



cinefex | blog

#####

John Bruno Q&A – James Cameron’s Deepsea Challenge

by [Joe Fordham](#)

Posted on [August 8, 2014](#) by [Joe Fordham](#)



Visual effects supervisor John Bruno first met filmmaker James Cameron at the 1985 Tokyo Film Festival, where Cameron was screening *Aliens* and Bruno was promoting the visual effects of *Poltergeist II*. Bruno’s background – growing up in the ocean-side community of Monterey, California, combined with his experience in animation and the nuts and bolts of movie making – sparked a mutual appreciation that led to the filmmakers’ first professional collaboration, earning Bruno a ‘best visual effects’ Oscar – with Hoyt Yeatman, Dennis Muren and Dennis Skotak – for Cameron’s 1989 underwater science fiction tale, *The Abyss*.

Work on *The Abyss* involved many practical underwater dives, including Bruno’s first dive in a submersible off Grand Cayman exploring the 850-foot-deep wreck of the cargo ship *Kirk Pride*, which provided valuable reference for fictional scenarios. After filming, Cameron continued to invite Bruno on recreational dives until out of the blue Cameron proposed another submarine excursion, swearing Bruno to secrecy, diving on the wreck of the RMS *Titanic*. The footage wound up in the opening scenes of Cameron’s 1997 box office champion. “I dove with famed underwater photographer Al Giddings twice to the *Titanic*,” John Bruno recalled. “We had lunch on the bridge in front of the *Titanic*’s bronze telemotor – I had a cold hotdog, a bread roll, and a piece of broccoli; and it was best lunch I ever had! We were in the lighting sub, *Mir 2*, lighting the *Titanic* as Jim filmed from in *Mir 1*. So, I am in the movie



— “The Abyss” covered in Cinefex 39.

Titanic, inside a submarine.”

In 2001, Bruno returned to the *Titanic* site as a producer on Cameron’s 3D documentary *Ghosts of the Abyss*, using a pair of small, custom-engineered remotely operated vehicles (ROVs) to explore deep inside the wreck. Cameron continued to record his dives, including the 2002 Discovery Channel documentary investigating a sunken World War II battleship, in *Expedition: Bismarck*. A few years later, while Cameron was prepping his space epic, *Avatar*, Bruno learned that work was underway on a classified new submersible, a futuristic one-man vessel designed to venture into the deepest place on earth, the ‘Challenger Deep’ in the New Britain Trench, a volcanic cleft in the ocean off Papua New Guinea.



— Bill Paxton, ‘Mir’ submersible pilot Genya Cherniev and John Bruno, “Ghosts of the Abyss” 2001 © Walden Media / Buena Vista Pictures.



— ‘Deepsea Challenger’.

The sub, which resembled a vertical torpedo painted ‘Kawasaki racing-green,’ gave its name to Cameron’s latest documentary, sponsored by National Geographic and Rolex, released in special venue theatres as *James Cameron’s Deepsea Challenge 3D*. Bruno shared director credit on the film with Andrew Wight and Ray Quint. Wight initiated filming, but then tragically died with documentary filmmaker Mike deGruy in a helicopter accident. Bruno flew out at short notice to record the expedition that went on to make history March 26, 2012, when Cameron touched down on the seabed, seven miles beneath the ocean surface. Quint directed historical reenactment scenes and oversaw Australian-based postproduction, working with Melbourne visual effects house Iloura.

John Bruno described to *Cinefex* his experience capturing 1,200 hours of footage — which film editor Jane Moran honed to a gripping 90-minute documentary — chronicling Cameron’s latest aquatic odyssey, and exploring his filmmaking colleague’s unique spirit of adventure.



— John Bruno and friends on location in Pomio, Papua New Guinea. Photo: Mark Thiessen, National Geographic.

What’s it like to direct Jim Cameron?

Jim and I have a 25-plus-year history of working together. When he asked me to direct this project I thought, well, I have knowledge of deep-ocean submersible diving, and had insight where to take the backstory. And I wasn’t intimidated to ask questions, because we know each other so well. For example, when the expedition was underway, I was struck by an idea for something I wanted to talk to Jim about on camera. I knocked on his cabin door and said, ‘Jim, there is something I’d like you to do.’ He replied, ‘Well, you’re the director. Tell me what you need and I’ll do it.’ After that, I just got on with the job.

When you joined the production, after the helicopter accident, did you have to hit the ground running?



On the flight to Australia, I started to break down the script. I listed the key people involved. I had to learn everything about them and the *Deepsea Challenger* submersible in the next 72 hours. I had a breakdown of the 3D cameras, backup equipment and the key members of the camera crew. I needed to know where the safe zones were for filming aboard ship. Launch control officer David ‘DW’ Wotherspoon and my director of photography Jules O’Loughlin became my closest friends and allies because shooting at sea — on an open-decked ship is difficult and dangerous.

Our surface vessel, the *Mermaid Sapphire*, was a deep-ocean pipeline survey ship. There were cranes and winches with steel cable running everywhere. It’s an industrial platform. During a sub launch, deck hands and crewmen

- John Bruno interviews James Cameron prior to a 'Deepsea Challenger' test dive.

sub started swinging loose, we would have a 'situation' and camera operator looking through an eyepiece would not be watching his surroundings — his job is to follow the action — so we had to be self-aware, and look out for each other.



- The 'Deepsea Challenger' is winched above the deck. Photo: John Bruno.

Exactly. Walt Conti and animatronic designer Ty Boyce both worked with us on *The Abyss*. On camera, I asked Walt to compare Jim then and now, and he recalled how the conversation always turned to diving. It was the same with other members of the crew, the discussions would always turn to going out on some sea adventure. That led to us to incorporate footage from the making of *The Abyss*, the making of *Titanic*, the 16,000-foot dives to the *Bismarck* and we tied that into this documentary. Before *Deepsea Challenger*, Jim had organized seven deep-ocean expeditions and logged 77 submersible dives. This was no stunt. Jim made that very clear in the opening of the film, when he explained how the *Deepsea Challenger* was designed as a real scientific platform.

The sub is a unique-looking vehicle. Jim discusses the vertical orientation in the film; was there a reason he had it painted Kawasaki racing green?



- Bruno with the 'Deepsea Challenger'. Photo: Jules O'Loughlin.

How did you fit cameras in the sub?

The pilot rode inside a 48-inch diameter sphere. It was very tight quarters. Jim and the submersible co-designer and pilot Ron Allum each dove in the sub. They had a test sphere they used to try to fit everything inside the vehicle — life support systems, recording drives, instrumentation. There was a 5K RED Epic camera mounted inside the view port. Jim had a monitor to view that image, and when he

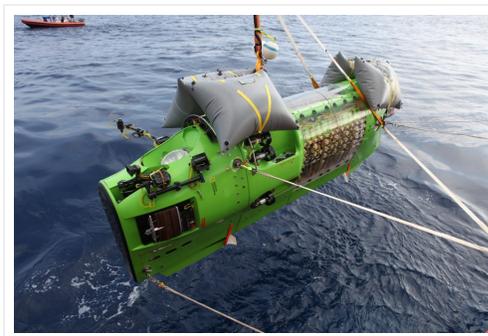
would be straining to control the *Deepsea Challenger* with ropes that crisscrossed the deck and guided it over the railing and into the sea. If a rope snapped, or the



- On board the 'Mermaid Sapphire'. Photo: Jules O'Loughlin.

When we were out over the New Britain Trench, Jim set a record for the single deepest dive of a manned submersible — 8,000 meters, or 27,000-feet. On board the *Mermaid Sapphire*, we had a satellite feed to the outside world. We could post updates on the Internet and receive information. We were getting feedback about the dive. One Tweet in particular bugged the hell out of me. It said something to the effect that this was just 'a rich Hollywood guy doing a stunt.' That made me angry. I told Jim I wanted to change the entire line of questioning in my upcoming interviews and find people who knew him as an explorer going back 20 years.

You mean, like animatronic designer Walt Conti, who built the weight-release system on the *Deepsea Challenger*?



- The 'Deepsea Challenger' begins its descent into the New Britain Trench. Photo: John Bruno.

He just thought it looked good. It was easy to see. It was either that, or white or yellow, and green was good. I really liked the design, where they had clear Lexan panels on the sides so you could see the lights of the batteries were all working. It also gave a really cool 'sci-fi' visual to the whole thing. It looked like a spaceship. The vertical orientation came from something we always talked about when we were SCUBA diving. Generally, divers are taught to equalize their ears as they go down, slowly, carefully and cautiously. When you dive with the James boys, if you're going down 50 feet, you want to get to that depth as quickly as possible so you have more time at the bottom. It's a theory that perpetuated itself, I believe, into the *Deepsea Challenger* design. But it makes sense. The *Mir* subs took two and a half hours to get down to the *Titanic*, at 12,500 feet. That gave us six hours bottom time, and then it took two and a half hours to get back up. The *Challenger* rocketed to the bottom, three times deeper than *Titanic*, in two and a half hours, and returned in 90 minutes — that's three or four times as fast. The expedition journalist, Dr. Joe MacInnis, described it as 'a gravity rocket.'

wanted to look out, he could move that camera out of the way. There was a small 3D camera mounted in a fixed position in front of him in the sub, and that camera documented his every word on the dive.

On the exterior of the sub, there were two specially built cameras designed by Jim's engineers to withstand full ocean depth. One was mounted to the end of a six-foot boom arm, which he could pan and tilt in any direction. And the other was mounted on the manipulator arm, and was set up for macro imaging of animals and rocks.

There was also a robotic submersible 'Lander' following the dive. Did you use that for additional photography?



— The Lander scientific platform. Photo: John Bruno.

Our science department ran two robotic Landers. Marine engineer Kevin Hardy, formerly of the Scripps Research Institute, built those. One Lander had a 3D HD camera.

Also, on the *Mermaid Sapphire*, we had a very large, very yellow ROV called the *Quasar*, which we fitted with our own deep-ocean 3D camera and lights. On the 4,000-foot dive, *Quasar* got some great shots of the sub moving and working on the bottom. The *Quasar* was also there as a potential rescue vehicle. The plan was, if there was a malfunction on Jim's sub and he was within its reach, Donny Cameron (no relation) who operated the *Quasar*, could attempt to grab the *Deepsea Challenger* and pull Jim back to the surface. That ROV turned out to be a much better camera platform than we imagined.

Jim's inspiration for this expedition, as depicted in the movie, began in 1960 with the submariners Don Walsh and Jacques Piccard on the bathyscape *Trieste*, which made the first descent into the Mariana Trench. How did you bring that to life in the documentary?

In the script, Jim referenced the fact that he was influenced by that dive when he was a young boy. It's what got him interested in deep-sea exploration. In fact, he brought Don Walsh on board as an advisor, and suggested it would be nice to juxtapose the *Deepsea Challenger* dive with the dive of the *Trieste*.

After the main shoot, when I got back to Melbourne, I located period footage of the *Trieste* dive on-line. It was newsreel footage and filmed interviews done in 1960. They were black and white and not very high quality. Rolex was kind enough to ship us a museum display model of the *Trieste* submersible to study, and Don Walsh referred us to the National Museum of the United States Navy in Washington D.C., where the *Trieste* is on permanent display. I initially thought we could film our re-enactors in the actual sub, but our research showed us that the sub had been modified since 1960, it was quite cramped inside, and it had also been painted a completely different color.

We decided if we were going to do this we'd have to build set pieces to re-tell portions of the *Trieste* story. I scripted and storyboarded the sequence; Ray Quint then took over in postproduction and directed and edited those scenes. To create exterior underwater shots of the 1960 dive, the *Trieste* descending into the abyss and returning, Iloura, a Melbourne visual effects house, built a stunning 3D replica of the *Trieste* as it appeared in 1960. They created some beautiful shots of the *Trieste* as it descended to the bottom, and then landed and returned.

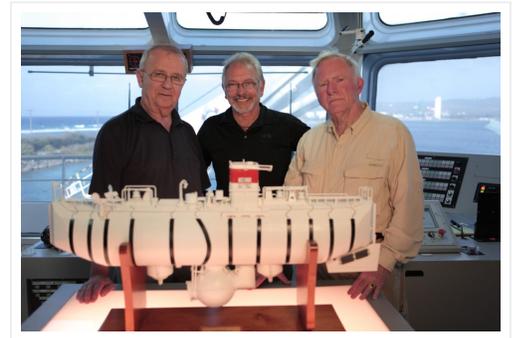
There were some other interesting reenactments of Jim as a boy sitting in a cardboard box submarine. How accurate were they?

Again, that came from Jim's script and comments he made when I interviewed him. When I discussed opening the film with that story, Jim was initially a little embarrassed about including those scenes. But, to me, the story was about what inspired Jim to want to become an explorer, what drove him to get to this point, and I felt this would help show Jim's motivation. Jim said that would have to be my decision; so we did it.

Charlie Arneson, our expedition logistics supervisor, contacted Jim's family, and they provided us with pictures as reference. In Melbourne, producer Brett Popplewell and Ray Quint cast a young boy that looked remarkably like Jim did back in the day,



— Cameron emerges from a successful dive.



— Russian submariner Anatoly Sagalevitch, John Bruno and U.S. Navy Lt. Don Walsh with reference model of the Walsh's 1960 bathyscape 'Trieste'. Photo: Jules O'Loughlin.



— Cameron greets Don Walsh on the deck of the 'Mermaid Sapphire'. Photo: John Bruno.

and they found some clothes that matched what Jim was wearing in the photos. Ray directed those scenes, and they turned out to be a nice way to open and close the movie.

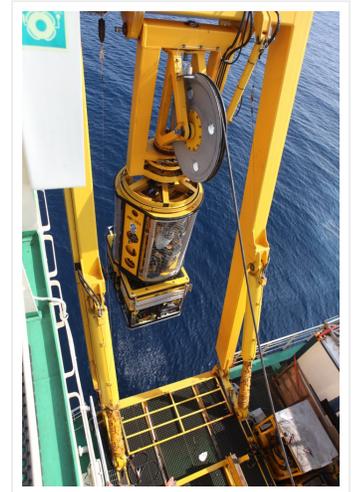
The film also enumerates the harsh realities of Jim's dive, especially the many terrible ways to die in the event of a malfunction at great depth. How did you broach the issue with Jim and his wife, Suzy Amis, about what you would do if things went wrong?

It was tricky; especially after the tragedy of losing Andrew and Mike on Day One of the expedition. But on the way to the airport I was with Jim and Suzy and I had to ask that question, 'Have you guys ever discussed something happening?' Jim looked at me and said, 'No.' I looked at Suzy and said, 'Seriously? You guys have never discussed it?' Suzy told me, 'No, it has never come up. I trust him. He's a really

smart guy. He showed me all the safety systems and how the backup systems work. Nothing's going to happen. He knows what he's doing.' Suzy was a really strong woman. I couldn't crack her. I could see why they were together.

Out on the ship, I asked Jim again, this time on camera, 'People look up to you. You're financially secure, successful, you made two of the highest-grossing films of all time; you're married to a beautiful woman, and have five kids. Why are you doing this?'

He replied, 'I wanted to set an example for my children.' That's when I realized the underlying theme of this movie. It's about character and moral courage. It's about setting examples. That's what Jim was trying to pass on to his kids. And so I told him, no matter what happened, I was going to accurately document this dive, even if it turned out to be a forensic document of what went wrong. Luckily, that turned out not to be the case.



— The 'Quasar' camera platform. Photo: John Bruno.



— The 'Deepsea Challenger' crew celebrates Cameron's record-breaking dive. Photo: John Bruno.

It's a fascinating journey, and I won't spoil Jim's final summation, but I did find it quite moving where he reflected on what inspired him — was that a theme that he always had in mind, or did that slowly evolve as you discovered the film?

Jim is always talking about inspiring kids — his own, and the next generation of explorers. His wife Suzy has this wonderful progressive 'green' school, the MUSE School, which she co-founded with her sister, and Jim talks there often, giving inspiration to children. We need scientists now. Kids now want to make a million dollars in one day on the Internet; but Jim is interested in inspiring a sense of adventure. Get up, get outside, go somewhere, do something magnificent and

adventurous. Explore.

James Cameron's Deepsea Challenge 3D opens in select theatres August 8.

Deepsea Challenge 3D Official Trailer (2014) Jam...



- [DeepSea Challenge 3D – official website](#)
- [National Geographic](#)
- [Iloura](#)
- [Stereo D](#)
- [MUSE School](#)

James Cameron's Deepsea Challenge 3D © 2014 Deepsea Challenge, National Geographic, photography by Mark Thiessen. All rights reserved. All other imagery © John Bruno, unless otherwise credited. Thanks to John Bruno, James Cameron, Richard Edlund, Graham Edwards.

CRAFTYAPES VFX

Feature Film & Television

CRAFTYAPES.COM



STAR TREK: PICARD