They're here from Key Largo, Florida. And I can't give the whole biography so bear with me, but Ian has had a very, very exciting career. After leaving here, he went on into a very adventurous life and has been living under water; one of the world's renowned underwater living experts, correct? He has been with the Aurora Trust. He's the Founder and Director of the Aurora Trust and with that work, they actually do research on galleons, I call them, but vessels that have gone down that still have whatever they were carrying at the time. And that dates back to the 1600s, maybe?

Ian Koblick: 2,000.

Introducer: 2000? Oh, but I mean the ships that went down, they went down in the 1600s?

Ian Koblick: No. No, about 400 B.C. The oldest we've found is 700 B.C.

Introducer: Wow. 700 B.C. He's just a phenomenal man, though, and brings so much knowledge and we're really excited to have him back. So without further ado, let's welcome Ian.

Ian Koblick: Thank you very much. It's really a special treat to be here after, oh, I guess it's been 40-45 years since I've been back on campus.

And this is where it all started. And I'd just like to give you a little summary of what ran through my mind about last summer. I was doing a dive in Syracuse, Cicely. We were recovering the remains of a Greek and Syracusan battle that took place in 412 B.C. And so we were diving. I was down about 70 feet and watching my time and my air, as a good diver's supposed to do. And when my time was up, I looked at my air; there was plenty of air according to my pressure gauge. So I took another breath and there was no air. And I didn't even get a whole breath. So now I was at 70 feet, no air, and you only have one choice. And I was by myself diving because it was a working dive; it wasn't a sports dive. So I had to go the surface -- you have to go at a programmed rate; no faster than your bubbles or you're liable to get an embolism and die. However, it means at 70 feet, it's going to take 70 seconds, so it's over a minute that you'd have to be exhaling. So you have to time it just right, because if you don't time it just right, you pass out from CO2 buildup and then you drown. Well as I was coming up, I was headed for the surface and I looked up and you can see the light up there and it was about 30 feet away and I said, you know, I don't know if I'm going to make it. This is going to be really close. And at that point, a lot of things sort of flashed through my mind. How I got here and I thought of Chico. I thought of the love of my life, my marriage to Tonya for 50 years. That was very special. And Tony Gettler. Actually I didn't think of Tony Gettler, but he told me to say that [laughter]. Anyway, I did make it to the surface and survived that one but in that short period of time, that last 30 feet, I thought of all the really interesting projects and things that I've been involved in --almost all of them had to do with education on the importance of the ocean. And I tried to do that, to teach that and to really preach and make that happen for all these years.

I started out here, well, I ended up here from Alaska. I was coming down the Alaskan Highway. It was unpaved. We pulled into town, the middle of summer, hot and dirty. And I'd gotten a postcard from my sisters that said they were going to this little 4,000 student college -- Chico State College. And so we thought, gee, it's right on the way. Why don't we stop and visit them? Went up to Five Mile Dam, took a swim, saw what a beautiful place it was and fell in love with it and came and registered for school. And that was the change of my life. I was here about a year and we had a big house on Third Street. I don't if many of you have been around the town for a long time, but there was a gorgeous Spanish hacienda on Third and Chestnut. And we had lots of money from our firefighting days in Alaska so we rented this big house. And across the street were all the girls' dormitories. It was an important aspect of my educational program. And we entertained a lot that first year. And I thought there must be -- this town is missing something. I'm going to build a place where people can go, where they can socialize, where they can get a good meal, where they can get a great pizza and drink beer. And so I built a place called the Brazen Onager. And the Brazen Onager was where the bookstore is, right on First and Main right now. In fact, we poked around to find things yesterday just to see what was there. Well, the story behind the Brazen Nagger is that I decided that I wanted to have a pizza parlor, Hofbrau, named the Brass Ass. And I went to the city council and I filled out my application for a business license and I turned it in. And about five minutes later the sheriff came out of the back room, looked at me and said, "Young man, we're going to have any brass asses in my town." And that was it. So I went back and through a little bit of drinking we came up with the Brazen Onager. And so there is the Brazen Nagger. It's a little bass ass. And it says good fire, good cheer. I'll show you a couple more pictures.

This was what the place looked like, where the bookstore is over here and in order to market it, because we had a very limited budget, I bought a donkey named Donny and I built this little cart. And I'd take the cart up the Senator Movie House and the other movie house, pick people up and bring them there for the pizzas.

This is what it looked like inside. It was a pretty popular place. But the donkey acquired quite a reputation. Because the first thing is I used to ride him around -- before the cart, I used to ride him around town and I got arrested.

Audience: You got arrested?

Ian Koblick: Yes.

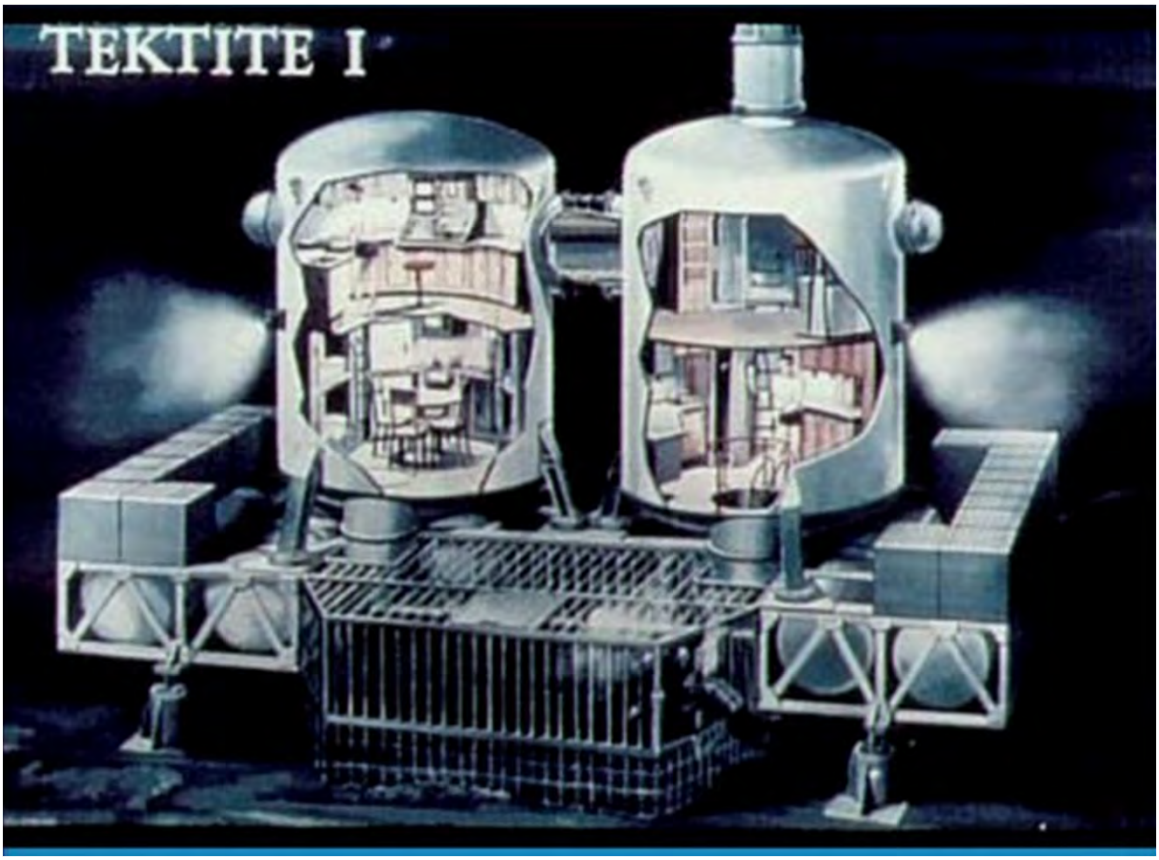
Ticket acquiring ass: Donny the donkey in trouble with the law because I wasn't supposed to ride him on the street. And then they arrested him because he pooped on the street. But I looked up the ancient rules in Chico and it said that the county was supposed to clean up after all the animals. And they let me go on that one. And then they arrested him for tying up at a parking meter without any money. And I took that to court and won that one because I was willing to put the money in, but the law said they had to have a watering trough for all the animals. So we had a trade-off. But then, the big moment was during Pioneer Week. How many of you remember Pioneer Week? Used to be a lot of fun. And Pioneer Week had the bad luck of being carried out the same time as the Fine Arts Festival. And so there was an opera being put on -- Cosi Fan Tutte. And my sweetheart, fiancé, up to that night, was singing the lead role of Figaroa -- what was it? Anyway, so we were out advertising with the donkey. See he had a little saddle on. And we were late for the opera. I promised my girlfriend that I would come. So we rushed to the building and went to the front door and we tied the donkey to the front door of the foyer. Well, the donkey evidently pulled back on the bungee cord, his head went in the door, and when she was in the middle of her aria, ta da. It made the newspapers. And basically what this says is at least the donkey cared enough to go. There should be more asses in Chico because nobody attended. Anyway Brazen Nagger was a great time but when I got married, my wife said I had to get serious and do something. So I started studying biology. And there was a professor here, Dr. Stern, who thought that I could maybe be a biologist and a marine biologist..

So I thought that sounds good because I love to surf, I like to scuba dive. This is going to work perfectly. And he got me a scholarship in the summer and Tonya an internship. She was an assistant to the professor for this algal course at Hopkin's Marine Station. And we attended the course and during the course you had to go out and make a herbarium collection pressing the seaweeds. And the standard method was to walk along the shore and pick these things up, take them home and dry them. I thought I have a better idea; I'll go scuba diving out there with my little razor. I'll cut them off and I'll bring them back and I did that. It made a beautiful herbarium collection. Had it laid out on the table. Professor came along, Dr. Izzy Abbot, and she said, "These are beautiful. Where did you get them?" I said I went out there in the harbor and I went diving. And she looked at me and she said that diving is for daredevils. That's not the way scientists do it. If you're going to be a scientist, you're going to do it the way scientists do it. And I came back home and I told my wife --I had a full scholarship to Duke University in algalogy. I said I'm not going to learn anything in school because that's not what I want to do. I think if you're going to understand the ocean, you have to live and work in it. And so that was a turning point in my life. I sort of gave up the pizza business, because I was going to become a pizza baron up to then. And we move to the Virgin Islands where I taught school and set up a biological research station that exists till this day. It's the Virgin Islands Ecological Research Station in St. John. And while I was there building the station, there was some interest in a group from Washington that came down and they were looking for a place to run a man in the sea program. Where scientists -- for the first time, scientists would live and work in the sea. Ta da

Oh that's the Brazen Onagger. That's what it looked like inside.

Okay. Now, Tektite was the first multiagency program to explore man's ability to live underwater. It was a sixty day program with four aquanauts. I was one of -- when they came down and told me about this program I was really excited. I got my boss at the research station to let me do whatever I could to make it work. And I told the head of the project, I said, you know, you only have four scientists. What if one of them gets sick? You need extras. So I became an aquanaut -- alternate aquanaut so then I was one of the seven.

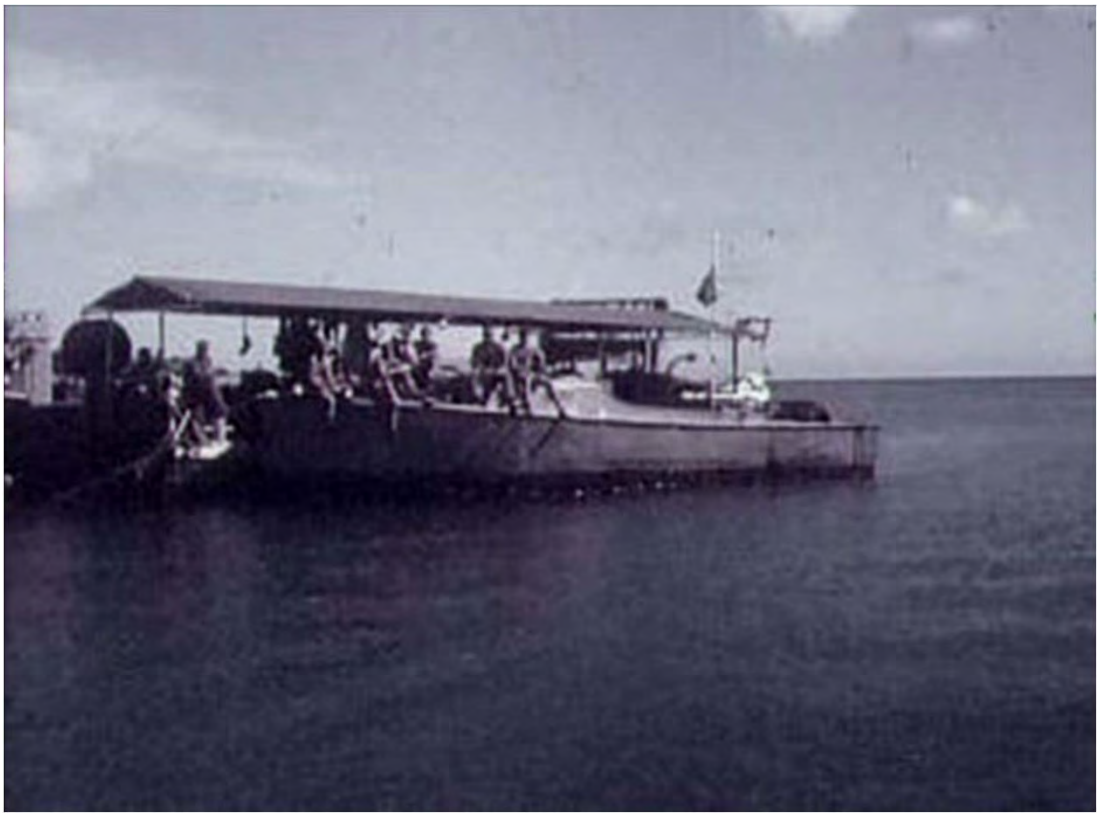
The habitat was built in Philadelphia by General Electric Company and then shipped down to the Virgin Islands.



This is what it looked like inside. There were four compartments and it took four aquanauts.

This is where I had my research station, Lameshur Bay. And it was brought in on a ship and then unloaded in this bay.

Now I'm going to show you about four or five pictures of all this equipment that the Navy brought down which, to me, if you were really going to work in the ocean you need to learn how to do it economically, with a minimum number of people so it was cost-effective. This is all Navy stuff brought down to run this program.



Twenty-five Navy divers to supervise this in a big support system.

A base camp with 11 hooch's.

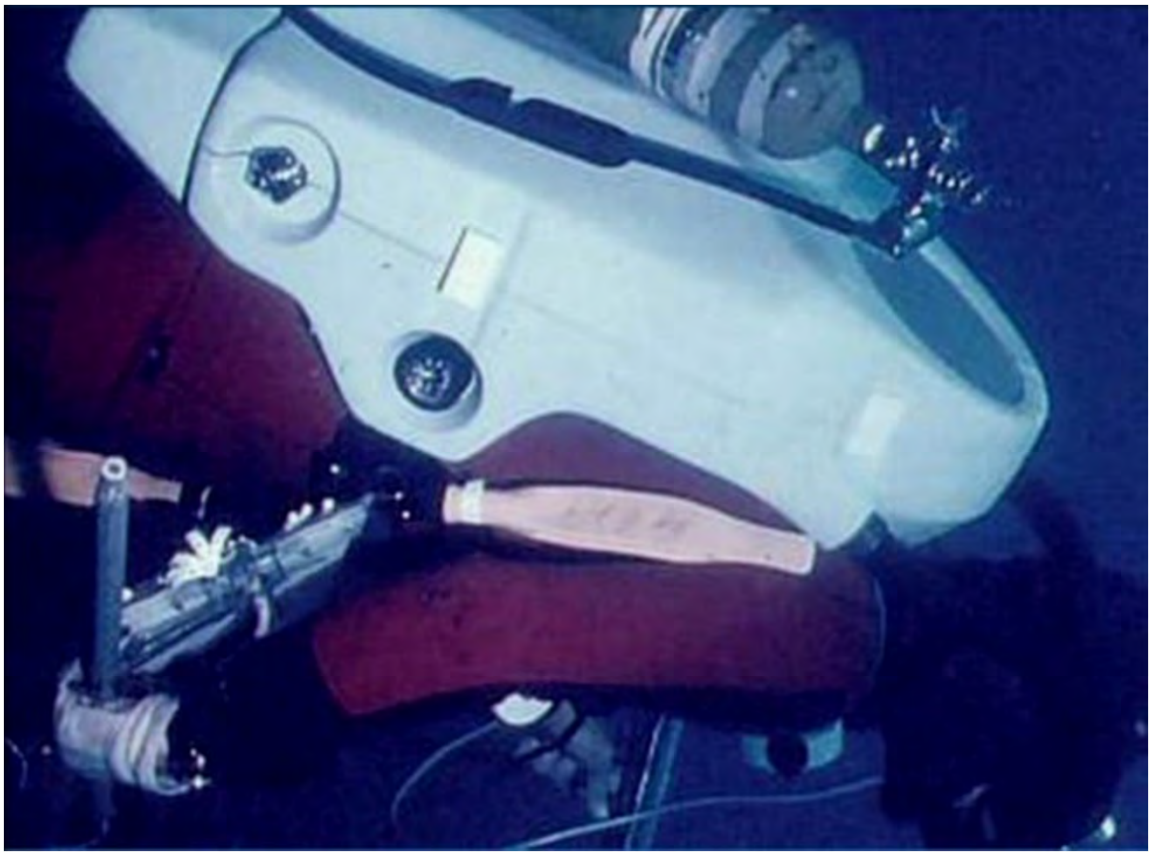
We built the hooch's. These were Vietnam-type hooch's but we set them up as a base camp. Next

These are the seven aquanauts and before we could be enrolled in this program, because this was a NASA sponsored program, we went through the astronaut blood chemistry program. We went to Philadelphia, to the hospital, where they kept us for about a week and it was a terrible time.

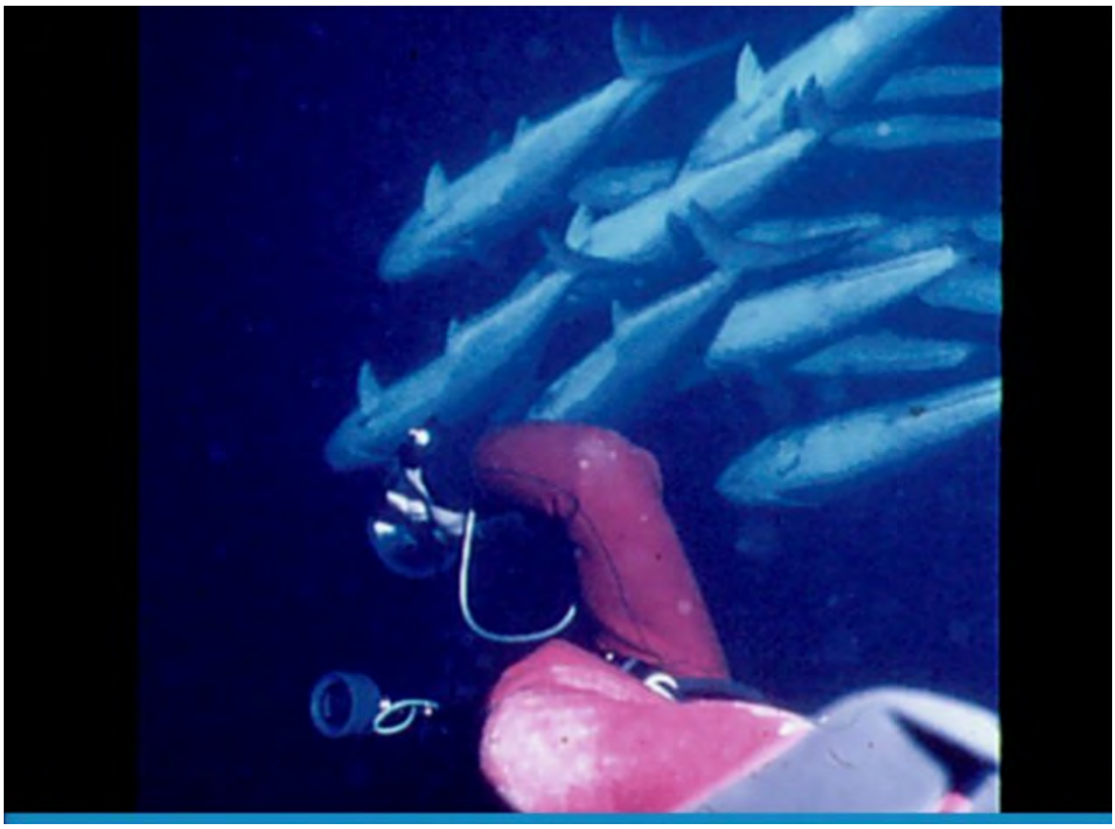
Here's one of the little tricks - you had to take a tube and run it through your nose down to your stomach and then they'd blow it up. And you had to do this by yourself in the habitat so you had no help.

And then they shot us up with radioactive uthium dye and one of the aquanauts, you can see, they hit the wrong spot and his whole arm was bandaged and swollen.

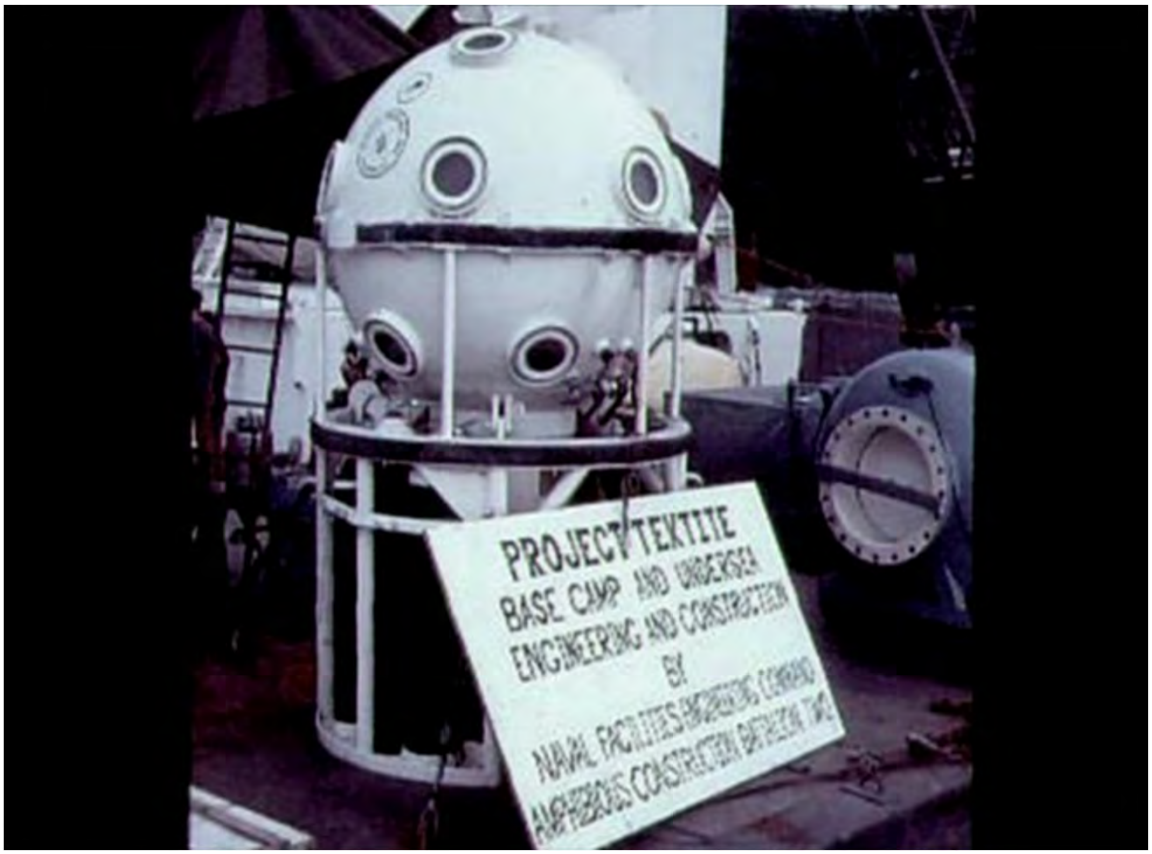
But it had its moments. [laughter]



So in the habitat we spent six to eight hours a day working on the ocean bottom, both day and night. And you look here -- experimental diving, today the big word are rebreathers. Everybody's all -- this is 1970 that's a rebreather. They were not dependable. That's why there's a tank on the back for when they quit because you were saturated if you went to the surface you died.



And we did a lot of night diving and ran into all kinds of interesting things. Here's coming out of the habitat and there's a whole school of amber jacks schooling around the habitat.

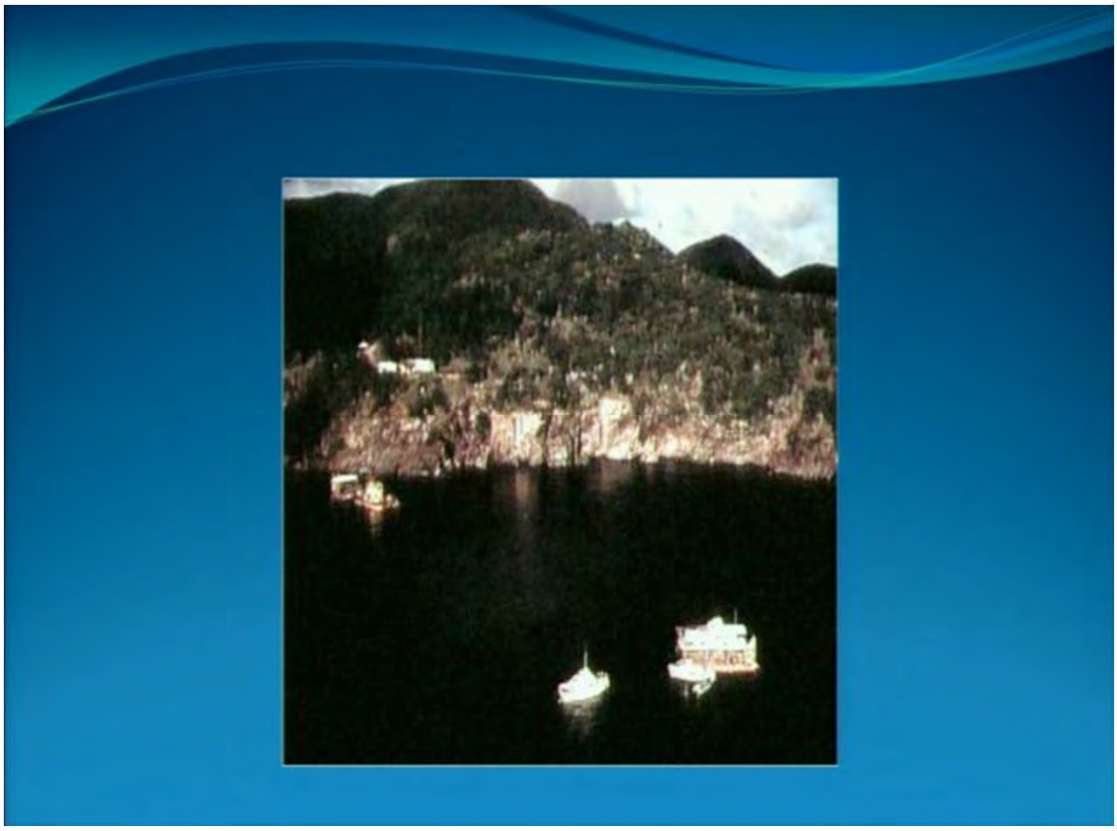


When the program was over, the aquanauts came up and they were locked in this little tiny chamber and then put into this decompression chamber for, I think, it was sixty hours. A long time to be in a little chamber.

So when Tektite I ended, they took the habitat back to Washington, D.C. and I fought to try to have it stay there in the Virgin Islands. But they said no, we're taking it back. If you can make a program happen we'll bring it back. I went to the governor and this is another moment in my life that changed my life. I went and talked to the governor. He was a doctor before he was governor. And I told him that I thought the government should help support this program. Put up some money and get this habitat back there so we can run programs. And I said, you know, we've been studying the lobsters and how to increase the lobster population. And he said, "Is that right?" He said, "You know, when I was a kid, there used to be lobsters everywhere. Do you really think you can learn something about lobsters?" And I thought, you know, he understands a little bit about the ocean. And so he made me special assistant to the governor for undersea programs. I had this fancy little card with the governor's -- in gold. And I went to Washington and I got Washington to bring the habitat back and I was one of the program mangers and ran this program for six months. The biggest man in the sea program ever carried out.

This time, they brought the habitat down, but we got rid of all of the Navy equipment.

That's just prepping to go out.



In the cove, where the habitat was to be sunk, instead of having all that Navy equipment, I built a road into the edge of the cliff and then I, on a rock, I built a support platform and that's it.

So here's where the road came and all of the support gear a up here and they monitored everything.

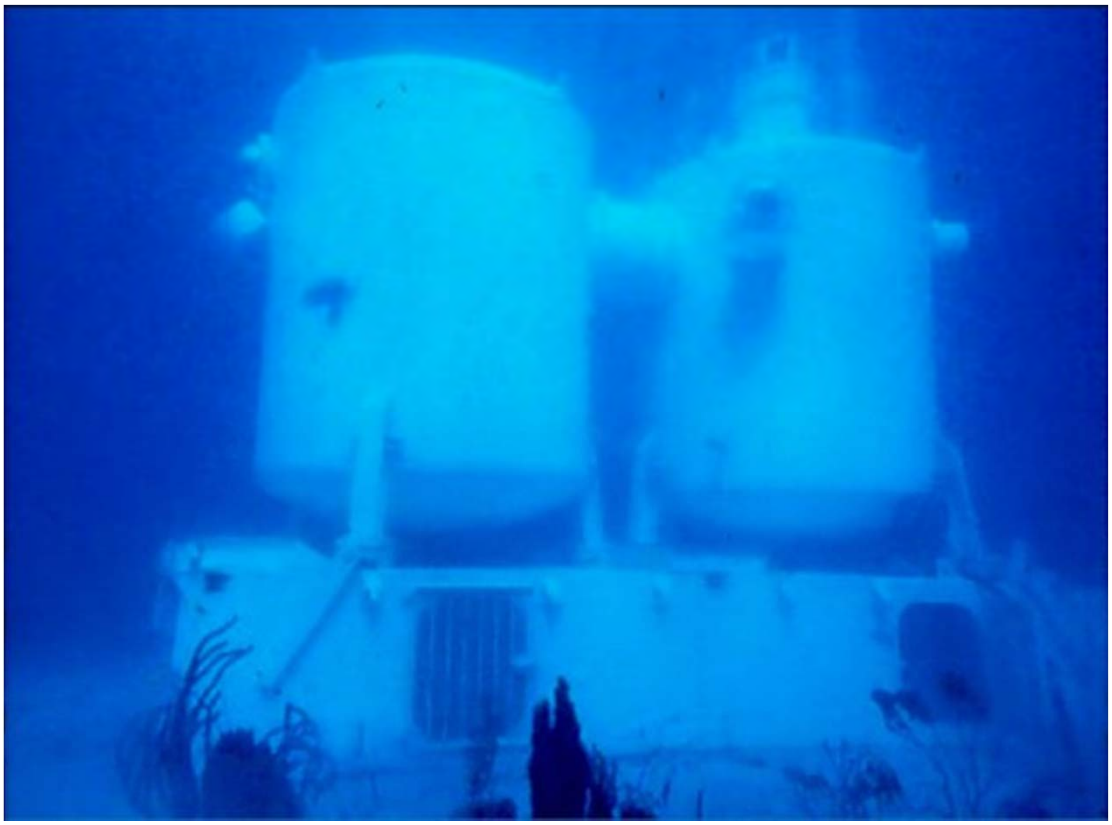
And then I built a bridge out over to this rock and built all those things on the rock. Well, there's kind of an interesting story along with that. This is in a national park and I had to build this bridge. And in order to get down to the bridge, I had to cut some rock out of the -- so I drilled some holes and blasted it out with dynamite. Well, the park service ranger came out there and said you can't do that at a national park, you know, you have to have permits, you have to this, you have to that. I said, but you don't understand. We only have 30 days to get this project online. So I went home and -- actually I picked up a pay phone in town and I called the Secretary of Interiors Office and I said to the Secretary's adjutant, "Beth, I've been stopped. This needs to be fixed." The next day the park service ranger came out there and said, "You didn't have to do that; we could've worked something out." So anyway, I built the bridge and off we went and there's Tektite.

We had a big -- here was another thing in the Tektite. Here's 21 kids from a college trying to run the decompression facility. Too many people; too much money.

Preparing our rebreathers to go out and make our first dive.

And then this was the support platform that we built.

The Secretary of Interior. This is the governor of the Virgin Islands on the left.

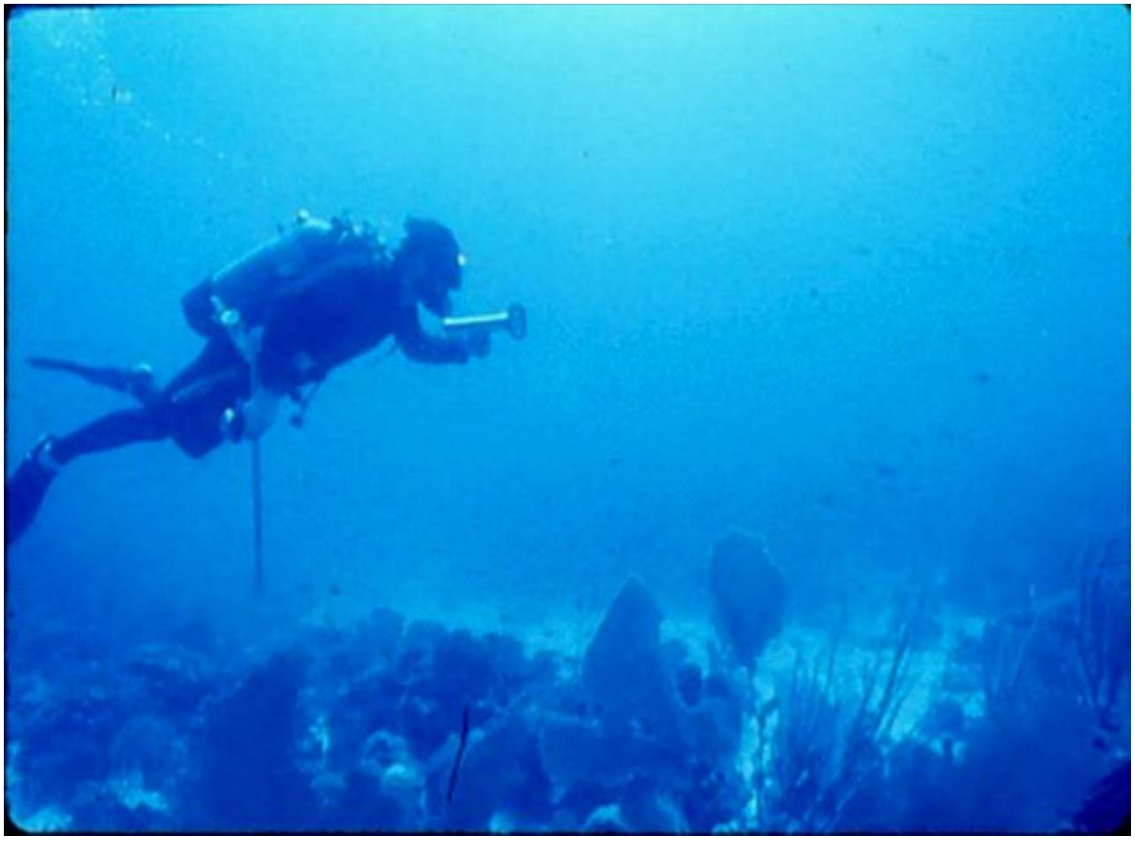


And here's the habitat once it was on the bottom and ready to be occupied.

We carried out all kinds of science programs, monitoring respiration of the corals.

My project was a lobster project where we had little sonic tags we glued on the lobsters and then we followed the lobsters.

And we put the tags on them.

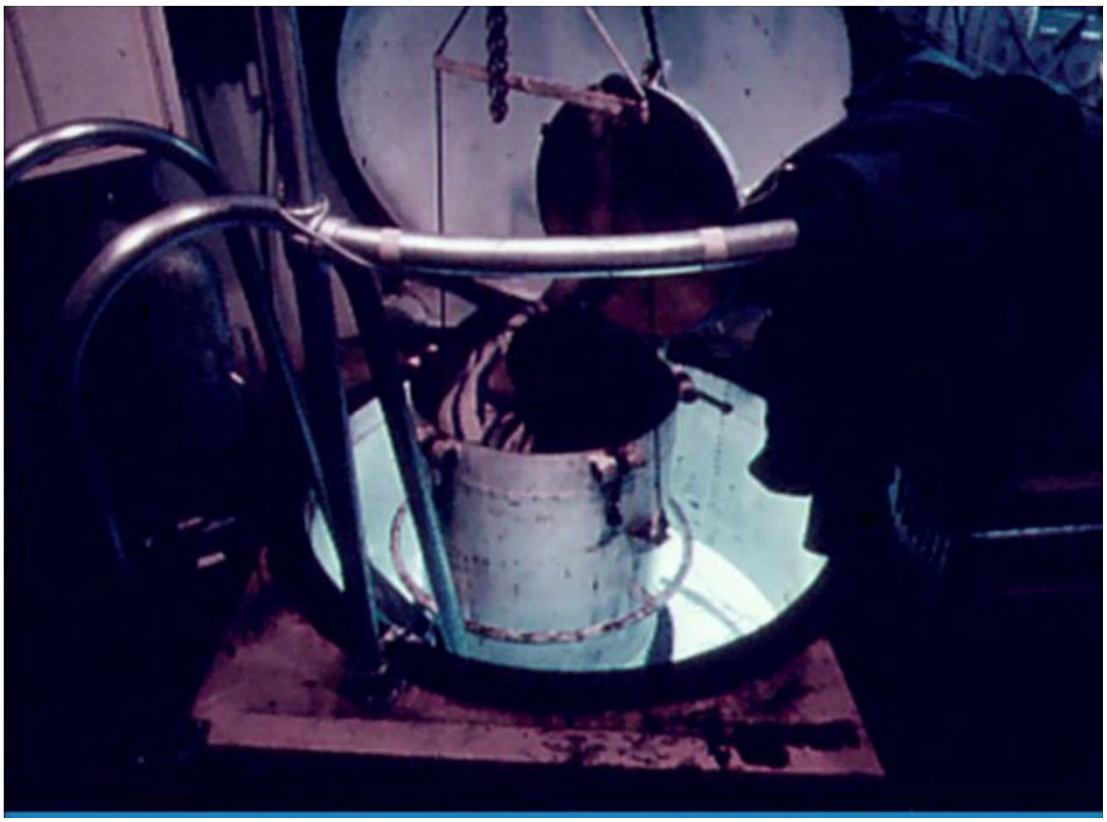


And then we'd follow them with this little sonic gun.

Sometimes you followed the sound and it would end up in a shark's belly. So here I was following a lobster that turned out to be a shark.

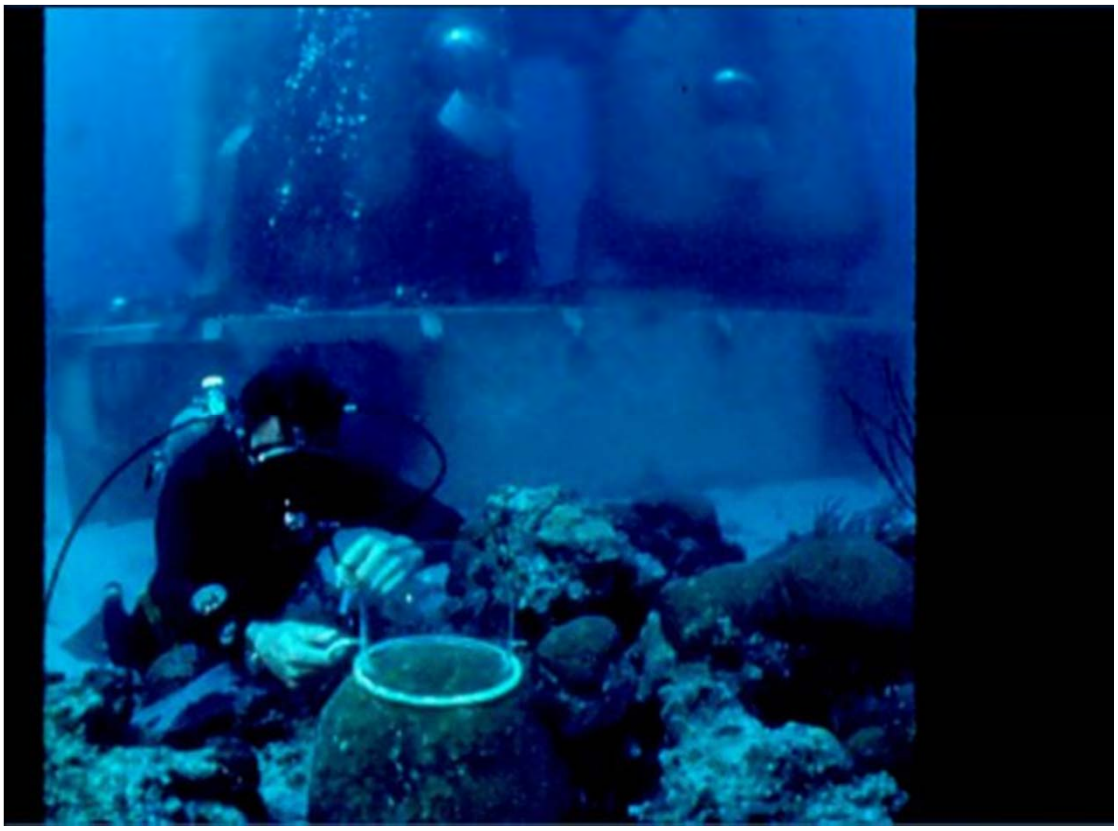
Anyway, the daily maintenance of this habitat was a nightmare.

You can see here they're changing out the scrubber. That's what takes the carbon dioxide out of the air. And you can see the whole floor is covered with scrubbing materials and the guy spent half the day cleaning it up.



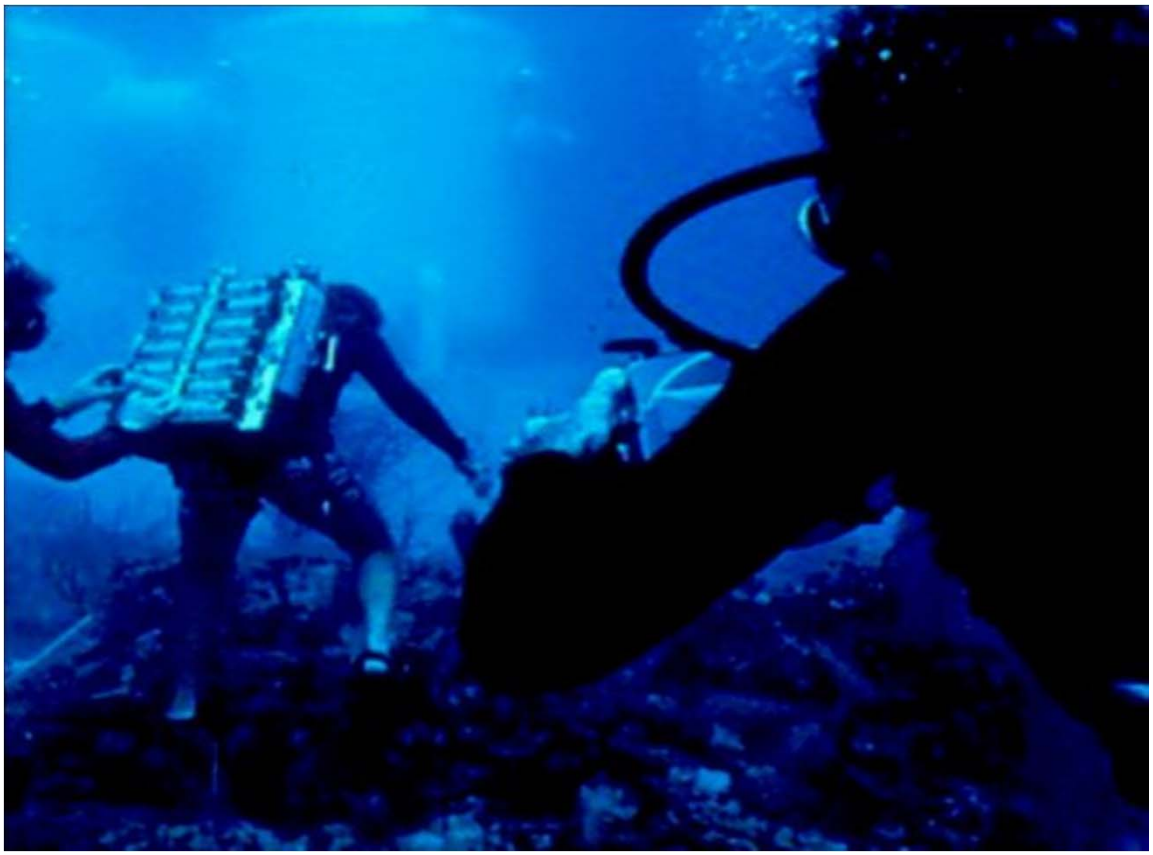
Transferring equipment into the habitat was a huge job because you had to have a block and tackle to pull the pod up and down.

We put in hours and hours and hours every day. These were geologists studying -- their project was to watch how the fish moved coral rubble around to build little nests and how much they can move and -- or how far they moved them and so forth.



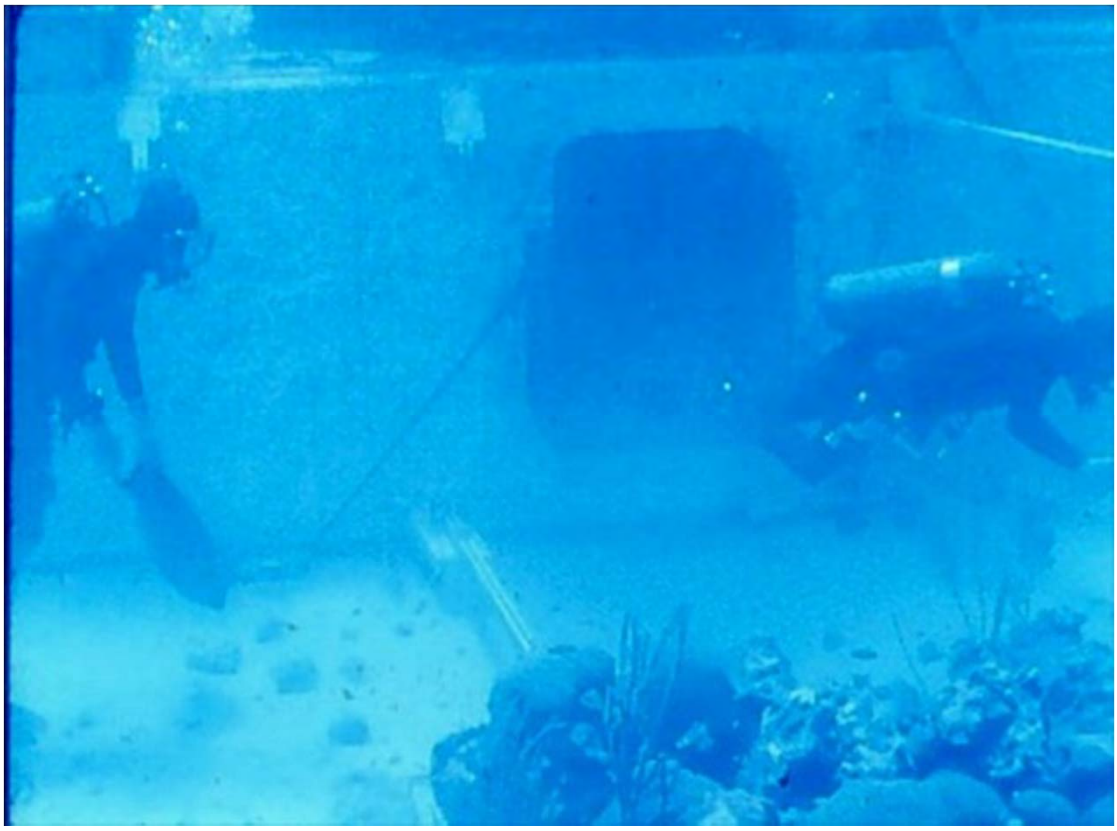
It was an interesting study. Respiration of the reef.

This was what we called a PUTS. It was an underwater talking station so you could duck in there and have a little chat and see how everybody was doing.

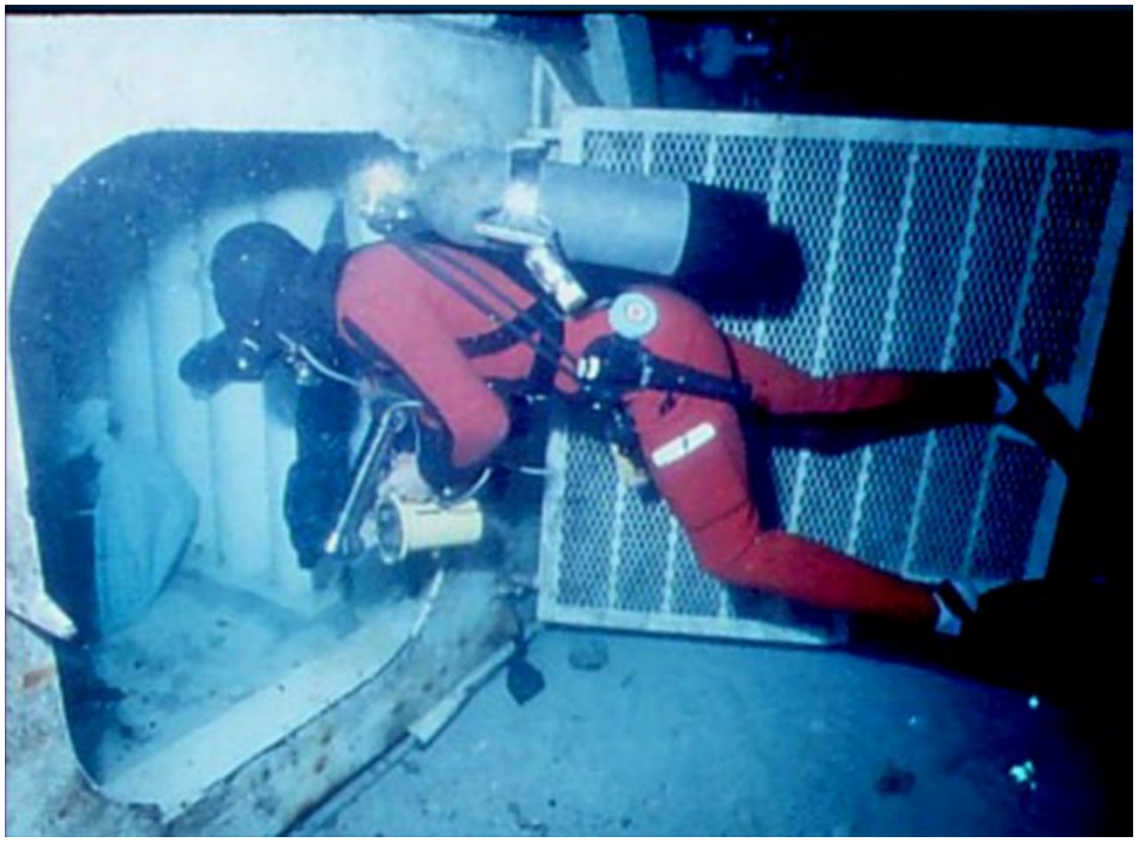


Here was an interesting first. To do water quality, no one had ever done water quality at depth.

You take the sample at depth and then go back to the habitat and test it so that it didn't change pressure.

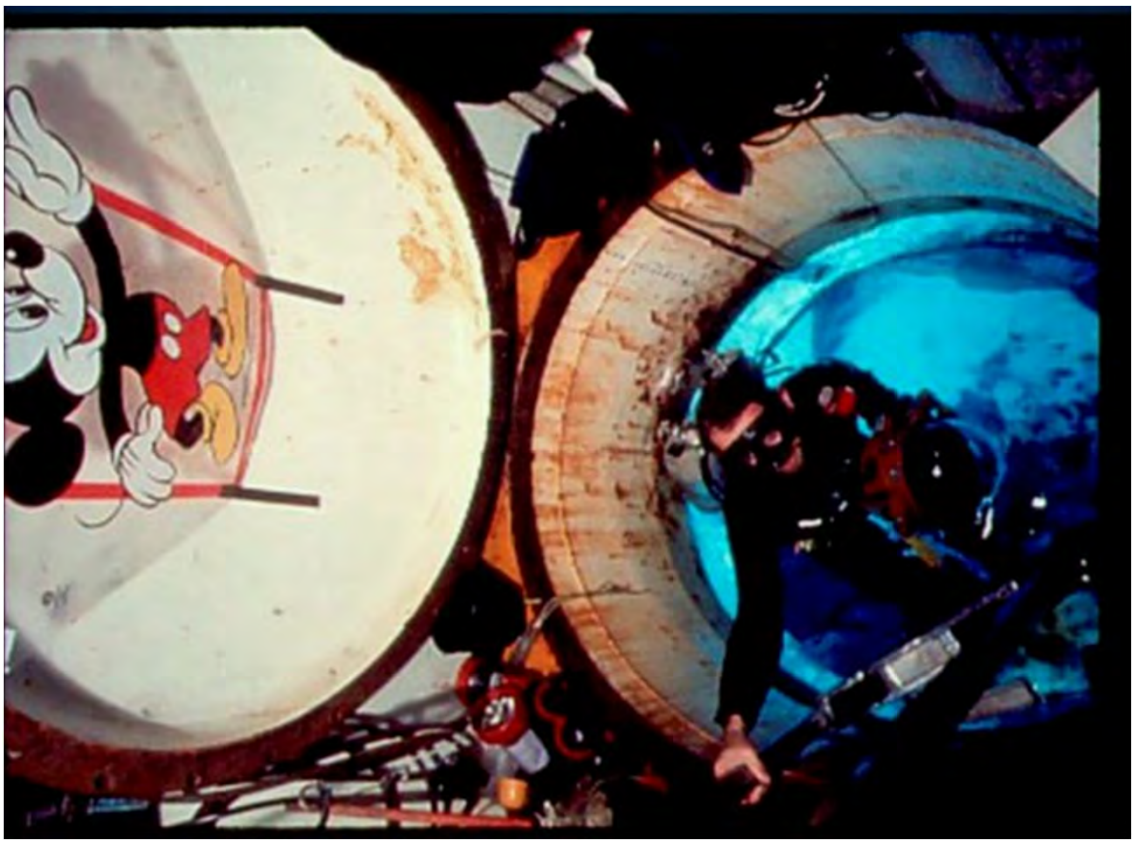


And then on the last day, coming out.

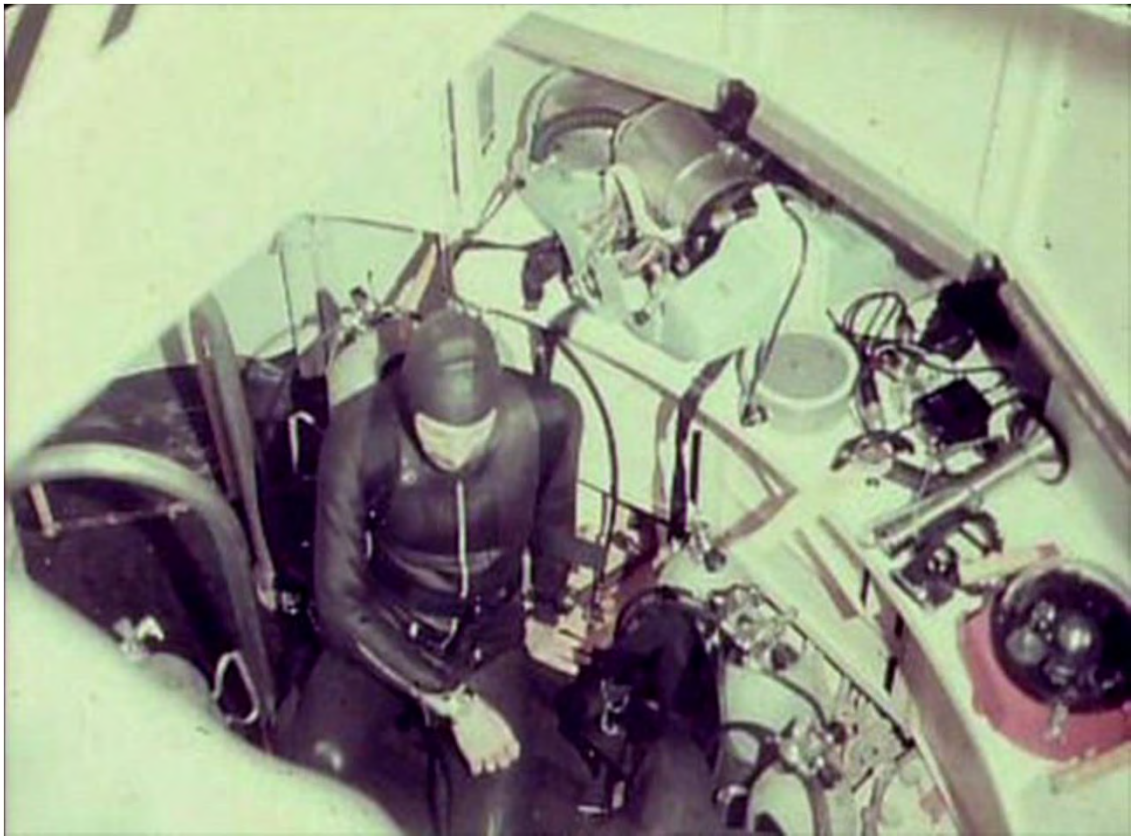


Or maybe not the last day coming out.

Coming in.



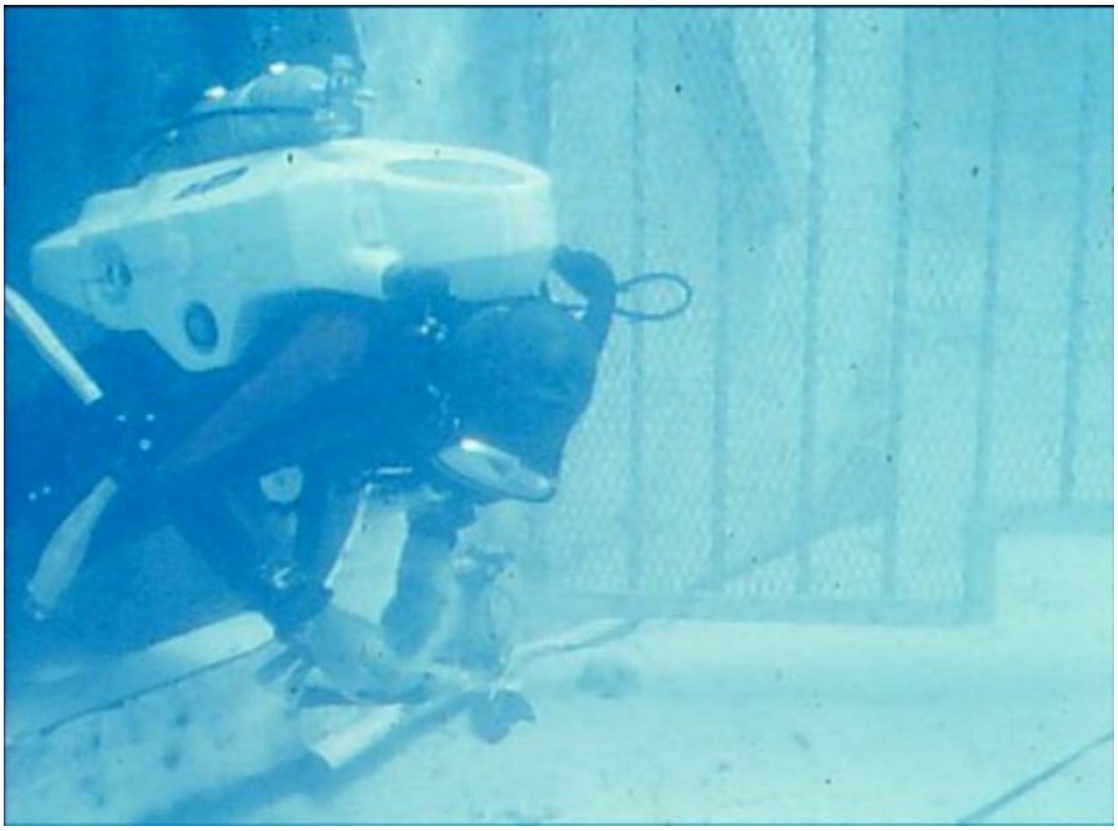
You had to go through all of this tunnel then you had to come up and climb up a ladder to get in. This is very dangerous because if you had any kind of a problem, you weren't in any condition to try to crawl through this tunnel, climb up a ladder to get in. So I was taking all this in as things that needed to be done to improve undersea living.



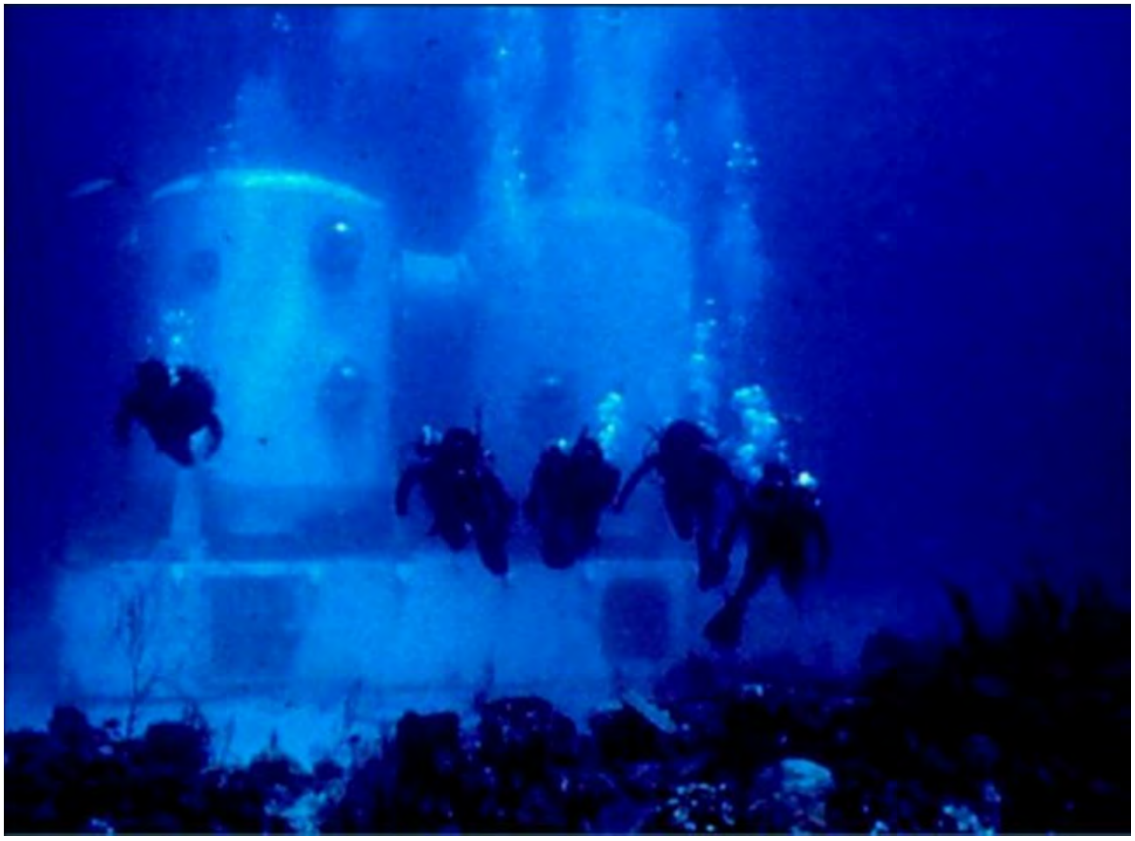
And there was never enough room to work on anything.

However, there was always time for a little bit of entertainment.

Everybody's sitting around and, of course, you had to keep your appearance up.



And then the final day coming out, decompression.



Heading home after, I was on this for about three weeks.

And there's the team that survived.

For Tektite II, we selected a girls team. And we just sat down at a table and said what can we do to get extra media coverage for this program. Let's make an all girls team. And everybody said I know a girl and I know a girl and that's how they all got on the team.

There was also another habitat that was built. We fondly called it the Tippytat and you can see why. It never really worked and this habitat was to go to a hundred feet. So when this program was over, I thought there's got to be a better, easier way to do it. I'm going to build one that's better and cheaper and smarter than what the government can do. And I got the government of Puerto Rico -- actually I got a man by the name of John Perry to build a habitat for me that we designed and then I got the government of Puerto Rico to support it. So I'm going to show now a little five minute movie on the PRIUNL; the Puerto Rico International Undersea Laboratory. It's the most sophisticated undersea laboratory program ever carried out to date, which is a very sick thing to think about. Forty years later we haven't made any progress. There should be sound with that.

[movie]

So the third barge was towed to the site and just sunk.

[movie]

It's the most amazing sensation to come out of an abyss like that and come into the bright, warm sun; green and blue. Really a special feeling.

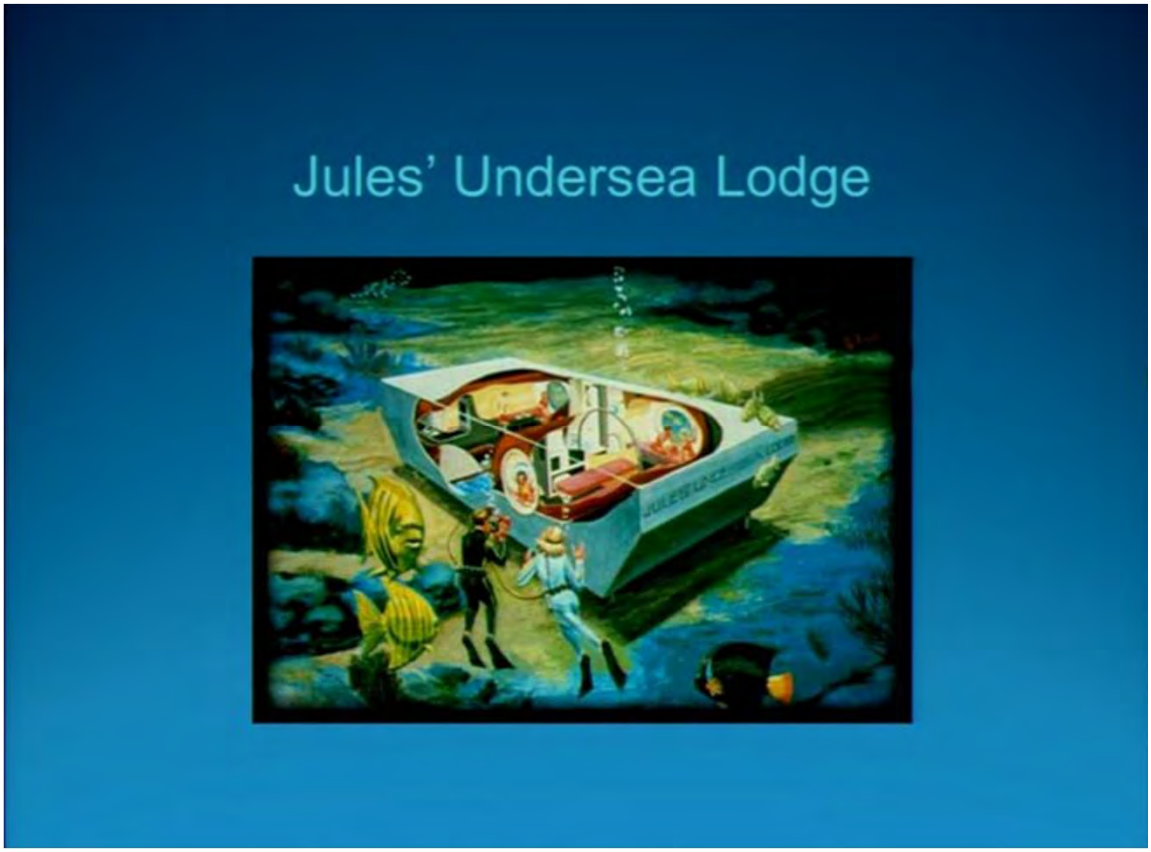
So when this program was done, I was all excited about doing a lot more exploration of the continental shelf. But there was no support. The federal government was having a hard time. Gas prices were sky high. Interest rates were 21%. It was during the Carter Administration and it just wasn't going to work. So I moved to Florida with the family. My kids had never -- we'd been 12 years in the Caribbean - the kids had never lived in the states and it was time to go home. And we came back to Florida. And I started with the Marine Resource Development Foundation; the same foundation. I said I remember what that governor told me. He remembered when he was young, there used to be lobsters. We need to get to the kids. We need to educate people so that by the time they get to be senators and bankers and congressman, they already know and you don't have to train them from scratch because they either get assassinated as presidents or fired. They never lasted very long.

So I took a laboratory, the little lab that was shown in that drawing and set that in. And I put six high school kids living on the bottom of the sea; the first students to ever live on the bottom of the sea. And it was so successful that I wanted to continue it. So we bought a facility in Key Largo and we carried out these little programs. But you could only put three kids in there at a time. So we expanded this facility to become what is now Marine Lab and it's a world-class - probably one of the bigger marine education facilities in the world. We have students from about 38 or 40 states. About five to six thousand students a year that come there. And so this is a little video that they use for Marine Lab and I thought a picture's worth a thousand words. So, if Tony can get it to work.

[movie]

So this program has been running now for 27 years. And it runs very well. My staff has been there -- most of the key staff have been there for 25 to 27 years. I'm worrying about their retirement now. So, while all this is running very smoothly, I got kind of restless and wanted to go back to getting a little deeper in the ocean and technology has changed so much with the computer and computer programs and sight scan sonar so my partner and I, one of my board members and I got some investors that were interested in marine archeology to put together a program that we could carry out in the Med. This was seven years ago, so 2005 or something. And we'd been working in the Med. But not only did we do the deep ocean exploration, but again, I tried to relate that back to education. How can we take what we're doing and make people aware that it's an important part of our heritage, a part of our life and we need to pay better attention; take better care of it. And I'll show you how we did

that.

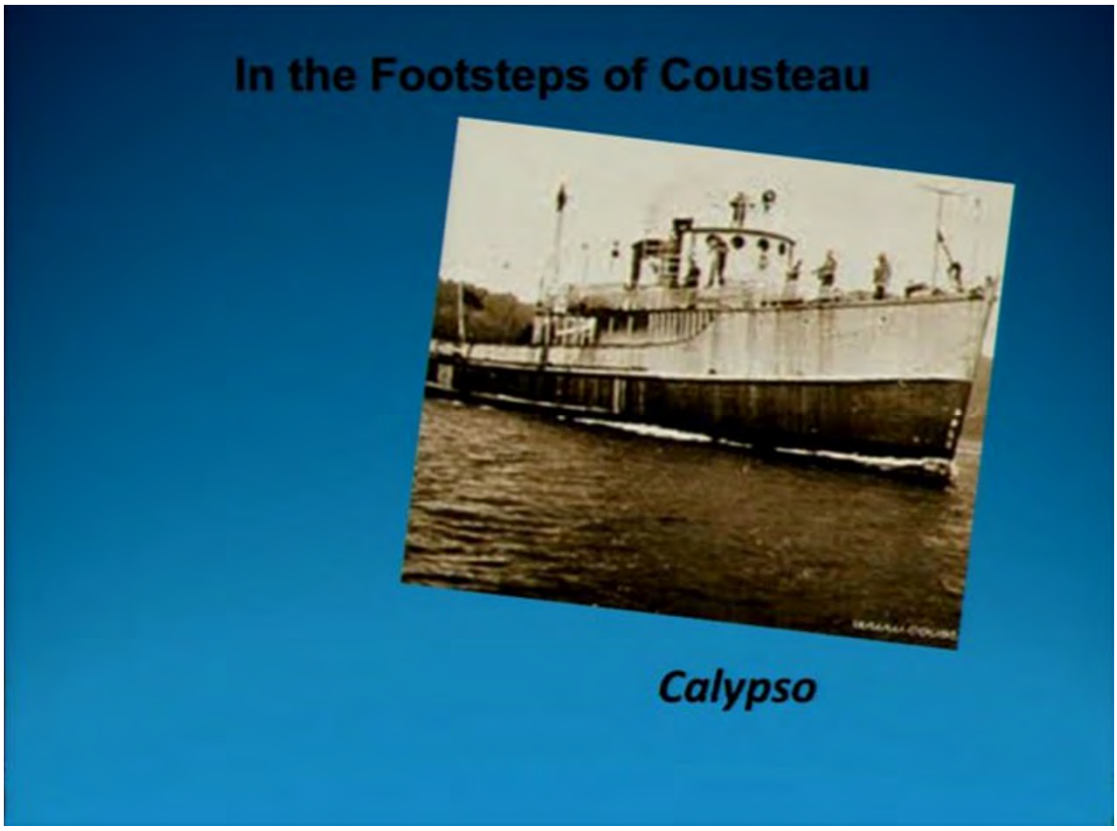


Oh, in the meantime, at Marine Lab, I took the old La Chalupa and turned it into the first underwater hotel called Jules Undersea Lodge and so you saw pictures of what this looked like before inside. And here's what it looks like now.

Gone are the days of the rugged living.

And that's been up and running now about 26 years. It gets incredible media coverage.

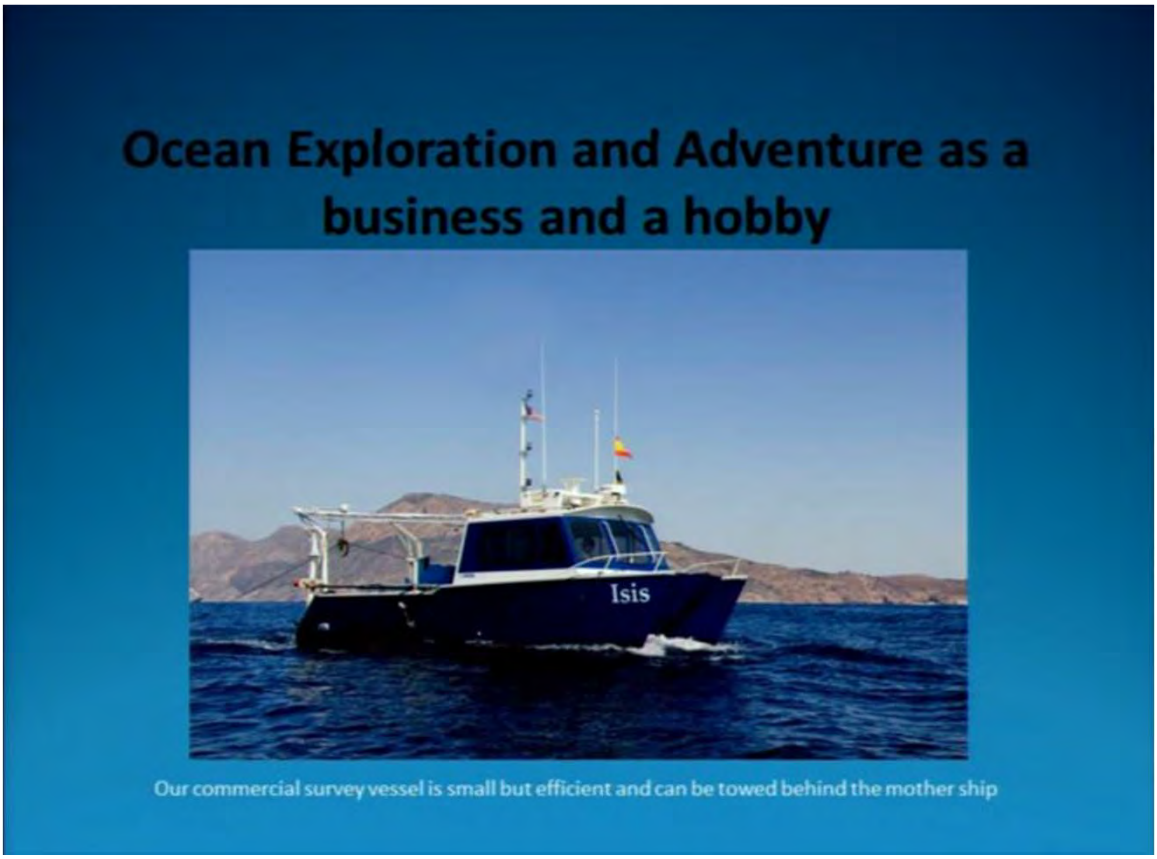
This is the ocean exploration and education foundation that I set up about five years ago to work in the Med and now we're starting to work in the U.S.



Now, if you can read this, in the footsteps of Cousteau, here was Cousteau's research vessel.

Well, I've been spent 40 years at sea and I felt if we're going to go do this for fun we got to be a little more upscale. So this is our research vessel.

So you can see it hasn't been all hard work.

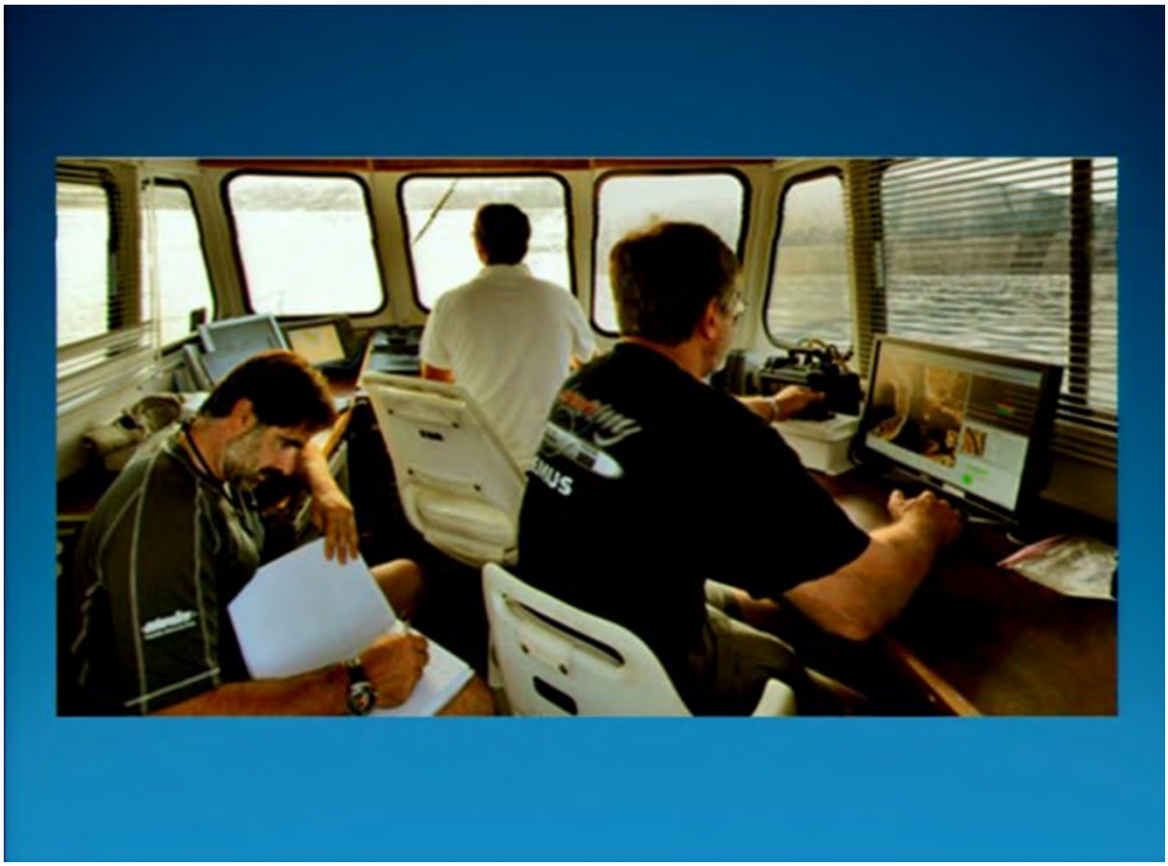


This is the real little working donkey. This is a 27-food catamaran that can work in a thousand feet of water.

And it has ROV a very nice ROV; Remote Control Vehicle. Takes both high resolution stills and video.

This is a sub bottom profiler with a sight scan sonar so it can go down and penetrate in mud 50 or 60 feet. That's how we located all the things below the surface in Syracuse that we were diving on.

This is one of our high resolution sight scan sonars and I'll show you how they all work in a minute.



And all this takes place in a cabin of a 27-foot boat. There's not even room for a coffee pot in that little cabin.

So this is what we do. It's a non-profit organization and we use new technology for ocean exploration to help countries really manage their cultural resources. And we have an education and awareness program.

Those are the heroes.

We've established relationships with Italy, Cicely, Baltic, Croatia, Spain, France.

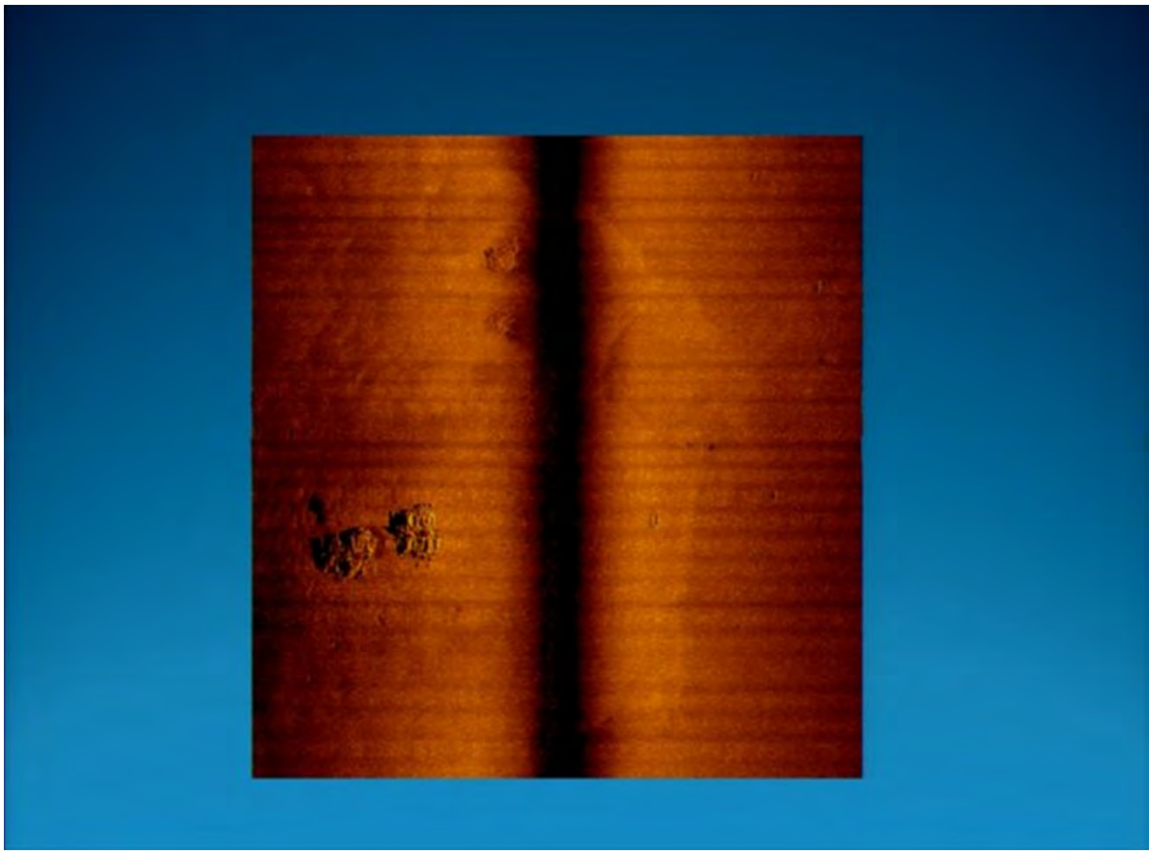
And to give you an idea of the networking and how this works. Now in Cicely, look at this guy's title; Superintendant of the Seas. Now you have to imagine in Cicely that's a very powerful guy. Well, there we all are at a presentation. Here's the Superintendent of Culture of Lazio which is out of Rome. We carried explorer's club flag - we carried three flags.

The president of Malta came to our house for dinner and so the work that we do has been well-recognized and well-received and much appreciated.

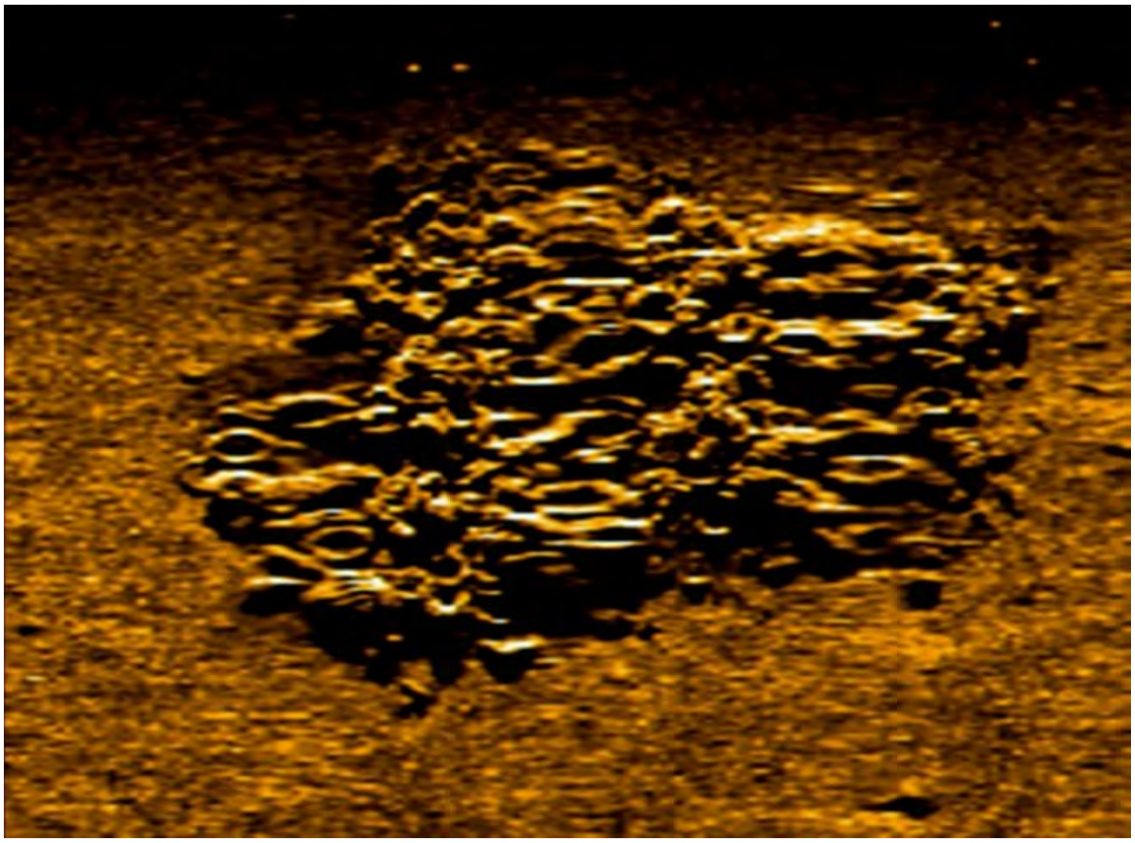
What do we do? We go to a government and we sign a memorandum of understanding with the partner country. Then we work with their archeologist to determine the best routes, the places that are most likely to come up with finds and we bring our equipment there and we work. And the governments give us free dockage and power and help us and a lot of good partying and it's a lot of fun.

Now here, is a kind of a special island. It's called Venta Tania. It's about 60 miles off the coast of Naples and you can see is just a sandstone rock that Augusta Cesar took and he built a palace for his daughter who was an embarrassment to him; a bit of a harlot, and she was sleeping with the enemy. So he wanted to get her off Italy so he built this place out here and built the entire island - these huge cisterns.

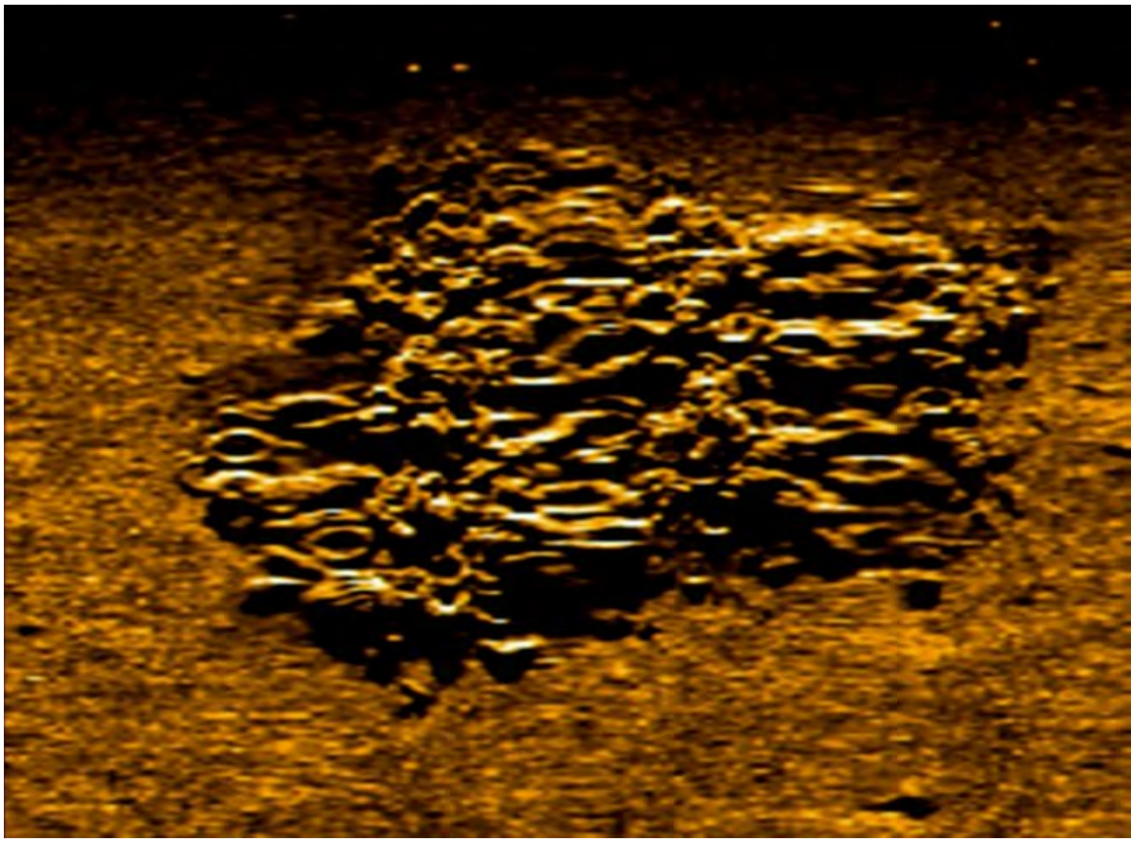
And so we came to survey around the island. We lay out a grid and each of these is an actual survey line. These are probably six miles long and this is probably two weeks of work. It doesn't look like much there.



But once you record it, you go back to the ship and then you blow up anything that was an irregular detail. Like here, you have a big flat surface, nothing around, and all of a sudden there's a little pile. Could be rocks. It could be junk. So you never know.



So you go back now and you do a high resolution scan of this and when we first saw it, we thought, you know, that could very well be a ship that lost a load of tires or something. But that's not what it was. So here's a little video of what we found. And I'll show you-- see this? Look at this harbor. The Romans carved this harbor out of the limestone and that's a ballard over there where they tied the ships up, carved out of the limestone. And imagine the Roman divers having to cut that entrance out. Can you imagine holding your breath go down and chisel a little piece of stone. Our diving support crew were the Italian carabinieri, the federal police. So everywhere we went in town we had 14 federal policemen with us. And this is an Italian high tech diver. And this dive is in almost 400 feet of water. That's a deep dive for diver jumping out of rubber boat. And what we do is we send our ROV down to be like a safety diver to the divers. So we're watching what the divers are doing and we have an idea whether they're safe or not. An then on the surface we have safety divers, the carabinieri are the safety divers. They can go after them if anything happens. And this dive, he'll have no more than 20 minutes -- probably 15 minutes on the bottom and four hours of decompression coming back up to the surface. But this is what you come down to. These are called mortita and they're mortars. And every Roman household had this because they poured the grain in there and they ground the grain to make the flour for the bread. Each one's about 20 inches in diameter. You can see how big the lobster is. And these were like K-Mart ships.



There would be a whole shipload of one item. This whole ship had mortars. The next ship was full of amphora. These amphora we can identify by their size and shape, we know where they came from, and what they had because every hundred years or so they change the shape, so it's easy. An expert on amphora can tell you exactly. But there are thousands and thousands of these on a ship. Maybe two thousand on a ship - three thousand. And you can see they're still stacked as they were 2,000 years ago.

[music]

And here we're going to take one up so they can take it back and analyze it see if there's anything in it that they can identify in the way of food and wine, olive oil, olives and garum. Garum was a fish sauce. It was very, very prized and very expensive.

[music]

The one that we took up is now in a museum at Venta Tania.

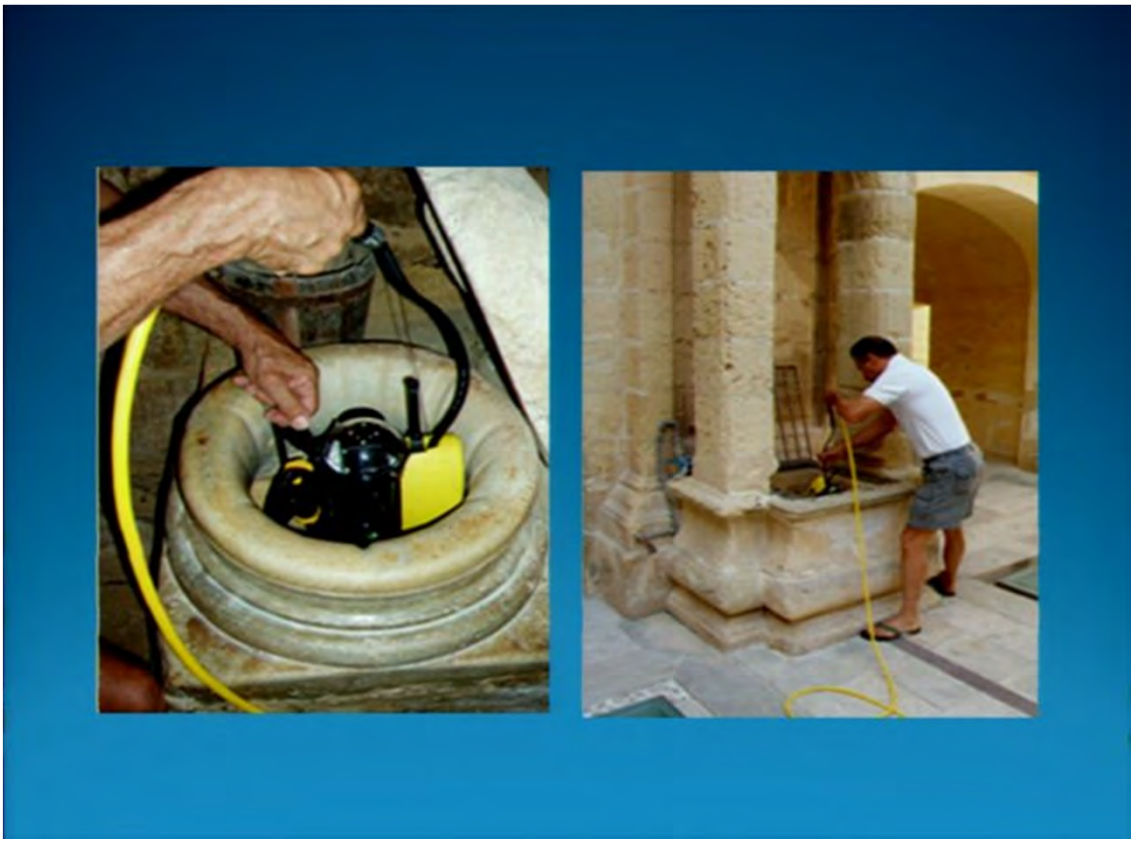
[music]

At first we designed all kinds of little nets and things to handle these little fragile amphora. But after doing a couple of them we found out they're not fragile at all; you just go up and put a line on them and you yank them up and they're fine.

And that's one of them coming to the surface. You can see the size of it.

And here's still of some of the amphora. We found 27 ships like this so far.

Question: And tell us again, they dated back how long ago?
Ian Koblick: Well, the oldest ones that we found are in Malta and it was a Phoenician ship of about 700 B.C. These that you're looking at here are about between 100 B.C. and 200 A.D. There were three wrecks and they varied. In Malta, which is our home base, we've done a lot of work there.



But one of the projects that I thought was kind of interesting is I took one of my staff from Florida with a little video ROV remote control vehicle, and we went into the cisterns in the homes and traced these cisterns out with a sonar and we mapped the cisterns. And they found out that-- they never knew this -- that in a house like this in a house down the street in a house over there, they're all tied to an ancient Phoenician well that was probably 2,500 years old. And everybody just tapped into these wells and they never knew that because they never sent anything out to search these.

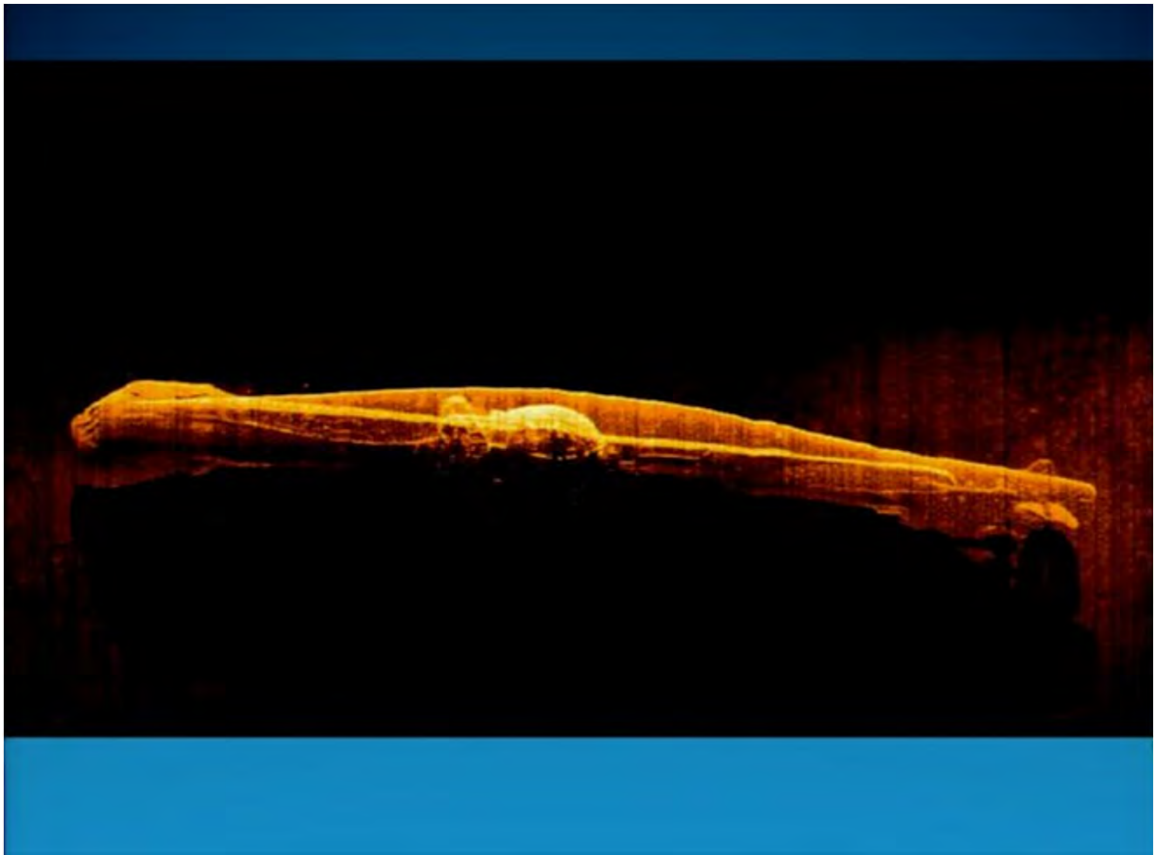
This is a machine gun on a torpedo boat. This was a World War II Italian torpedo boat that was attacking Malta. Tony just missed the good slide. But this shows you that this torpedo boat is very interesting because the Italians weren't very good Kamikaze pilots. They didn't like the idea of not coming home. And this particular torpedo boat had it so they could run up on a target and turn the torpedoes and shoot them as they went by. They didn't even have to slow down and this is a machine gun on deck and next.

And here's all the live ammunition still there. Nobody's ever seen this since 1942.

Here's an airplane upside down, just laying on the bottom.

Question: That's World War II, Ian?

Ian Koblick: That's World War II.



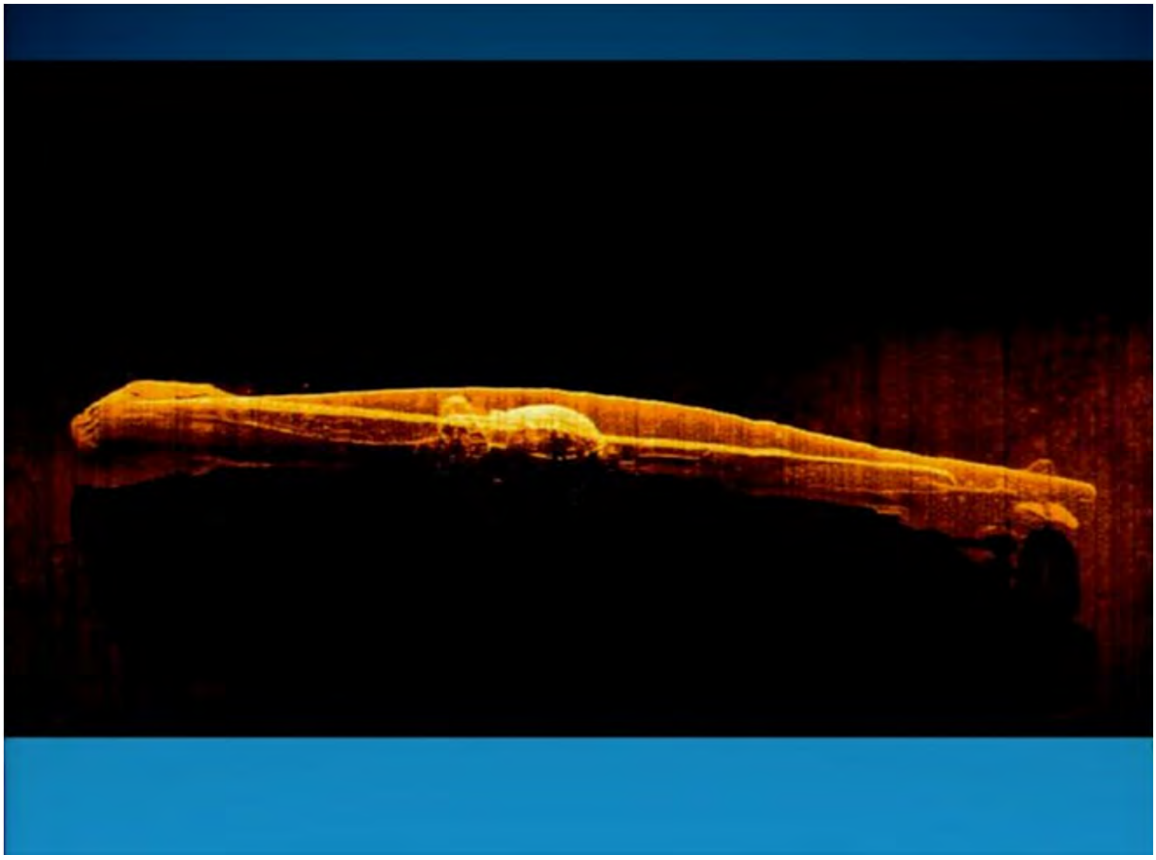
Now, I'm going to give you a hint. You're flying right over this object. What does it look like?

Audience: Torpedo.

Ian Koblick: No, it's bigger than a torpedo.

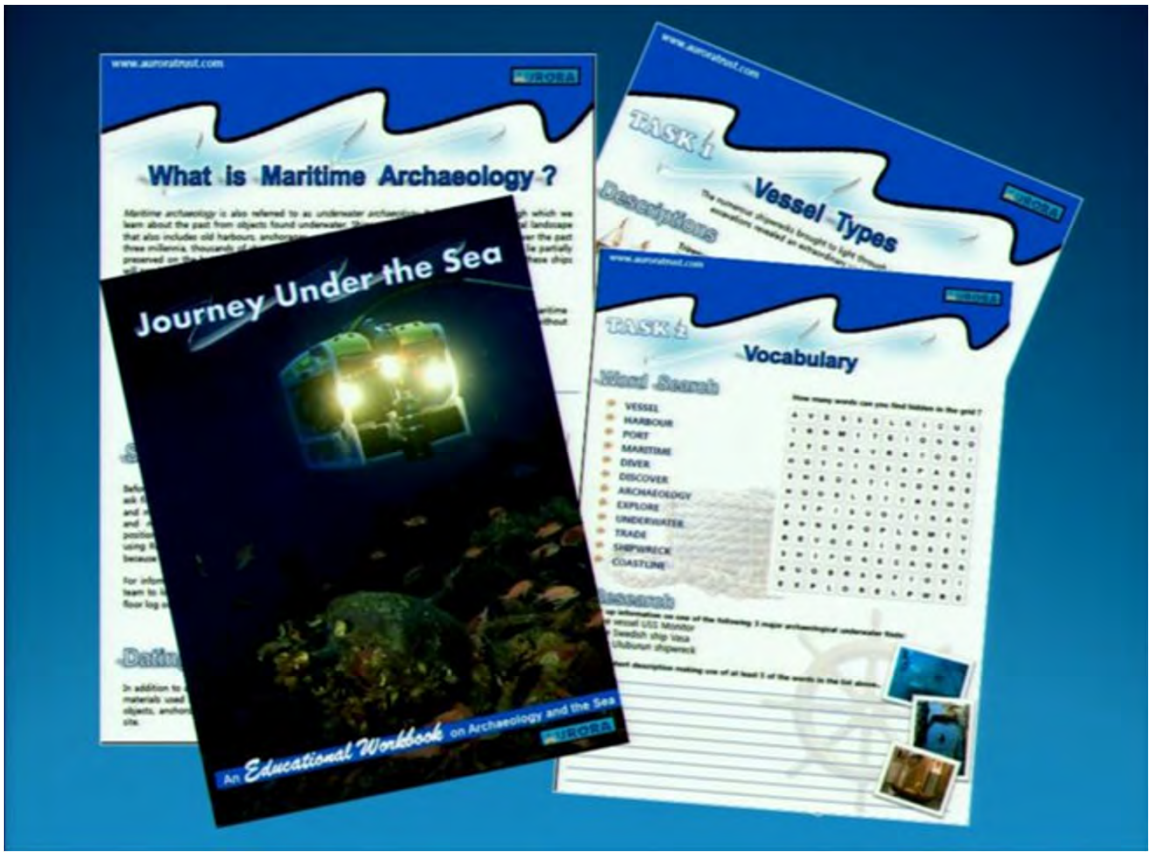
Audience: Submarine.

Ian Koblick: It's a whole submarine. I'm going to show you a video of this if it works, and I'm going to tell you about it. This submarine was called the Olympus. It was sunk in 1942. Submarines were the primary means by which Malta was able to stay alive because Malta's only 60 miles -- 70 miles from Cicely and the Germans and the Italians bombed it terribly and blockaded the harbor and they sunk all the ships that came and went and they kept bombing the harbor. So submarines were one of the ways which they could resupply. And this submarine had been a resupply sub and it was leaving. Its normal crew strength was 48 sailors. But this had 98 on it because the other sailors were survivors of two other submarine sinkings. And they were headed home. They were on their way to Gibraltar; they would have gone home. And as this was on the surface, sneaking its way out of the harbor trying to avoid the Germans and the Italians, it ran into a German mine and the mine blew a hole in the bottom. Many of the crew got out.



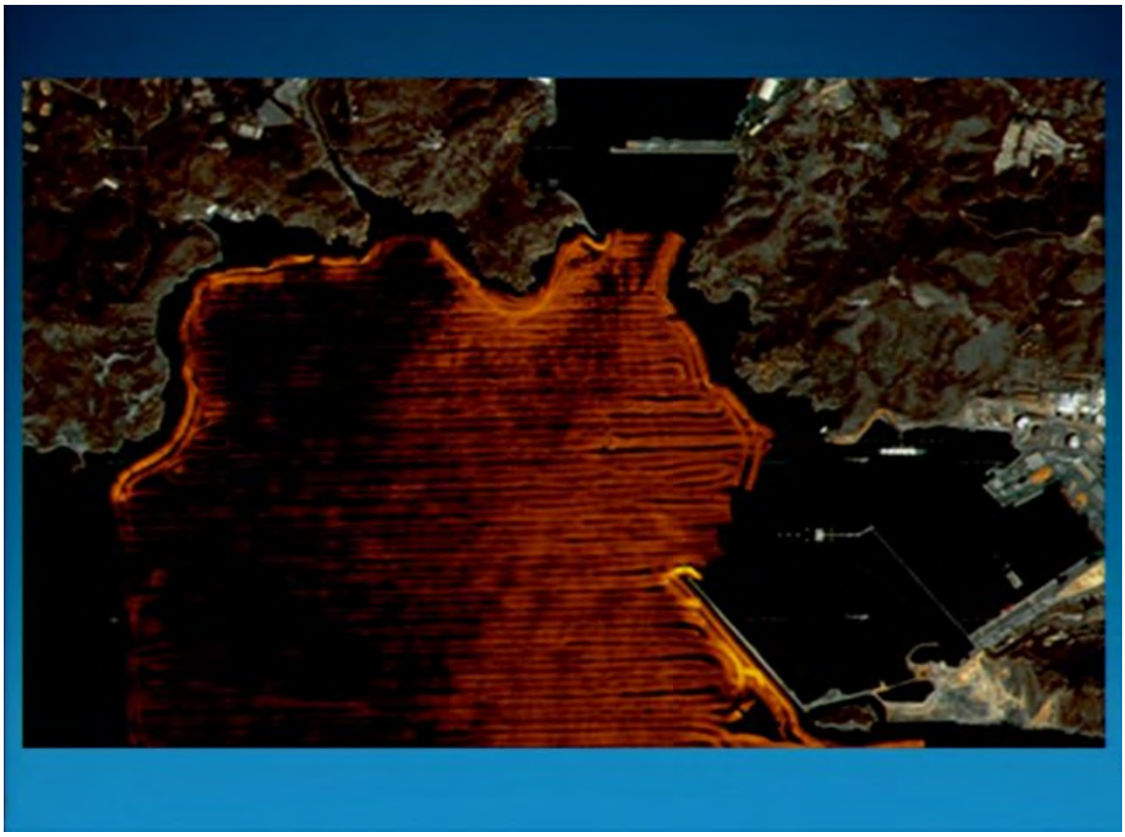
What you would have seen is where the mine hit. And you can see how it blew a hole in the bottom and ripped off some plating. And you can see that the guns were being manned because when you first find a submarine or something, you need to say, did they scrap this? Was it just towed out to sea and scrapped or was this in battle? And whenever they towed one out to sea and scrapped it, they took all the guns and ammunition off and they stripped it down to nothing. Well this has the cannons, the radio antennas, the machine guns and you can see that they were trolling and people were on deck. The hatches are open. So most likely, many of the crew got off. But, because there was a blackout, and you couldn't see the island, and the currents carried them out to sea, only eight survived. They never knew where the submarine went down and we just found that. We just made an announcement of this about three weeks ago, I guess. Next.

So, I now have two, actually three non-profit groups. I have the Marine Resources which is marine environmental education; I have the Aurora Trust, which mainly focuses on archeological, and I have AIMS; Aurora Institute of Marine Studies. And that's in Europe at EU, so it's an EU foundation. So we go and talk to school groups, I think about on Malta I think about 40 lectures last year.

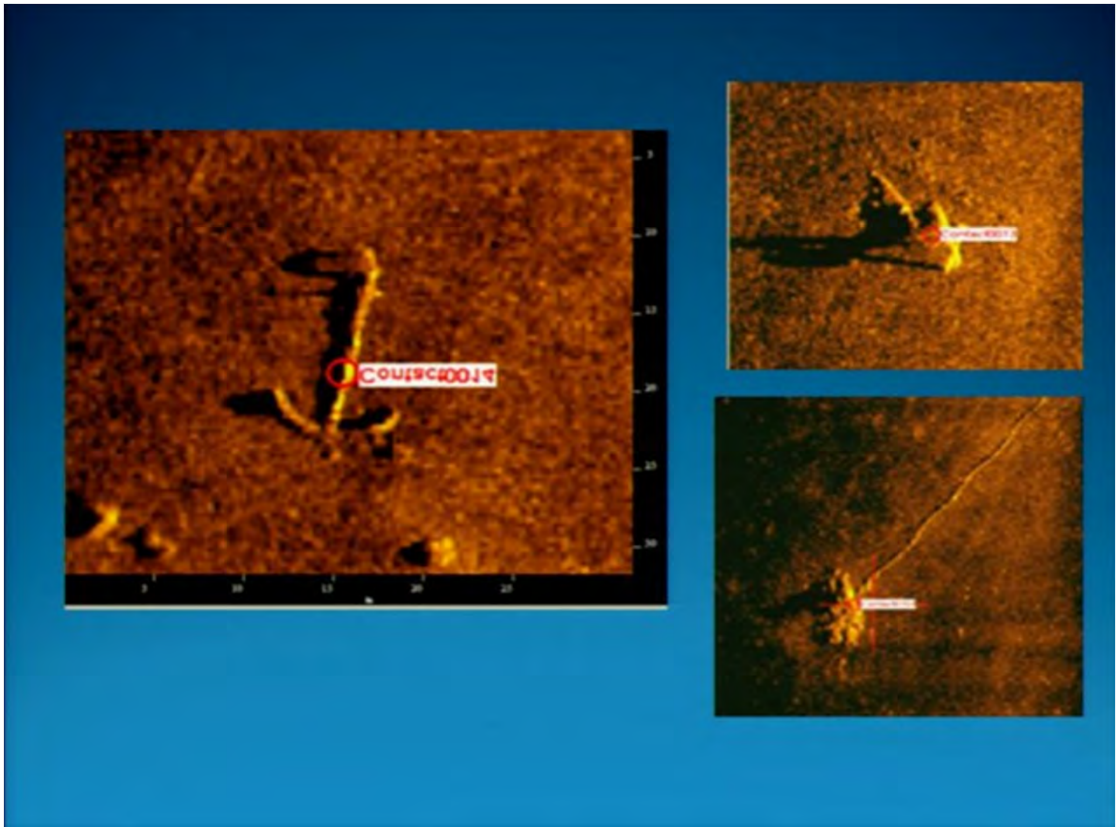


And we produce an educational workbook which is in Arabic, English Maltese, Spanish- there's another one I can't remember. Anyway, this is for seventh and eighth graders and it's a little workbook and the whole idea is instead of focusing on the environmental aspect of it, this is on the cultural aspect of what's in the ocean, why we ought to be careful about what we do in the ocean; we shouldn't go dump our trash out on a place that is going to damage the environment. So these are the workbooks that we put out. We have another one that just came out and its topic are pirates because these are all things that kids get excited about and it does the same sort of thing. But it gets them into where the pirates roamed and what they did. They're great workbooks, so if anybody wants to use them, you can go online; it's a PDF you can download it and use it in your school - in any language.

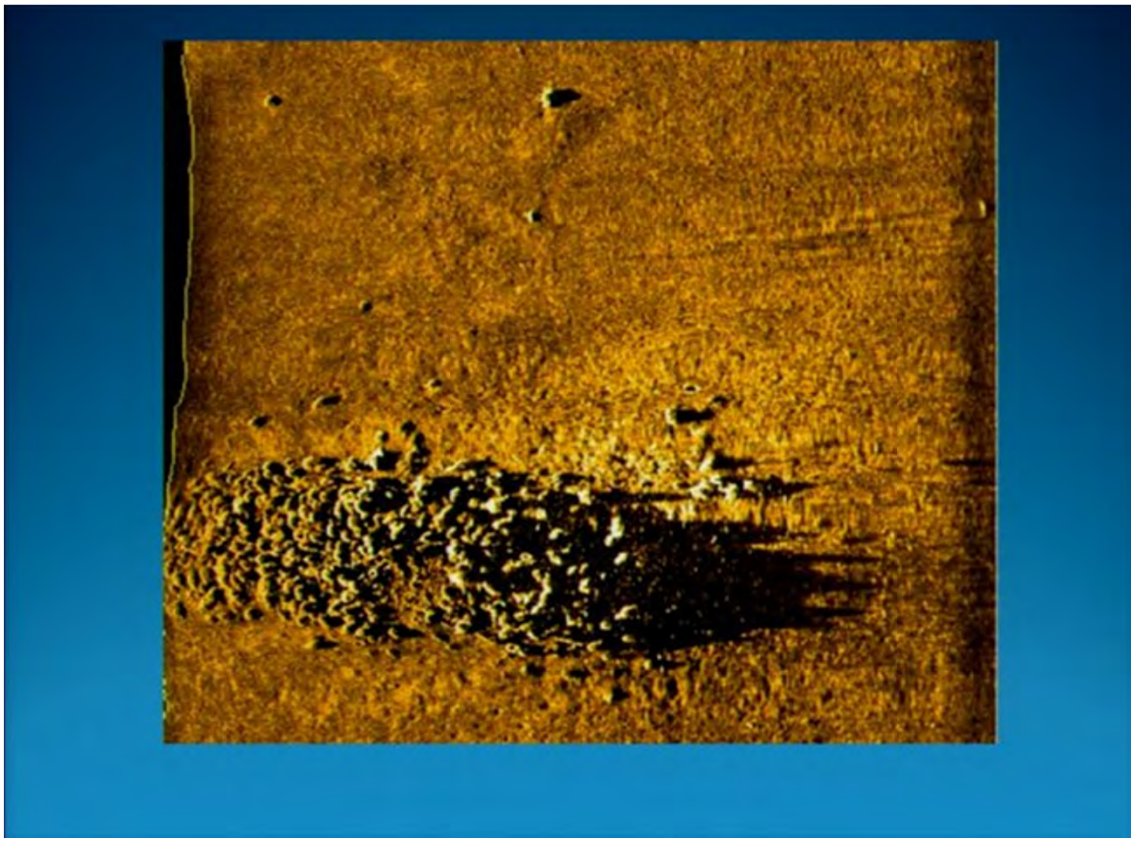
Cartagena. Cartagena was founded by the Carthiniangins back before Rome was a power.



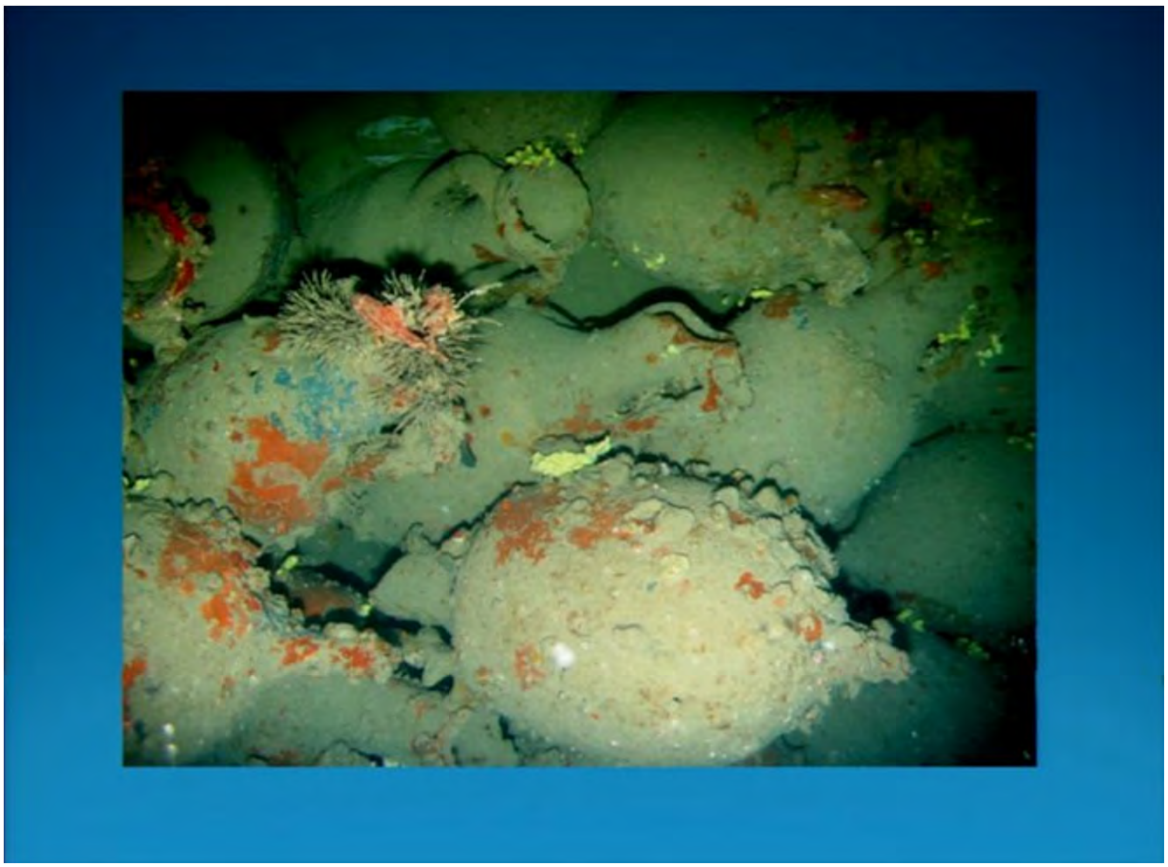
And then the Romans overtook Cartagena and in this bay, in this harbor, and the harbor is back inside here and all through this area, they had been mooring ships for 2,500 years. The Spanish Navy uses that as their military base for harboring their ships and the Spanish Submarine Rescue facility is there. So we surveyed this harbor.



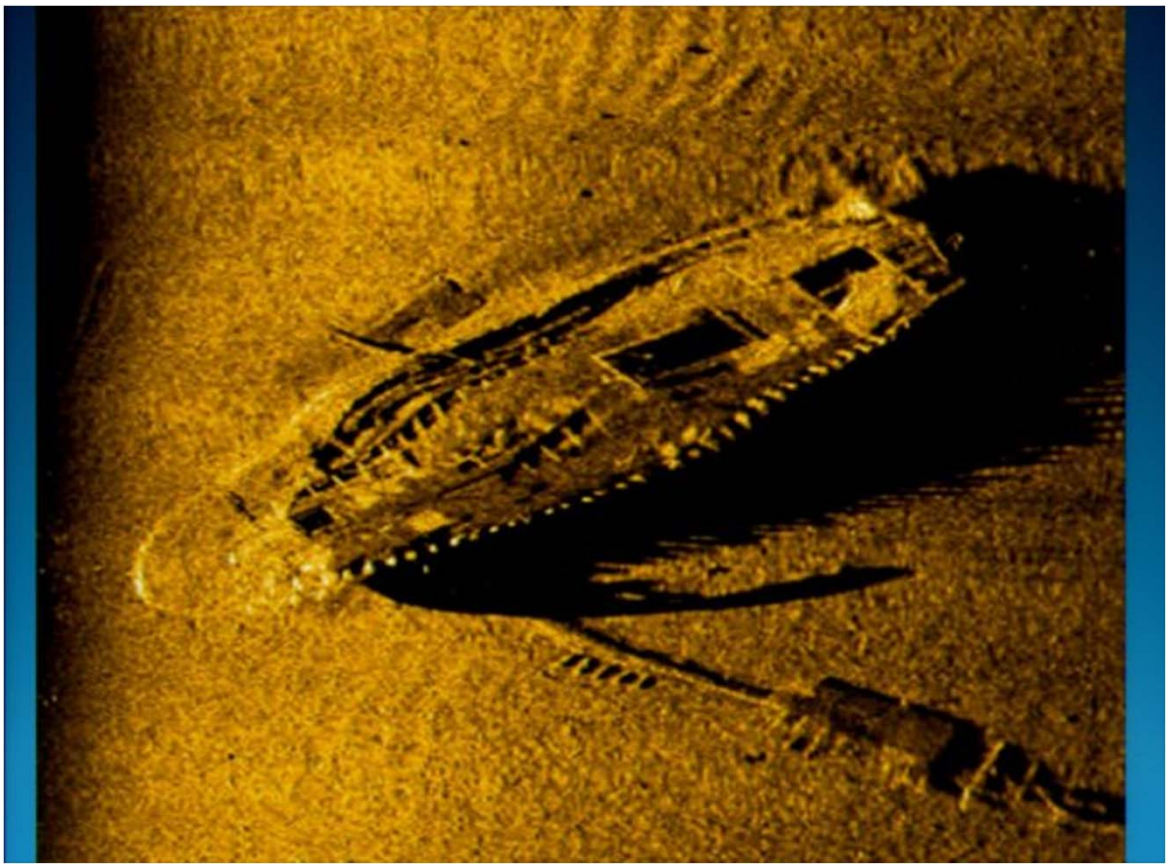
And just to give you an idea of the high resolution that you can get with a sight scan, that's probably an eight or ten foot anchor over there. This is a piece of a chain. So you can see everything that's on the bottom. And we map it all. We know everything that's there.



And in the middle of the harbor there was this pile.



Five thousand amphora. It was the largest Roman ship ever discovered. It made a lot of headlines because it was like 150 long. It's a huge ship; Roman cargo ship. And why it hasn't been destroyed by Navy ships dragging their anchors across it, we have no idea, because it's right smack in the middle.



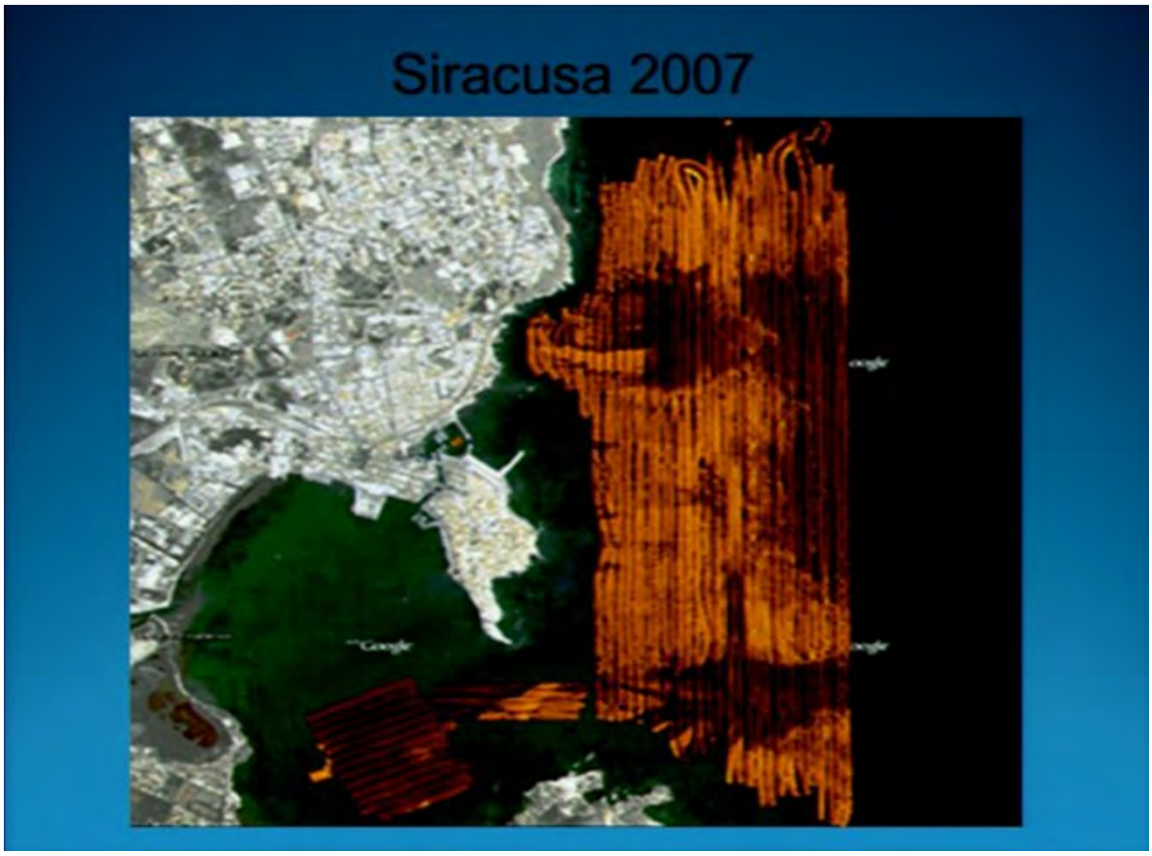
And this just gives you an idea of the resolution. If it's down there, we see it and we map it.

Question: That's not an old ship?

Ian Koblick: No that's not an old ship.

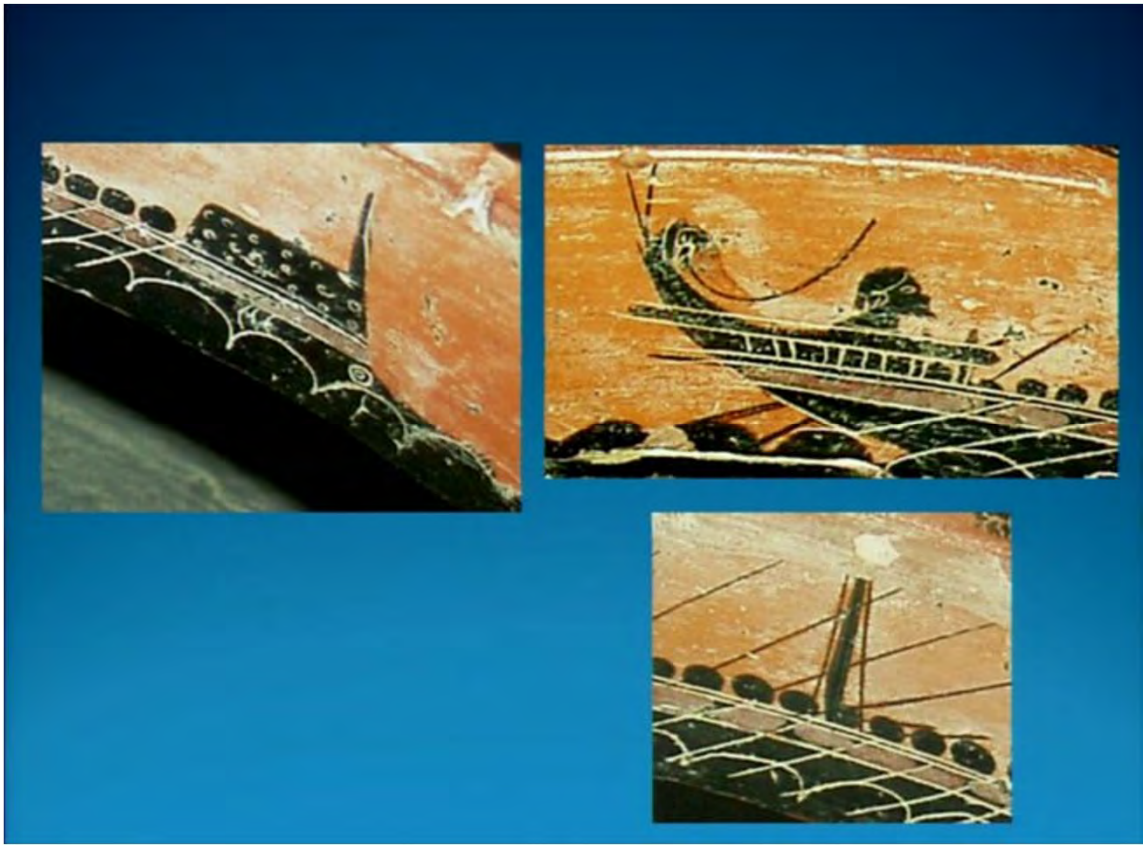
Now this is Syracuse where I was diving and this….

And that's our research vessels. In this harbor is where this big battle took place. There were 40,000 Athenians that had attached Sicily and they had brought a hundred triremes into this harbor after two years.

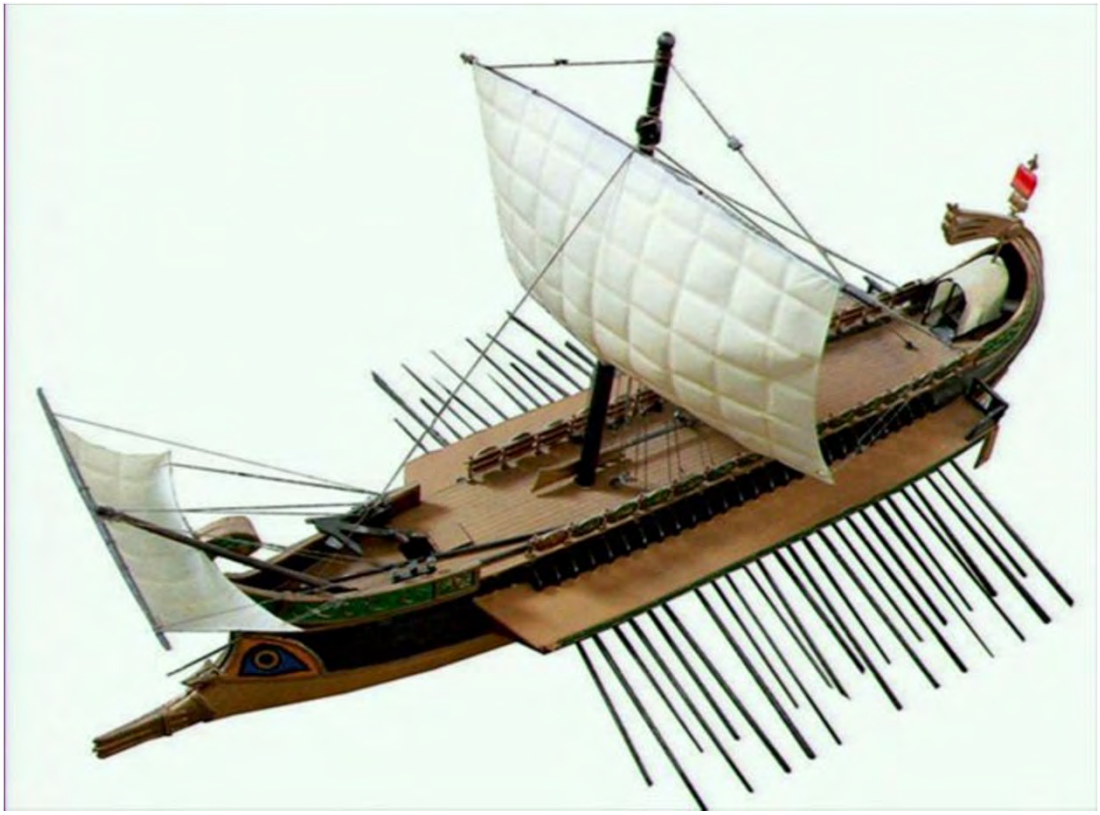


The Sicilians blocked the harbor from here to here with boats. They chained them all together and they locked the Athenians inside. And the Athenians made a break for it. They had a battle in here. They came through the line right here and then the Syracusans chased them up here. Well we surveyed out here. We didn't find much. But we found a lot inside. But it's all buried under like 20 feet of mud and sand because of these rivers that run into here. I'll show you what we were looking for.

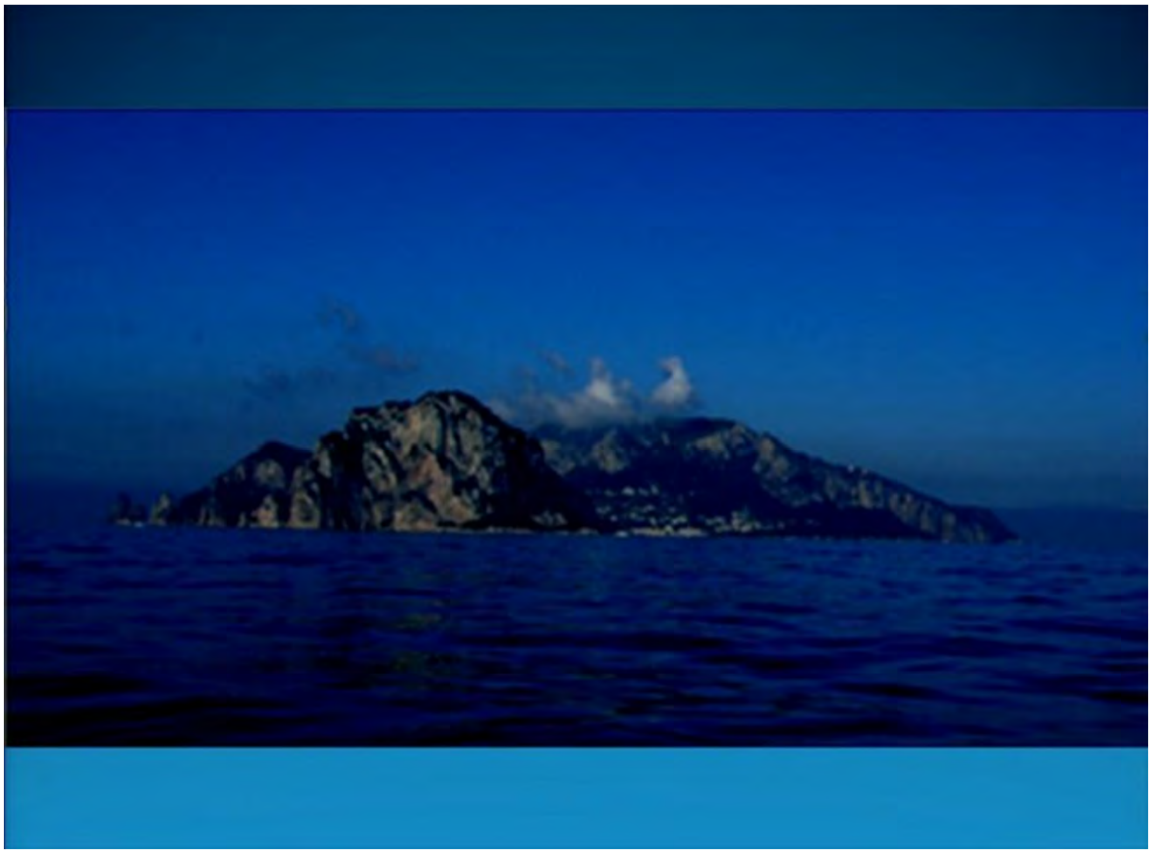
This is how we go about it. We take and we draw those green lines on the chart and then with the ship we follow those lines and make those brown transects. They're about oh 600 feet across so we got a big swath. And then we go back and do a high resolution one.



But this is what we were looking for was the prow. You see the pointy end of the boat? These were made of bronze.

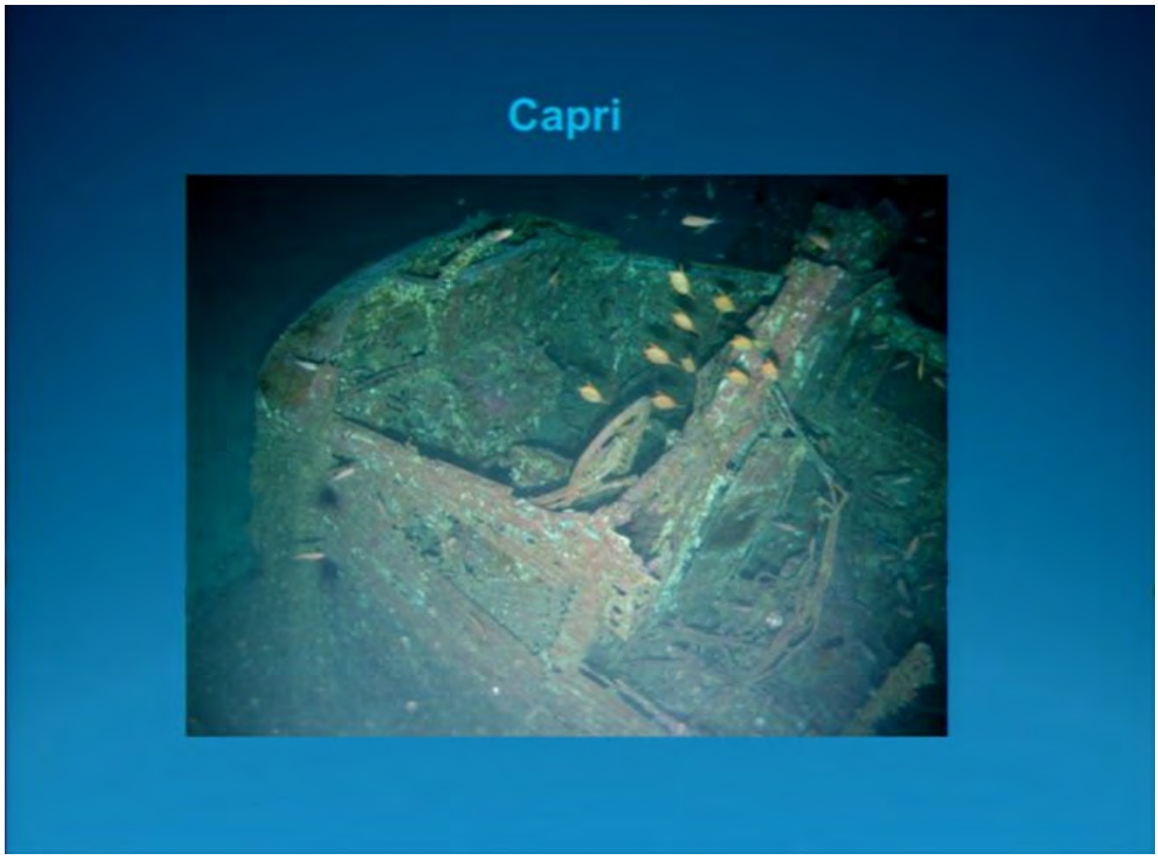


I'll show you a better picture. See, these were called triremes they had three rows of oars and they had about -- up on deck, see the shields? There were about 50 marines on deck that were the fighters and they had 175 rowers and they'd get these things going about 16 miles an hour. So you can imagine how long that lasted. And then they would ram the ship with the prowl. And we were looking for that. I was looking for the bronze shields and the helmets and things, but we didn't get down deep enough.



Capri, you've all heard of the island of Capri. We've found five ships around Capri.

And it's kind of neat. We get invited by the mayor so we just take our boat and go into the harbor and have dinner and go home.



Capri had a lot of World War II things, too, and this is happens to be an airplane that probably had parts of it dragged up by a troller. We find a lot of damaged things where fishing has damaged great areas of the sea bottom.

Nice amphora. Look. What's different about this amphora? It has a top on it. Very rare. See the plug on the top? So we brought it up. Unfortunately, this one had a hole in the bottom that we didn't see.

Now, here's some interesting objects. They are either silver, copper or lead. And we went down to get them hoping it was silver but they were so heavy that we couldn't move them with our ROV. So a project to come back to.

There's my crew. All the guys in the gray shirts are the crew. The local police in the blue and the carabineiri in the dark blue and the Italian diver. I think that's it. [applause].

Questions

Question: Ian, are you still diving?

Ian Koblick: Yes. Yes. We'll be diving next month in Cayman Islands.

Question: I've always wondered how in the world you get in and out of Tektite and not have the water come in and out.

Ian Koblick: It's like taking a glass jar and sticking it in your sink. You push it down and the water comes up until the pressure in there is exactly the same as the water level. And so what we do is we blow air into it, until the air pressure inside is the same as the water pressure outside and that holds the water out.

Question: You can get in and out that way?

Ian Koblick: You just go in and out of an air bubble.

Question: I was just curious about the toll it takes on the body living under water for long periods of time. Is it physically difficult?

Ian Koblick: Look at me, I'm 105 [laughter]. There are problems. Aseptic bone necrosis is a real serious possibility if you do a lot of saturation diving and you don't get the proper decompression. In the old days, which is when we did it, mostly, they didn't know what the proper decompression schedule should be. It was really by guess and by gosh. And you know if somebody didn't get bent, that was the proper one. And when that guy got bent then you added more time to it. Now with the computer, and knowing more about tissue saturation, they're much more accurate. In fact, sports divers now have little computers for diving that didn't exist then. But yes, you get like -- it's a very severe arthritis.

Question: What do you hope to accomplish in the Cayman Islands?

Ian Koblick: I belong to a dive club. It's a very interesting club. The only thing these people have in common is that they all dive but there are like 14 astronauts and under secretary of the Navy and, you know, Secretary of Commerce and all these kinds of folks. And we dive twice a year and we have guest speakers and we talk about how sea and space can join to try to provide space technology for the sea. You know the extra vehicular excursions that the astronauts do in their spacesuits? That came from ocean systems from the undersea industry. In fact, Mike Gernhardt, an astronaut that's still very current, was one of the undersea people that became an astronaut and he'll be diving with us next month.