best, most consistent water sort of in the
11 early spring, when you're getting the snowmelt runoff?

12 A. That or monsoons. The highest water on the
13 San Juan is usually August or September. But, of
14 course, all my experience is after the dam went in, the
15 Navajo Dam, so I don't know what spring runoff used to
16 be like. Never looked it up.

17 But we also do get high flows out of the
18 Animas and the Mancos River onto the San Juan, so the
19 highest consistent flows are more in June, and then the
20 flood flows are August, September.

21 Q. Okay. Mr. Heilman asked you an interesting
22 question about whether Mr. Fuller asked you if he could
23 use the Edith or one of your other boats to come down
24 the Verde, and you said no one asked you that; is that
25 right?

1 A. No one's ever asked me to borrow that boat.

2 Q. Let's get into hypotheticalville again. If,
3 on the day of your testimony videotaped, they said,
4 "Hey, can we borrow this for a week and go take this on
5 the Verde," what would you have said?

6 A. That depends on who's borrowing that boat and
7 what I know of their boating skills. I put a lot of
8 work into it. I've got friends I would let do it, but
9 I know their boating skills and they're not going to
10 abuse it too badly.

11 Q. When they encounter things that would concern
12 you, you would hope that they would line or portage, as
13 appropriate?

14 A. I would trust their judgment.

15 Q. You said that for the Verde, if you were
16 going to design your ideal boat for that stream, you
17 said, "I would build a small, light craft that could be
18 maneuvered quickly," and you talked a little bit about
19 that with Mr. Heilman.

20 And so this would be something considerably
21 different from the Edith; is that right?

22 A. Yeah, I would go shorter and wider, knowing
23 what I know now today, and depending on if he wants me
24 to put a ton of mining gear in it, I'll build a bigger
25 boat. But it depends on what we're doing with it,

1 filling it up with stuff or just taking one or two
2 people.

3 Q. If you're just worried about -- well, what
4 would be the dimensions of that small boat that you
5 would want to build that would be wider, but you would
6 want to have a flatter bottom, and shorter I think you
7 said? Roughly, what would be --

8 A. What are we doing with it?

9 Q. Let's say you're supplying food up and down
10 the river, you're hauling food goods.

11 A. Up around Perkinsville or --

12 Q. Yes.

13 A. -- down below?

14 Q. Sure.

15 A. I would go with a fleet of pretty small ones
16 for that far up the river. You get down by Camp Verde
17 and we would go bigger boats.

18 Q. So pretty small ones, what are they?
19 Describe for us what you would probably have in mind.

20 A. I wouldn't go much bigger than a canoe. You
21 know, maybe 2 or 3 foot bottom up on that upper
22 stretch. My mind's been wrapped around the lower
23 stretch until I saw these pictures, so...

24 Q. And you say a fleet of canoes, and that's
25 because in order to move a reasonable amount of food,

1 you would need several of them?

2 A. Yeah, or one guy who's really busy.

3 MR. HOOD: That's all I have,

4 Mr. Dimock. I appreciate your time.

5 THE WITNESS: All right.

6 MR. HOOD: Thank you.

7 COMMISSIONER HENNESS: Mr. Chairman.

8 CHAIRMAN NOBLE: Yes.

9 COMMISSIONER HENNESS: I have a
10 question.

11 CHAIRMAN NOBLE: Sure. You have a
12 question for Mr. Dimock?

13 COMMISSIONER HENNESS: Yes, please.

14 CHAIRMAN NOBLE: Okay.

15 COMMISSIONER HENNESS: Obviously the day
16 of statehood there were no structures, artificial
17 structures, on the system at that time; but there are
18 now. The types of boats that you've described here
19 today, how -- would it have any effect on the type of
20 boat, the difference between high water and low water
21 in the canyon?

22 THE WITNESS: On the Verde?

23 COMMISSIONER HENNESS: No, on the
24 Colorado.

25 THE WITNESS: Well, people were taking

1 the same kind of boats in high and low water, but
2 encountering different problems with them. High water
3 is really turbulent and swirly on the Colorado.

4 COMMISSIONER HENNESS: Does that come
5 into effect in your timing?

6 THE WITNESS: Well, before the dam it
7 did.

8 COMMISSIONER HENNESS: But not now.

9 THE WITNESS: Now that the Glen Canyon
10 Dam is in place, it really doesn't matter. It's all
11 within a pretty narrow --

12 COMMISSIONER HENNESS: How big a change
13 is it? Can you describe it?

14 THE WITNESS: Well, the cubic feet per
15 second on the Colorado now goes between 8,000 cubic
16 feet per second to maybe 20. Historic floods would go
17 up to 150 to 200,000.

18 COMMISSIONER HENNESS: Have you ever run
19 it at those levels?

20 THE WITNESS: I ran it at over about a
21 hundred thousand in 1983, when the dam was about to
22 fail.

23 COMMISSIONER HENNESS: I remember that
24 very well.

25 THE WITNESS: It was exciting.

1 COMMISSIONER HENNESS: Thank you,
2 Mr. Chairman.

3 CHAIRMAN NOBLE: Thank you.
4 Who is next?

5 COMMISSIONER HORTON: I wanted to say --

6 CHAIRMAN NOBLE: Sure.

7 COMMISSIONER HORTON: I wanted to thank
8 Mr. Dimock. He had a very unusual perspective and
9 expertise that we appreciate.

10 THE WITNESS: Thank you.

11 CHAIRMAN NOBLE: Most certainly we do.

12 THE WITNESS: Am I done?

13 CHAIRMAN NOBLE: But we're not quite
14 done with you.

15 THE WITNESS: Oh, boy.

16 MR. BREEDLOVE: I think we have some
17 more.

18 MS. HERNBRODE: I just have -- I thought
19 you were shaking your head no.

20 MS. MONTGOMERY: Yeah, I am. I think
21 Sean got them. Thank you.

22 MS. CAMPBELL: Same with me. You're so
23 skilled.

24 MS. MONTGOMERY: I didn't say that.

25 MR. HELM: I can do it from here. I

1 just have one question.

2

3

CROSS-EXAMINATION

4 BY MR. HELM:

5 Q. You described to one of Mr. Hood's questions
6 a boat you would build to supply the forts along the
7 river or the Verde?

8 A. Yeah.

9 Q. When he asked you for the optimum description
10 of that boat.

11 A. Yes.

12 Q. Would that boat be the same boat you would
13 design if you were simply designing a boat to transport
14 yourself and one or two other people down the river
15 from Perkinsville to Phoenix or someplace?

16 A. No. If you're hauling supplies, you want a
17 bigger boat.

18 MR. HELM: Thank you.

19

20

REDIRECT EXAMINATION

21 BY MS. HERNBRODE:

22 Q. I just have a few more, Brad, and then you'll
23 be free to go.

24 A. Yippee.

25 Q. When you were talking about a bouncy river or

1 an open and obvious threat, you're talking about rapids
2 there?

3 A. Right.

4 Q. And are you talking about Class I or II
5 rapids or bigger rapids than that?

6 A. Oh, anything where it looks like there's a
7 chance you're going to be bounced around or knocked out
8 of the boat.

9 Q. So you could have a long Class I that's
10 choppy you might bounce out on?

11 A. Yeah. I mean it all depends on who put the
12 classification on it. Those things are not to be
13 trusted.

14 Q. And people can fall out of a boat on flat
15 water?

16 A. More people drown on Lake Powell than in
17 Grand Canyon.

18 CHAIRMAN NOBLE: Well, that's because
19 they're more intoxicated on Lake Powell.

20 THE WITNESS: That is correct, sir, and
21 they usually have their zipper down because they fell
22 out of the boat when they were peeing. That's true.

23 CHAIRMAN NOBLE: It is.

24 BY MS. HERNBRODE:

25 Q. What kinds of equipment were the Kolb

1 brothers carrying in the Edith and the Defiance?

2 A. They had a lot of photographic equipment and
3 they had some movie camera equipment, tripod, film,
4 food, and a lot of ropes, blocks, and tackles for
5 lowering themselves around rapids, what looked to be
6 insufficient clothing.

7 Q. Any idea of how much weight they were
8 carrying?

9 A. I don't know.

10 Q. But we're not talking digital cameras; we're
11 talking those big heavy things?

12 A. Yeah, big cameras, box cameras, stereo
13 cameras. They had all kinds of cameras.

14 Q. Glass plates?

15 A. No.

16 Q. Boats like the Edith were designed to haul
17 cargo; that's what Galloway was looking to do, right?

18 A. He was a trapper. That's what he designed
19 them for.

20 Q. When you had side hits in the modern dory,
21 did they wreck the boat?

22 A. I've busted them completely in two before.

23 Q. Are you still running the boat you broke in
24 half?

25 A. Yeah.

1 Q. How old is it now?

2 A. Forty-four years.

3 Q. You were asked about the floors wearing out
4 on Grand Canyon dories, and I want to make sure this is
5 very clear in the record. The floor and chines wearing
6 out is a problem because Grand Canyon boats are
7 expected to take so many trips, not because the floor
8 and chines will wear out on a single or even several
9 trips; is that true?

10 A. Correct. You can break one to pieces on a
11 single trip, but it's unusual.

12 Q. But the wearing out, the fiberglassing the
13 bottoms and stuff is to deal with the repetitive nature
14 of their trips?

15 A. Yeah. Yeah, they're commercial workhorse
16 boats.

17 Q. We talked a lot about boat building
18 technology and its evolution. In your opinion, would
19 the technology that's evolved since 1912 be necessary
20 to run the Verde? Do you have to have a more modern
21 boat to run the Verde?

22 A. No. I think it makes it easier, but you
23 don't need it.

24 Q. Do you ever repair rubber rafts on the
25 Colorado?

1 A. Yes.

2 Q. Do flips happen on the Colorado?

3 A. Quite regularly.

4 Q. Are there some fun terms that have been
5 designed to describe flips just because they happen so
6 regularly?

7 A. Oh, there's dump trucks and Maytags. That's
8 pop, pop, pop, pop, pop, pop. And you do it faster,
9 then it's a window shade.

10 Q. Do you have a yard sale --

11 A. Yard sale, yeah.

12 Q. -- with the equipment downstream once you've
13 flipped a boat?

14 A. Yeah. In the commercial boats, you know,
15 it's usually we've got them up, right side up, no yard
16 sale, everything's rigged in; but the private trips are
17 pretty exciting to watch.

18 Q. Were wooden boats used for commerce in the 18
19 and 1900s?

20 A. Yeah. That's all there were. A lot of stuff
21 was done on the lower Colorado, up in Utah.

22 Q. Supposing your knees were heeled, you could
23 take the Edith out, a boat exactly the same as a boat
24 built in 1911, and use techniques that were used to row
25 in 1911, and make it down the Verde with no problem?

1 A. I wouldn't say no problem, especially on this
2 upper stretch. You would have a lot of problems, but
3 you could do it.

4 Q. So assuming there are -- we have miraculously
5 gotten rid of all the dams on the Verde, because I
6 understand those would be a problem in the Edith, where
7 would you put her in?

8 A. I don't think I would go above Perkinsville
9 in a wood boat. That upper stretch in there is just
10 really -- it looks like that.

11 Q. So at Perkinsville; run it down through
12 Cottonwood, Camp Verde, Beasley Flats?

13 A. Yeah. Yeah, I don't know what's under those
14 dams down there, but I don't think there was much.

15 Q. If they looked like the stuff above it or
16 below it --

17 A. Yeah.

18 Q. -- you would be okay?

19 A. Yeah. And you would probably want to do some
20 rope work around Verde Falls.

21 Q. Okay. Anywhere else?

22 A. Not that I can think of.

23 Q. Run it all the way down to the junction with
24 the Salt?

25 A. I would go to the ocean if you've got the

1 flow.

2 Q. When did Galloway first build a
3 Galloway-style boat?

4 A. Oh, in the early 1890s he's recorded as
5 building them up in -- up around Vernal, at the steep,
6 rocky stuff up there.

7 Q. Is it surprising to you that people built
8 boats and ran them on the Verde in the 18 and 1900s?

9 A. No.

10 Q. You have had some experience with boats of an
11 older design than the Galloway boats?

12 A. Yeah. The Powell-style boat, we've run
13 replicas of that in Grand Canyon.

14 Q. You ran a Powell replica through Grand
15 Canyon?

16 A. Yes.

17 Q. Once, twice?

18 A. Ran one once and ran support for another run.

19 Q. Those were associated with --

20 A. Movies, yeah.

21 Q. You didn't build those boats, though?

22 A. No. They're very difficult to build.
23 They're an extremely sophisticated hull.

24 Q. Were Powell boats the rocket ships of their
25 time?

1 A. Well, it was the only thing anyone had tried.
2 Running rapids in rowboats was unheard of, and Powell
3 thought that these harbor craft would be really good
4 because they were tough and fast; but he didn't take
5 into account that you really couldn't turn them at all,
6 and so they had a lot of problems with them. They
7 portaged a lot.

8 But, again, with modern boating techniques,
9 we can run all those rapids down there. It's kind of
10 terrifying, but...

11 Q. In a harbor you want a keel, so that when you
12 stroke, the boat keeps going straight?

13 A. Uh-huh.

14 Q. In a river you don't want a keel because you
15 want to be able to turn?

16 A. Correct, in a rocky river. You would be fine
17 on the Mississippi.

18 Q. Would you be inclined to loan someone you
19 don't know very well a boat you spent several months
20 building?

21 A. No.

22 Q. That's why we didn't ask.

23 Would a wood boat shatter like a fiberglass
24 boat?

25 A. Depends on the boat. Fiberglass can just

1 completely shatter. The big plank boats will take
2 tremendous hits. If you hit them on the end, it's just
3 like pounding a fence post; nothing happens at all.

4 Q. Is a fiberglass boat very easy to repair on
5 the river?

6 A. I hate fiberglass boats. Duct tape. That's
7 what we use.

8 Q. Those photos that you were shown by
9 Mr. Hood --

10 A. These ones?

11 Q. Yeah, out of Mr. Burtell's report. Could you
12 run those in a canoe or kayak with no problem?

13 A. I have, actually. I didn't even recognize
14 them, it's been so long; but, yeah, we've run all that
15 upper stuff in kayaks.

16 Q. And a canoe?

17 A. I have not done it in a canoe.

18 Q. Do you think you could?

19 A. Yeah.

20 Q. How about at higher water in the Edith?

21 A. Probably.

22 Q. Canvas canoe?

23 A. Canvas like those flimsy little collapsible
24 turn of the century ones?

25 Q. Yeah.

1 A. No. Those were more of a flat water boat.
2 But something like a Peterborough, like the tough
3 canvas-covered wood canoes, yeah.

4 Q. Have you run Cottonwood to Camp Verde?

5 A. Yeah.

6 Q. And you could do that in a canoe or kayak?

7 A. Yeah.

8 Q. The Edith?

9 A. Yeah.

10 Q. A canvas canoe?

11 A. Yeah.

12 Q. The stretch you're most familiar with is
13 Beasley Flat down?

14 A. Beasley Flat to Childs.

15 Q. And you could run that in a canoe or kayak?

16 A. Yeah.

17 Q. Or the Edith?

18 A. Yeah. And, again, probably take precautions
19 at Verde Falls.

20 Q. And the same thing for below the dams?

21 A. I have not been below the dams.

22 Q. Okay.

23 A. I understand it's pretty casual, but I
24 haven't been there.

25 Q. With the James White story, there were other

1 problems with his story that historians were debating
2 about other than the lack of witnesses?

3 A. Well, they just thought it couldn't be done.

4 Q. There was problems with timing as to where he
5 put on and where he came off and things like that?

6 A. Not really.

7 Q. Okay.

8 A. He said it took two weeks. Again, with no
9 witness for when he put in, it's hard to say you can't
10 do it in that amount of time; but in two weeks you
11 could do that, what he thought he did. And the actual
12 geography affixed to his story was not put there by
13 him, because he didn't know where he was.

14 He said he left and went north from the
15 San Juan toward the Colorado. That's all he knew. And
16 then all the other stories that were written about him,
17 they started putting place names on things that he
18 never put on, so...

19 James White, the alternative, one is to have
20 walked in a very short time from up near Four Corners
21 to Peach Springs or beyond through the Hualapai Nation,
22 who was at war with the whites right then. That's
23 probably not going to work out. And to go the northern
24 route would have taken more than a month longer than he
25 had to do it.

1 And he was witnessed going into the San Juan
2 Mountains. So you have to find a way to get him down
3 to the Virgin River somehow. And, you know, I've
4 always said I've watched people rowing hard in the
5 wrong direction in Grand Canyon for years, and they
6 always seem to come out, and may have done better on a
7 log.

8 So, you know, I think he could have done it.
9 I think if you launched a hundred James White, a bunch
10 of them would drown, but...

11 Q. Or be stuck in an eddy somewhere?

12 A. But you only need a couple of them to make it
13 through, you know. It's an unlikely story, but there's
14 a lot of stuff that happens that's unlikely.

15 Q. If you read an account of a successful
16 boating trip from the 1890s and it's noted that they
17 were using a small boat, but no photograph is shown of
18 the boat, do you question whether that account took
19 place? Do you have to have a photograph in order to
20 document that a trip took place?

21 A. I would want some more evidence than a small
22 story, but you certainly don't need to see the boat.
23 You know, like the Hum Woolley account, there's a very
24 good diary that has descriptions of place that seem
25 accurate enough that there's not much question he did

1 it. We would love to see the boat. The drawing of it
2 looks very modern. Looks like Buzz Holmstrom's boat.
3 It's pretty neat.

4 MS. HERNBRODE: Okay.

5 CHAIRMAN NOBLE: Is there anyone else
6 who has questions for Mr. Dimock?

7 Mr. Dimock, that concludes your
8 testimony before this Commission. You are welcome, of
9 course, to remain with us and enjoy the rest of the
10 discussion.

11 THE WITNESS: Enjoy?

12 CHAIRMAN NOBLE: We certainly appreciate
13 your being here. We appreciate the information that
14 you provided, and we thank you.

15 THE WITNESS: Thanks. Hope things go
16 well.

17 CHAIRMAN NOBLE: Okay. Let's see. It's
18 3:30. Are we going to have at Mr. Burtell?

19 MS. HERNBRODE: We need a minute or two
20 to set up, Mr. Chair.

21 CHAIRMAN NOBLE: Oh, we do?

22 MS. HERNBRODE: We're going to run the
23 computer again.

24 CHAIRMAN NOBLE: Okay. We will break
25 for 15 minutes. That will be our final break of the