

What Are Wave Gliders? Transcription

Wave Gliders are probably the most technologically advanced gizmos we had out there. I know Eric Lindstrom talked a little bit about this, so I'll just briefly repeat what he said. The Wave Glider is a vehicle that takes its power from the environment. It has a surfboard like thing at the surface, and then a thing at the bottom at about 6 meters depth with fins on it. When the waves pull the whole thing up, it has its fins adjusted so that it moves forward. Then when the surface waves go back down it adjusts its fins and again moves forward. The guide thing at the bottom pulls the top thing along. The top part is mainly for sensors and for power.

This is the surfboard at the surface for the Wave Glider. You can see the solar panels. You can see the meteorological instrumentation. This thing is how it communicates with the outside world, and a flag for visibility. This is the track of it. These are the Wave Gliders moving around in a track around our 3 moorings; we deployed 3 moorings which I'll talk about in a little while. The Wave Gliders retrieved excellent data. They worked very well. They've been sending back excellent data. They've done marvelously well; we've been very pleased with their performance out in the field.

This is the kind of information that you get from a Wave Glider. You get one salinity sensor that is very near the surface at 20 cm. depth, and another salinity sensor that is at about 6 m. depth. It's about 18-20 feet. The main thing to look at is the difference between the surface one and the deep one. You tend to have these little short-term events on the surface one where the surface salinity gets much lower, then the deep salinity.

And the same thing with the temperature here; you can have very different temperatures. Most of the time they're pretty much exactly the same, but sometimes they get to be very different. You can also see the salinity going down over time.

The salinity at the very beginning—where it says around here 37.7 to around 37.8—may not mean much to most of you here, but 37.7 and 37.8 salinity is extraordinarily high. It's about as high as people have ever seen in the open ocean. Of course we've been observing for a long time. Probably if you look hard enough you can find some values that are higher, but it's as high as many of us have ever seen the ocean being. It was quite astounding to see the ocean being that salty. That was a big shock to all of us to go out there and find out how salty that particular part of the ocean was.