

The Future of Marine Rescue

A Conversation with Mike
Hammond on the Candela P-12



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Interviewer: Mr. Hammond, thank you for speaking with us today. Your recent Churchill Fellowship Report, “Navigating Our Future,” has sparked considerable discussion about the evolution of marine rescue services. A particular point of interest is the potential of new vessel technologies. Could you elaborate on a vessel that caught your attention, the Candela P-12?

Mike Hammond: It’s a pleasure, thank you. I actually started my research project in earnest after seeing the Candela C-8 on display at the Sydney International Boat Show.

I had been thinking we may need to do some research to understand what future boating technology might mean for marine rescue organisations, but when I saw that boat I knew we had to start right away. Later I was able to visit the Candela factory and ride the P-12 in Stockholm, and it was my first experience of an electric vessel fitted with active foils.

It’s really impressive, and I think a lot of people are surprised to hear that a boat like this is already in commercial operation carrying passengers, but if they could experience it for themselves they will understand why the quiet operation and smooth ride of a boat like this makes so much sense.

Interviewer: Hydrofoiling in a rescue context sounds intriguing. What specific characteristics of the P-12 do you see as beneficial for marine rescue?

Mike Hammond: My first concern in relation to all alternative propulsion technologies is to understand how we need to adapt in order to be able to help people when they get into trouble, for example if they lose track of time and run their battery flat and we need to tow them, I want to train our marine first responders in how to do this without risking damage to the foils, and I want our responders to also have some understanding of the technology on board.

Having said that, I'm also interested in the possibilities of alternative propulsion for rescue boats, and while marine rescue organisations tend to be quite conservative and take time to adopt new technology, I can see some real potential. I know Candela is working on a version of the P-12 for the commercial sector, and I'll be really interested to see it, I think there is a lot of potential for this technology in a rescue context, and the efficiency and range that the active foiling system brings, even at speeds around 25 knots, will make it viable as a rescue boat in many locations.

Interviewer: Speed is definitely critical in rescue. What about its performance in less-than-ideal sea conditions? Rescue operations often happen in challenging weather.

Mike Hammond: Yes that's right, we are often going out when everyone else is coming in, and we will be really interested in how the foiling systems go in rough weather. In New South Wales we often have to deal with seas of 2-4 metres, and occasionally significantly more, so this will be a key consideration for us. I think foils will be a great benefit most of the time, giving a softer ride both for transporting casualties and for our crews, reducing fatigue and injuries.

I understand the foiling system is quite sophisticated, making adjustments many times each second based on input from multiple sensors, and I think most of the time this would be a great benefit in rescue work. Then, if the seas get too rough for the foils to be effective, the fact that they are retractable is really important, allowing us to get the benefits of foils when conditions are right, but retract the foils and operate as a conventional hull in extreme weather when necessary.

Interviewer: You also mentioned its near-silent operation in your report. How would that benefit SAR?

Mike Hammond: The super-quiet operation of electric vessels could be a huge benefit when searching for people at sea or on isolated coastlines where they may be calling out for help – they are hard to hear over a couple of big diesels but the ability to run quiet on electric propulsion would really help in that situation.

Interviewer: Safety is paramount in rescue vessel design. How does the P-12 measure up? **Mike Hammond:** That was one of the key things I wanted to understand about electric vessels, and I was impressed by what I saw at Candela, clearly safety and quality engineering are high priorities, and there are so many safety systems and redundancies built in to the boats and so much testing done, I would have no concerns about using this technology in a rescue context, or taking my family on one. **Interviewer:** Are there other marine rescue organizations exploring this type of technology?

Mike Hammond: While I was in Sweden I was also fortunate to visit the Swedish Sea Rescue Society, a great organisation similar in many ways to my own, and they are well ahead of most marine rescue organisations in testing and evaluating electric propulsion and foils in a rescue context, and have a 9m prototype under construction with their 'Project Elinn' team in collaboration with the Research Institute of Sweden. This is an exciting project and I think all marine rescue organisations will benefit from their work and insights.



Interviewer: Despite these advantages, what are some of the challenges or considerations for adopting a vessel like the P-12 for mainstream marine rescue?

Mike Hammond: There are a few challenges here. The first is that most marine rescue organisations are inherently conservative, as we are often funded by donations and this brings a level of public accountability that makes our decision-makers reluctant to invest in cutting-edge technology before it has been proven in the broader market. Environmental conditions are also a factor, as some marine rescue organisations, including my own, sometimes have to operate in offshore conditions that may really test foiling systems, so we really need to understand how a boat like the P-12 would operate in really big seas before we considered it as a primary rescue vessel. Some marine rescue organisations enjoy more sheltered operating environments where this may not be an issue, but for my organisation we'd need to do some testing, and possibly start out with a boat set up for rescues on our rivers and harbours.

The other challenge is of course range, and while the 40 nautical mile range of the P-12 at speed is very impressive, on some occasions we need to go 30 or more miles to sea, and often return while towing a rescued vessel. There is also the fact that we sometimes have a second rescue job waiting for us before we return from the previous one. I think there are ways to manage this, for example we could adopt a model in the future where we have electric vessels for inshore and close-offshore rescues, but keep a few larger diesel (or perhaps hybrid) boats for the bigger jobs that take us far offshore.



Interviewer: So, what's your overall outlook? Do you see vessels like the Candela P-12 playing a significant role in the future of marine rescue?

Mike Hammond: I think we will see boats like this used in marine rescue services, though for the reasons I've talked about it will take some time, and some organisations will move more quickly than others. I can see the Candela P-12 being a really good platform for rescue work in the right environment, though, and I think it's important for marine rescue organisations to start thinking about their future fleet needs and how we can embrace this kind of technology, not just for the environmental benefits but also for the safety and capability advantages they will bring. I'll be really interested to see how the Swedish Sea Rescue Society Project Elinn team progresses with their vessel, and as we see more electric boats operating in our harbours, and as battery technology improves, I think we will see boats like the Candela P-12 as a great option for marine rescue work.

Interviewer: Mr. Hammond, this has been incredibly insightful. Thank you for sharing your expertise on the Candela P-12 and its implications for marine rescue.

Mike Hammond: My pleasure. It's a conversation that's just getting started, and I hope some people will find my report on marine rescue responses to new technology interesting, it's free to download on the Churchill Trust Australia website. I'm really interested to see how we can bring the advantages of boats like the Candela to marine rescue services in the future.

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