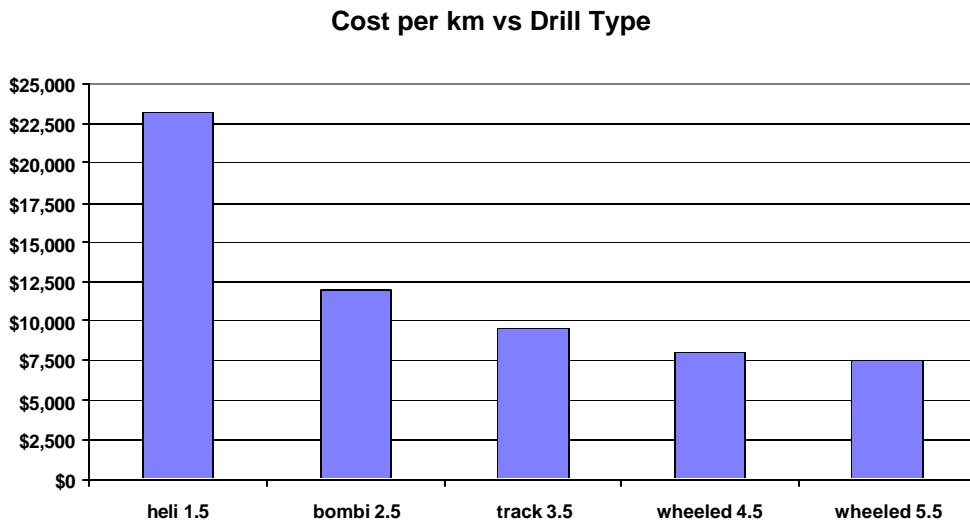


Mike Doyle is the President of the CAGC – the Canadian Association of Geophysical Contractors - representing the business interests of the seismic industry within Canada. The CAGC website may be found at [www.cagc.ca](http://www.cagc.ca).

As this prints, Spring should be well on its way. With the changing seasons we reflect on rebirth and the evolution of our business practises. It is a good time to discuss the changing practises within our business in a column dedicated to economics and environment – line widths and equipment.

The pressure from the public and the media in minimizing footprint and doing a better job on the environment has been increasing in tenor over the past decade. Our practises have come a long way from the days of using large bulldozers working in tandem cutting long straight runways up to 10 meters wide in the landscape. Today conventional seismic consists of smaller mechanical equipment with widths of 5 to 5.5 metres. LIS (low impact seismic) runs in the 3.5 metre area with pressure to lower this to 2.5 metres. We see handcut programs and heliportable programs as low as 1.5 metres.

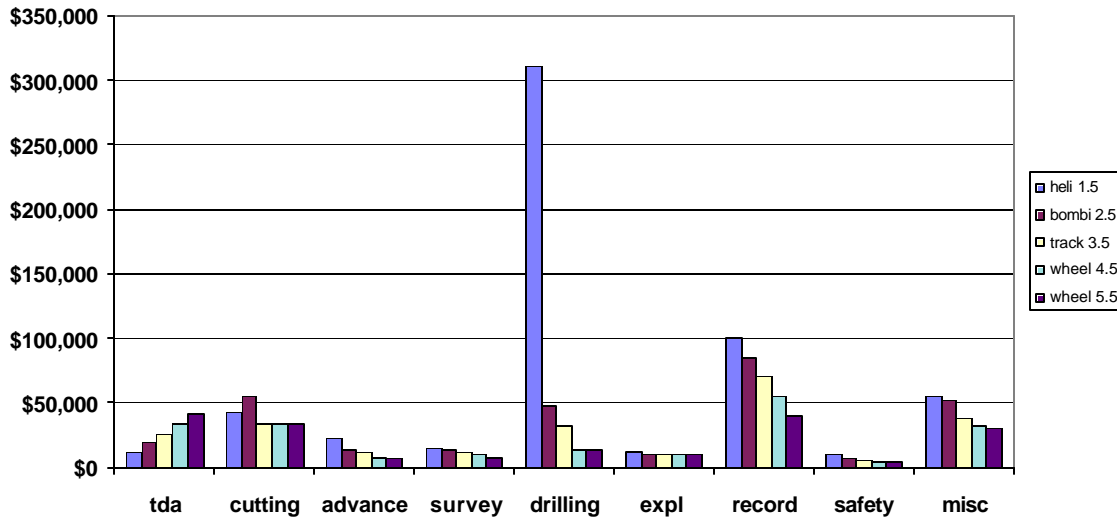
The reality is that the industry takes time to lower the width threshold through new equipment. Furthermore the cost differentials are substantial. The chart below provides a generic per km price structure as the widths decrease.



Assuming the base to be that of a conventional line width of 5.5 metres – reducing the width to 3.5 adds a 30 % cost increase on average – a reduction to 2.5 metres equates to an increase of 60 % to the base – and a 1.5 metres line is over 200 % on average.

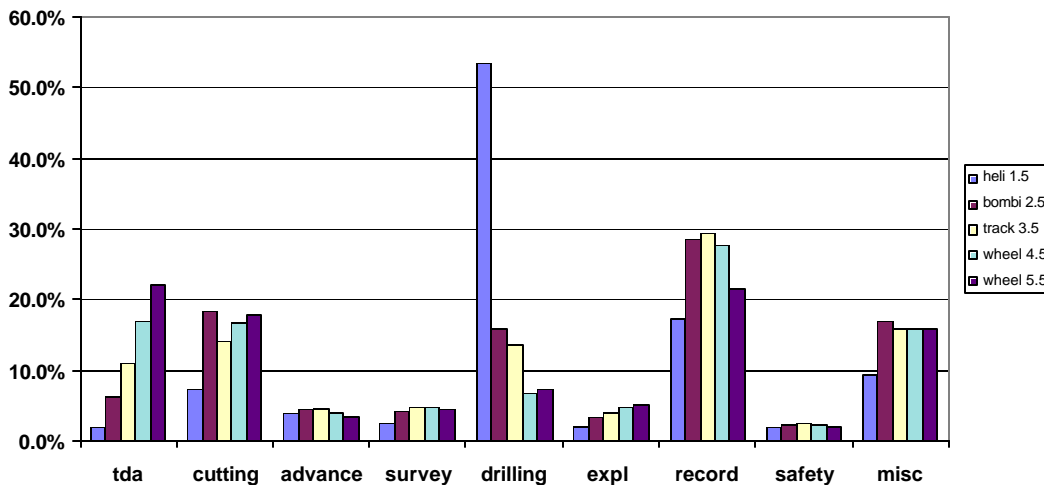
How come? Where does the money go? As this chart illustrates Recording costs have some effect but certainly the big-ticket item in the 1.5 lines is the drills that require helicopters to move them.

**Itemized \$ of Total**



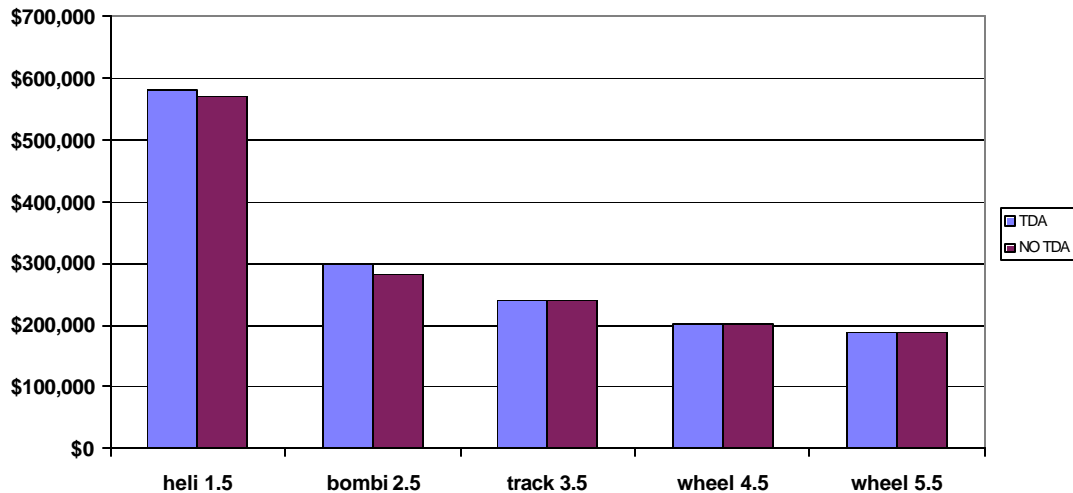
One offset for costs on narrow lines has been TDA (Timber Damage Assessment) reduction. However the telling factor is that the TDA becomes insignificant as a percentage of cost to the program as the lines get narrower.

**Itemized % of Total Cost**



This point is dramatized when we consider the offer that some Forest Companies have made to our industry in which TDA is eliminated when lines are 2.5 metres or less in width. This chart delivers a comparison the total cost of an average 25 km seismic program. As is demonstrated the overall savings are minuscule.

**No TDA Less Than 2.5m**



So the dilemma falls back to the delicate balance between economics and the environment. Some will argue that the number of dollars for seismic in the Canadian market are relatively fixed in any given year. Logically then less work gets commissioned as narrower line widths are fixed. On the other hand the public's perception of our industry is important. Perception very quickly becomes reality in the eyes of politicians. As such we must strive to walk this fine line and achieve some considerations on the bottom end – in whatever fashion that may look like in negotiations between industry and government.

Some final remarks then - there may be some environmental benefits from multi-client programs from the standpoint of shooting an area once and shifting the increased economic burden over a larger number of clients. Proprietary programs will generally reuse the same lines which can delay the environmental recovery.

This seems straightforward then? Not so fast – the thread that runs through all of our businesses is the commodity prices themselves. The market – the clients – react very differently at \$5 natural gas and/or \$30 oil than at \$2 gas and/or \$20 oil. There is always a floor – a limit to economic considerations.

The Oil Industry has to take some responsibility/credit for the drive to reduce impact in the seismic industry. Committees working for the Oil Industry like ILOR, Bill 31, Integrated Land Management, seem willing to sacrifice the seismic dollar in their budgets to try and clean up the entire industries image with the public. Proof of this comes from statements made by Alberta Government Bodies and FMA holders, “No other industry

but seismic has done more to reduce the footprint of their operations working in the Green areas of the Province.”

So, what message do we deliver? Our business is the business of seismic. Our technology, know-how, and equipment run the gambit. As part of an extremely competitive market we react to the needs of our clients with some direction provided from time to time by our regulators. As such we can only present the facts and let each one of you make your own conclusion.

Thank you to Doug Iverson for his timely presentation of the numbers.

From The Thursday Files:

Success has many parents - but failure is an orphan.

(American Proverb)