## Ode to Celestial Navigation

A tragic tale I do confess
I put my faith in GPS
Then one day screen went black
I had no way of coming back

Recalling then in my despair

I heard the tale of St Hilaire

Who when he knew where he was not

Could figure quickly where he'd got

That's it I cried I am not done I'll use the Moon & Stars & Sun Like men of old I'll find my way It's history will save the day!

Remember back in '92 Columbus sailed the ocean blue He missed the east, but don't be mad The latitude is all he had

Old Harrison was a crafty dude He helped us find our longitude If Shovell had that H4 clock He might have missed the Scilly rock

Of course we can't forget Neville, The almanac we're using still So sailors then could find their path He made the scholars check their math Newton, Lecky, Meyer, Moore Nobles in Celestial Lore The universe in endless motion Guiding us upon the ocean

Inspired thus to find my way....
I've Bowditch here to save the day...
Ok...he borrowed much from Moore
But all is fair in love and war

Here within this volume bound The key to find your way around If of course you can unwind The workings of Nathaniel's mind

Read too much this epic tome You're ready for a happy home But if you somehow find it clear You might find a course to steer

Our sextant mirrors do reflect, A little error we correct On or off the arc we get Our index error then is set

With sextant clutched within our grip....
With height of eye we find the dip...
Next of course there is refraction
Bending light and its reaction

Then with altitude we're done
At least with planets star or sun
But for the moon we can't relax
There's horizontal parallax

Now of course we must relate
Our sight to what we calculate
The solution here you see in full
Is calculation spherical?

With almanac and tables too
And cosine laws to see it through.
If we split to angles that are right.
Short tables solve our sextant sight.

With two oh eight or two four nine I can create a Sumner line Poor Captain found the English coast... Then CNAV turned his brain to toast?

With GP of the body found (Transfer the zenith to the ground) Then I can pick an AP spot We may be there or maybe not.

Finish up with pole to guide
The local hour angle wide
Of course to find this you must know
If Greenwich Time is fast or slow

Three great circles now combined A triangle is thus refined A smaller circle is defined Which of course we call a line

No real problem here you see Preserving pure geometry Approximation is ok... The tiny segment saves the day

It shows an azimuth from me And altitude above the sea From sextant sight we find our way That is toward or away

Thus ends here my tale of woe Of how to figure where to go... A study of the sky in motion Charting me upon the ocean.

With sextant pointed to the sky
And scholars that could make me cry
With mathematics in profusion
At last I reach my sad conclusion

I figured out I can't be lost
Alone upon the ocean tossed
It's home that's lost, I now do fear
But I'm certain that I am right here.....

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