

**Mounted binoculars for marine mammal observation
Originated on November 10, 2013 by Paul Duncan (SOI)**

From: Paul Duncan (SOI) on Sun, Nov 10, 2013

Hello,

Just wondering if there are people out there doing seismics or multibeam sonar who are using stand-mounted binoculars for their marine mammal observations, and if so can you recommend a make/model to purchase.

Best Regards,

Paul Duncan.

From: "J. Scott Ferguson" (U. Hawaii) on Tue, 12 Nov 2013

This from a NOAA colleague.

----- Forwarded message -----

From: **Erin Oleson - NOAA**

We use the Fujinon 25x150 MTM Binocular w/ Yoke Mount for a pedestal base. This binocular is waterproof and fogproof, wide angle, has a 2.7° angle of view, individual ocular focus, and is made for marine use. We use a custom reticle lens that is installed by our supplier Baker Marine (in San Diego). I'm not sure if there are other US suppliers of the binos, but Baker is the only one that I know of makes the reticle with distances standard for NMFS mammal survey use. Last time we purchased (fall 2012) the cost with the reticle lenses installed was about \$19K.

This bino is very heavy and requires a very sturdy pedestal base with either hydraulic or hand crank height control. There is a smaller version also made by Fujinon that could likely be mounted on a rail. I've never used those so can't speak to their quality.

Best,
Erin

J. Scott Ferguson
Director of Marine Technical Services
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Reply From: Christopher Griner (WHOI) on Tue, 12 Nov 2013

Hi Paul,

A friend who works as a US Fish & Wildlife Service observer passed along this information.

Hopefully this can give you an idea of what to look for.

Best regards,

Chris

http://www.nmfs.noaa.gov/pr/pdfs/permits/tgs_monitoringplan2013.pdf

3.2.1 Protected Species Observer Protocol

Weather and ice permitting, TGS intends to begin operations no earlier than July 15, 2013, when there are approximately 24-hours of daylight. To adequately monitor proposed exclusion zones during all daylight seismic operations, at least five VPSOs are proposed to be based aboard the seismic vessel with at least three, and up to five, aboard the scout vessel pending any bunk-space restrictions. As daylight decreases during the survey, the number of VPSOs aboard the seismic vessel may be reduced. At least one observer will be on duty during all daylight seismic source operations; however, two VPSOs will be on duty whenever possible (which is expected to be the majority of the survey). An observation schedule with five VPSOs allows for two VPSOs to be on duty at one time for 21 hours per 24 hour day. The three hours with only one VPSO on duty would be during nighttime hours when observations will be increasingly limited by daylight. During meal times observations may be conducted by one VPSO. In addition, two VPSOs will be on duty during all 30-minute periods prior to seismic source ramp-up and during all ramp-ups. VPSOs will be on duty for no longer than four consecutive hours with a maximum of 12-hours on duty per day.

Prior to mobilization, VPSOs will attend a NMFS- and USFWS- approved survey-specific training program and receive a detailed manual that summarizes the VPSO protocol and mitigation procedures stipulated in the permits issued by IHA and LOA. Once onboard the vessels, and prior to the start of the survey, the lead-VPSO aboard the seismic vessel will communicate the role of the visual and acoustic PSO-teams to the vessel crew(s) and establish a method of communication for relaying mitigation requests to the seismic source operators (see Section 3.2.2 below).

Marine mammal observations will be conducted from the bridge or other suitable platform on the source and scout vessels. The highest safe platform available will be stationed by VPSOs. During daylight, **VPSOs will systematically scan the area around the vessel with reticle binoculars (7x50 Fujinon or equivalent), big-eye binoculars (Fujinon 25x150 or equivalent) and the naked eye. NVDs (ITT F500 Series Generation 3 binocular-image intensifier or equivalent)** will be available to aid observations during periods of darkness as relevant. VPSOs will be provided a laser rangefinder to assist with distance estimation. These tools are more commonly used to train VPSOs to estimate distances visually, than for measuring distances to animals in the field.

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Reply From: Jim Newman (WHMSI) on Tue, 12 Nov 2013

I have always thought that if people are serious about monitoring for cetaceans seems like they should use thermal imaging. Mount enough cameras to cover 360 degrees horizontal, looking around the horizon, and a watchstander can monitor them from one point inside the ship, not getting cold and wet. Spouts will stand out like a sore thumb, even if the animals themselves are invisible among the waves. And day or night shouldn't matter. Might be pretty easy to automate the monitoring, too. Am I missing something?

-- Jim

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**Reply From: Val Schmidt (UNH) on Wed, 13 Nov 2013**

I can't recall where I saw it, but I recently read of this very thing. Specifically, they were using thermal imaging to detect the blow plumes from exhale of whales at the surface.

-Val

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Val Schmidt  
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**Reply from Jeff Rupert (LDEO)**

I think you might be referring to this:

<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0071217>.

Thermal imager from First-NAVY with Tashtego software.

Developed in Germany, with mainly Arctic Antarctic exposures off German naval vessels I believe. Very cool. Dial in your radii & it will track a blow. Predictive course software, etc.

Spent some time talking to them at the 2011 SEG & did some follow-up.

Came with a 1M Euro price tag last I asked 💎

JR

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**Reply from Paul Duncan (SOI)**

Val, Jim,

Thanks very much for this (sorry it's a bit late 💎 lots of work going on on the ship right now).

This may get us round a problem where we've been told we can't do multibeam at night because we can't see the whales!

Thanks again,

Paul.

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**Reply From: Peter Ortner (U. Miami) on Thu, 14 Nov 2013**

Not without I expect NMFS approval of that approach and that is likely not AOK unless someone else has already cleared that hurdle

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