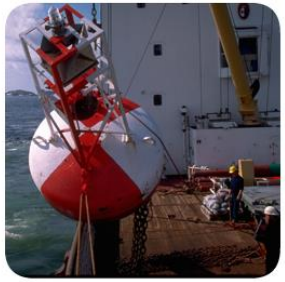
Fisheries and Oceans Canada | Pêches et Océans Canada

Canadian Coast Guard | Garde côtière canadienne

Methodology Update

Safety First, Service Always



Canada

30 Years is a long time…

Item	1989	2015
GPS	8 satellites	31 US satellites
Consumer GPS Cost	$3000	$350 (maps included)
Homes with Computers	32%	84% (2012)
Cost of Gasoline	$35 a barrel	$50 a barrel (note high was $137 a barrel)
Minimum Wage	$5.50	$10.50

Add to all this an improvement in computer speed and capabilities of about 20% a year since 1978 it makes sense to use computers more in design and review.

Key Changes

- Modernization of safety benchmarks through the NRIM application
- Modernization of Radial Error / Positional Uncertainty.
- Redefined user categories

Notes: Electronic chart errors average approximate 1.5mm at chart scale for official charts and is reduced to 1mm for ECDIS
GPS average error is approximately 25m whereas DGPS is 5m

This value will have to be re-evaluated as the majority of charts are updated as CHS is still adjusting to the shift between relative accuracy to exact accuracy as the important factor to navigation.

Navigation Risk Identification Module

The Navigation Risk Identification Module(NRIM) provides:

- MDA
  - Heave and Pitch
  - Squat (deterministic only)
- Minimum Channel Width Straight and Turn
- Advance and Transfer
- Minimum Settle Up Distance

Positional Uncertainty

- Based on the equipment carried
- Traditional Radial Error (10% distance up to 5NM)
- Integrated Electronic
  - Marine Plotter GPS (1.5*scale)/1000+30
  - Marine Plotter DGPS (1.5*scale)/1000+10
  - ECDIS GPS (1*scale)/1000+30
  - ECDIS DGPS(1*scale)/1000+10

Redefined User Categories

- Long-Range Vessels
  - Will have integrated electronic Navigation at a minimum
- Short-Range Vessels
  - Should have integrated electronic Navigation, confirm through consultation
- Local Vessels
  - Will require traditional design, confirm through consultation

Questions?