The development of deep towed marine seismic systems in Canada, 1970 – present

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The extension of geophysical seismic techniques into the offshore regions in the 1960s involved the application of traditional land based technology in a marine environment. For hydrocarbon exploration, techniques using explosives as seismic sources were initially adapted for marine use and large towed seismic arrays were developed as seismic detectors with appropriate multi-channel recording. However, the scaling down of these techniques enabled shallow sediments to be delineated to a degree of resolution not previously possible on land. The desire to map the extensive continental shelf areas of eastern Canada and the Arctic Ocean attracted the interest of several Canadian groups with both commercial and academic interests in mind.

In the early l970s Huntec ’70 Limited of Toronto and the Nova Scotia Research Foundation in Dartmouth set off on separate paths to address the engineering and technical issues surrounding the collection of seismic profiles in deep water under open ocean conditions. Both these programs were heavily funded by various government agencies and both were technical successes to a level that has not been superseded today.

This paper will trace the development of the Huntec '70 deep towed profiler and the Nova Scotia Research Foundation deep towed Sparker from their inceptions in the early '70s up to the present day.