

Infrasound from the Maritime Environment

Wide infrasound coverage is obtained using fixed, land-based monitoring stations. However, two-thirds of the earth's surface is composed of oceans, and while some sensing stations are located on islands, no capability yet exists to monitor infrasound from sensors fielded directly in the maritime environment. We investigate the potential of fielding of microbarometer sensors in the maritime environment, on boats, buoys, or unmanned surface vehicles (USVs). This has the potential to provide an expansive, new, remote environment from which infrasound signal detection can be made to supplement the coverage obtained with land-based networks. Placement of sensors in ocean locations may offer coverage where it doesn't exist, or when current land-based monitoring coverage is less reliable due fluctuating environmental conditions. Gaps in detection coverage may be filled with appropriate placement and operations from the technology deployed directly in the oceans. The technical challenges to overcome include sensor survivability, sensor motion-induced interference, wind noise mitigation, and the formation of multi-element directional arrays. This concept will be described, as well as efforts made to develop this technology through at-sea experimentation.

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