

# SOUNDINGS ...

*“Soundings” is a regular feature of Lighthouse. It is named in recognition of a newsletter named “Soundings” that was produced by the Dominion Hydrographer’s Office many years ago. It is intended to stimulate thought and discussion within the hydrographic community. We invite your comments.*

## Your responses to Falls’ edition topic : Recovery of Digital Data

Ref “Soundings” Fall issue; I had to laugh with your experiences of your Houdini Lighthouse files. The speed and volumes of digital data we work with these days is truly remarkable. The standards, ability and responsibilities for checking this data not necessarily matching this dramatic evolution. Software wobbles don’t help. Several years back I emailed a preliminary rig move drill site coordinate data to a Drilling Manager ashore. All checks were made, copies co-signed and the email sent. Several days later back ashore I received the emailed copy, rechecked the coordinate data... fine. Then noticed the DM’s name had been changed from Prevett to “Pervert” compliments of a Microsoft “weknowwhatisbestforyou” spellcheck.

Ask anyone in the seismic industry about missing or convoluted digital data and the time spent recovering the same. Plenty of sea-stories there.

Similarly, people offshore that process data are now treated with the kind of reverence once bestowed by villagers on their tribal witchdoctors. When problems arise onboard with data typically on a tight budget job, note the respectful tones as all wait for the synopsis on recovering the data... “the processors are working on it”. With the amount of data collected now added to the survey data budget, it’s no wonder processors are usually the ones with the sign over their work space, “*You wanted it when!*” - The caricatures falling over each other with laughter.

As for recovering data in years to come, if the archiving locale, methodology, person(s) familiar with recovery, storage and medium(s) for reading it are consistent with yours and correspondingly your customers requirements, recovery should be a snap.

However the relationship between successful data recovery and time lapsed proves to be somewhat exponentially divergent in that the greater period of archival, the higher the likelihood of problems with recovery. Let alone the responsibility for the tapes or medium, ask any museum.

With offshore resource industry related projects recovering digital data is usually not too much of a problem as contractual links are established between the contractors’ collecting the data, the installers and eventually the operator that assumes warranty for constructed works. This process can be anywhere from 5 years post commissioning to the life of the field or cable. Increasingly with fast-tracking of projects it is rare specific data recovery would be required after approximately 12 months or so post commissioning. The inadequacies of recovery being overcome by commercial expedience. In offshore resource terms it’s now not uncommon to have operator or owners of a field or cable change hands several times over their life. Intermediary parties such as the construction companies may also evolve, or be relocated or cease to exist. In these cases the time line for recovering survey related data becomes extremely tenuous. Fortunately astute survey contractors will have key data archived. Not necessarily for contractual reasons, simply good business sense.

I believe the onus of recoverability is quite different from HO charting data which is retained for the life of the chart or until revised. I’m not suggesting any particular data set is more important or has greater quality but clearly, the time line of “painless” recovery will vary hugely. Roger Lott \* of BP noted recently; “...*Swathe bathymetry acquisition, and especially processing, remains an area of concern*”. Presumably we are not alone with our misgivings Earl.

In the late 80’s I was bunkered down in the basement of your BIO for several weeks working on a contract for an offshore gold mining company. It was believed that close examination of (amongst other records) old MS.26B echosounding analogue, patterns of seabed textural characteristics could be interpreted; Outcropping, sands, seagrasses etc. The client being specifically interested in an acoustic signature correlating with shallow sub-surface gold deposition.

Working through boxes of musty old rolls distinct patterns through the low frequency return began to emerge. It became quite interesting reading the annotated information on the rolls corresponding to season and coastal location. Within days you could pull out a roll and recognise coastal region, vessel, weather conditions, gain settings etc. Hydrographers signed off on the QC checks (seem to remember SMB "Scooter" using inferior wet paper) and occasionally made comments "breakers ahead, EOL" hurriedly scrawled. The documentation was consistent relevant information, standard international HO practice. Because of these practices the data retained value beyond their immediate purpose. Some of these echo rolls off the East coast dated from the late 1950's... over 30 years old.

I started out to share some thoughts on your question "are we giving enough thought to the painless recovery of error free digital information at any point down the road". What was to be a couple of paragraphs has turned into pages, and I've probably only muddied the waters! It is a

complex question but ultimately one worth asking.

So the best I can do Earl is ask you to qualify "painless" and "down the road". If that means hydrographers in 2030 - making sense of digital survey data collected today; I'd put the question back to you or your colleagues; Are we doing the job properly?

All the best,

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\* Quotation, Roger Lott, Head of Survey BP Exploration - Article "Hydrography for Exploration", Hydro Int: Dec 2002

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Earl asked for comments - Ed. 62

In Pacific Region, we have been recently involved in the recovery of digital data from the 1970s and 80s. These data were archived in different forms on 9-track tape. In some cases, the archival was a binary format and in others it was in plain ASCII format - either delimited or in fixed width formats. Fortunately for us, the binary format was well described (HIPPI) and programs still existed (and the platform to run them - VAX) at the time of the retrieval (pre-Y2K, after which many platforms were discontinued). We were in all cases able to recover the data (soundings) from those tapes and import them to CARIS - it could have been any GIS with a generic data parser. That is, one where you define the format and the content of the input fields (create a map from input to GIS format). The biggest difficulty was in recovering the data off the 9-track tapes, which had to be sent to a private company in those cases where both A and B back-up tapes had bad blocks - there was a production run of these tapes with manufacturers flaws.

An additional problem we discovered, is that the data that was archived was not in fact always the final form that was used to generate the plot files that created the field sheet plot. None of these plot files, nor the programs nor platforms on which they ran exist today. However, in the

majority of cases we have recovered vast amounts of correct digital soundings that would otherwise have had to be digitized, with a subsequent loss of positioning accuracy.

I guess one lesson to learn is - KISS. ASCII is very transportable and for soundings, as long as we know the format (one can usually figure it out just by looking at it) it's easy to read into any GIS and plot soundings by coordinates. Doesn't matter too much after that whether the font or point size is correct - it's the underlying data that's important.

Another lesson we have learned, though, is keep at least two back-ups and keep them current. These back-ups were in fact the second set since the original data archive - Kal Czotter took all the original tapes and rolled the data onto newer media that could be read by our (then) current machines. Had that not happened, who knows whether we would have recovered any of it.

Regards,

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