**Isaacs Kidd Midwater Trawl On ship’s trawl winch with 9/16” wire**

*Ship’s required equipment as of 10/20/17*

“The OSU Net”

This is an IKMT (Isaacs Kidd Midwater Trawl). It is a relatively simple net system to deploy and recover. Its main metal parts are about 2 meters wide and the opening is about 2 meters high once it is hanging over the water.

Net weight:
We think the bottom plate is ~ 80 lbs, top bar ~ 10 lbs, bridle/shackle ~ 10 lbs so around 100 lbs for everything not including the net.

Deployment/Recovery
This has been deployed and recovered using 2 people for lifting and guiding on either side of the net, one person for A-frame control, and one person in control of the overall op. Snap hooks/tag lines have never been needed. I am attaching a series of pics of one of our deployents off the R/V New Horizon a couple of years ago.

Tow Cable:
This does NOT require a conducting cable. Depth info will be acoustically transferred from the yellow transmitter on the net to the hydrophone that is to be attached to the keel pods.

The trawl wire out to depth ratio has been about 3 (+/-0.5) to 1. As much as about 1500m of wire might need to be let out for deeper tows.

The wire tensions that we have seen have ranged from 500 to 3000. I would say that they average between 1500 and 2000.

We have used wire out speeds of 30 to 40 m/min before and usually something a bit slower for the wire in speeds, at least for part of the tow, depending on what we are trying to catch.

A-frame block:
The only thing we have had to consider here is that sometimes the length of the nets bridle and parts, when hanging from the A-frame, are long enough that some of the bridle gear, (swivel and shackles) needed to be pulled into the block a bit in order to get the net off of the deck. You can see in the pictures that there was a wider sized block on the New Horizon because its A-frame was just barely too short to fully get the net off the deck without this block. This might not be an issue for the R/V Sharp. We can get a better feel for all of this once we arrive to set everything up.

Ship speed:

This is relatively faster compared to other nets. We anticipate a tow speed range of 3 to 4.5 knots. Our last cruise with this net averaged 3.5 to 4 knots. The depressor 'wing' on the net system helps to keep the net down during this higher speed and the higher speeds aid with trying to get a good catch with a relatively smaller sized net. This has been speed over ground, not speed through the water, since the ships DVL is usually off during our cruises.

Total towing time:
The time the net is in the water could be anywhere between 0.5 and1.5 hours. This mainly depends on the target depth.

Towing direction:
We try to choose a tow direction that is best relative to the  the water currents and winds when we can but sometimes the location of biology and/or the terrain and/or the science needs don't make this easy or possible. Decisions on tow direction have thus been made on a tow by tow basis with coordinations between scientists and the bridge.