ECDIS PRESENTATION

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SO. WHAT DOES THE MARINER REALLY WANT?

HE HAD BOUGHT A LARGE MAP REPRESENTING THE SEA WITHOUT THE LEAST VESTIGE OF LAND.

AND THE CREW WERE MUCH PLEASED WHEN THEY FOUND IT TO BE A MAP THEY COULD ALL UNDERSTAND.

LEWIS CARROLL 1832 - 1896

YES. A CHART WE CAN ALL UNDERSTAND!
EARLY CHARTS WERE MADE BY NAVIGATORS FOR OTHER NAVIGATORS
THEY INCREASINGLY INCLUDED FEATURES ESSENTIAL TO SAFE NAVIGATION AND BY THE 19TH CENTURY WERE MASTERPIECES OF FUNCTIONAL GRAPHIC DESIGN.
THE DETAIL PROVIDED ALL THE INFORMATION REQUIRED FOR SAFE NAVIGATION AND FREQUENTLY INCLUDED TOPOGRAPHICAL DRAWINGS
THE 20TH CENTURY SAW THE REMOVAL OF THE HATCHING ARTWORK AND THE INTRODUCTION OF COLOUR WHICH FURTHER CLARIFIED THE INFORMATION ESSENTIAL FOR SAFE NAVIGATION.
EVEN IN AREAS WHERE A VAST AMOUNT OF INFORMATION NEEDS TO BE DISPLAYED THE CLARITY OF THE CHART'S DESIGN MEANS THAT ALL ESSENTIAL NAVIGATIONAL INFORMATION IS READILY ACCESSIBLE FOR PASSAGE PLANNING
SO DOES ECDIS MEET THE NEED?
MY OWN EXPERIENCES AND THOSE OF WATCHKEEPERS THAT I HAVE ASKED ON ECDIS ONLY EQUIPPED VESSELS REVEALS MANY AREAS WHERE ECDIS FAILS TO PROVIDE THE NAVIGATOR WITH THE USER FRIENDLY INTERFACE OF THE PAPER CHART TO ENSURE SAFETY OF NAVIGATION!

A BOLD STATEMENT BUT ONE THAT REFLECTS THE FACT THAT WHILST THE PAPER CHART WAS DEVELOPED BY NAVIGATORS FOR NAVIGATORS, ECDIS HAS BEEN LARGELY PRODUCED BY TECHNICIANS AND COMPUTER ENGINEERS WORKING FOR MANUFACTURERS!
THE ENC UNDERPINNING ECDIS IS A REMARKABLE DEVELOPMENT THAT CONTAINS ALL THE INFORMATION REQUIRED BY THE NAVIGATOR

BUT!!
AS ERIC MORECOMBE SAID TO THE EXPERT ANDRE PREVIN:

"I am playing all the right notes, but not necessarily the right order".
• ECDIS DOESN’T PROVIDE ALL THE INFORMATION REQUIRED BY THE NAVIGATOR IN THE RIGHT ORDER!

• OVER 30 DIFFERENT MANUFACTURERS NOW PROVIDE EDCIS UNITS TO DISPLAY THE ENC

• THE SMALL SCREEN SIZE RENDERS USING THE FULL INFORMATION DISPLAY IMPractical

• ALL MANUFACTURERS HAVE DIFFERENT OPERATING MENUS

• EVEN UNITS FROM THE SAME MANUFACTURERS HAVE DIFFERENT MENUS AS FEEDBACK FROM USERS RESULTS IN CHANGES

• ACCESSING RELEVANT INFORMATION CAN BE TIME CONSUMING AND FIDDLY
MANY OF THE EXISTING PROBLEMS WILL BE REMOVED AS FEEDBACK FROM USERS RESULTS IN SOFTWARE UPGRADES.

BUT THERE ARE CURRENTLY STILL MANY ECDIS PROBLEMS THAT HAVE THE POTENTIAL TO ERODE SAFETY!

THE FOLLOWING SLIDES HIGHLIGHT A FEW OF THE CHARTING ANOMALIES THAT I HAVE ENCOUNTERED.
THE PAPER CHART
AN ECDIS DISPLAY OF THE SAME AREA
PROHIBITED ANCHORAGE? LIGHT SECTORS? ANCHORAGE NAMES?
ERRONEOUS LAYER INFORMATION!

NOTE THE POSITION OF THE PRINCES 8 BUOY
ZOOMING IN BRINGS A NEW LAYER AND THE BUOY HAS MOVED?
SAME SHIP. THE MASTER SHOWED ME THE MAAS CENTRE BUOY
ZOOMING IN. NOT ONLY HAS IT MOVED, IT HAS ALSO CHANGED CHARACTERISTICS!!

THIS VESSEL HAS NO PAPER CHARTS. THE MASTER HAD OBVIOUSLY REPORTED THE PROBLEM BUT THE SERVICE ENGINEER HADN’T BEEN ABLE TO RESOLVE IT! ANOTHER ISSUE TO BE ADDRESSED?
ANOTHER EXAMPLE OF ENC ANOMALY
ZOOMING IN THE RANGE, THE WHOLE BANK INFORMATION CHANGES WITH A STRANGE CUT OFF!
THE PICK REPORT

TO SAVE OVER CLUTTERING THE ECDIS MUCH ESSENTIAL INFORMATION SUCH AS PRECAUTIONARY AREA INFORMATION CONTAINED IN NOTES ON THE PAPER CHART IS ACCESSED BY THE PICK REPORT.

THE PICK REPORT IS A FRUSTRATING AND INEFFICIENT PROCESS LIKELY TO CAUSE THE NAVIGATOR TO LOSE THE WILL TO LIVE AND POSSIBLY TO SKIP OVER IT.
LONDON GATEWAY: 
THE RASTER CHART DISPLAY. ALL RELEVANT INFORMATION IS CLEARLY DISPLAYED.
HERE’S THE VIEW FROM THE BRIDGE
SO WHAT DOES THE ECDIS TELL US?

NOTHING, SO WE NEED TO CLICK ON A FEW OF THESE!!!!!
LET’S SEE WHAT CLICKING ON THE WORKS (!) GIVES US. WE NEED INFORMATION ON CAUTIONS SO SCROLLING THROUGH THE MENU OPTIONS

VESSEL REPORTING? A NEW ONE FOR ME!
DETAILS ARE MISSING?
TEXT INFO: MOORINGS. WELL YES THERE WERE A FEW BEFORE IT BECAME A PENINSULAR!

NOTE THE OTHER MENU OPTIONS ABOVE THE CAUTION LIST. ARE THEY PRIORITISED FOR PRACTICAL NAVIGATION?
AND THE NEXT!

DESIGNATED ANCHORAGE AREA? WRONG!! THERE NEVER WAS AN ANCHORAGE THERE. RATHER ALARMING!
AND THE NEXT

STILL NOT WHAT WE WANT TO KNOW!
STILL AWAKE?

DETAILS ARE MISSING AGAIN??
AT LAST!

THE FINAL OPTION PROVIDES US WITH THE INFORMATION THAT WE ARE LOOKING FOR.
THE ABOVE EXAMPLE IS JUST ABOUT 1 MILE OF THE PASSAGE.

A NORMAL SHORT SEA PASSAGE WILL REQUIRE HUNDREDS OF SUCH INTERROGATIONS!

HOW MANY NAVIGATORS WILL HAVE THE TIME OR INCLINATION TO EXAMINE EVERY EXCLAMATION MARK ALERT ON THEIR PASSAGE PLAN?
THIS PICK REPORT FACTOR ISN’T JUST A NUISANCE BUT CAN HAVE SERIOUS CONSEQUENCES FOR THE NAVIGATOR.

ON THE THAMES VESSELS UP TO 90M LOA AREN’T SUBJECT TO COMPULSORY PILOTAGE FOR THE OUTER ESTUARY. MANY ARRIVE EARLY AND ARE REQUESTED TO ANCHOR. THE DESIGNATED ANCHORAGE FOR THESE VESSELS IS USUALLY THE MOUSE ANCHORAGE.

IF THE SHIP HASN’T VISITED THE PORT BEFORE, HOW WILL THE NAVIGATOR FIND IT?
ON THE PAPER CHART

QUITE EASY TO FIND
BUT WHERE IS IT ON THE ECDIS?

THE ANCHORAGE IS VERY
INDISTINCT AND NOT NAMED
ZOOMING IN STILL DOESN’T REVEAL THE NAME SO WE HAVE TO FIND THE ANCHOR Symbol AND CLICK ON IT
LOGICALLY THE NAME OF THE ANCHORAGE SHOULD BE AT THE TOP OF THE LIST SO CLICKING ON THE 1ST ITEM “GENERAL INFO” LOOKS PROMISING!
NOT MUCH TO HELP US THERE!
THE INFORMATION IS WITHIN THE 11TH MENU ITEM “ANCHORAGE AREA”
VOILA!
AND NOW WE KNOW WHAT IT’S CALLED...

**Anchorage area (ACHARE), area**

- **Highlight**
- **Category of anchorage (CATACH)**: 1 (unrestricted anchor)
- **Object name (OBJNAM)**: Mouse Anchorage
- **Scale minimum (SCAMIN)**: 44999

**Harbour area (administrative) (HRBARE), area**

- **Highlight**
- **Object name (OBJNAM)**: Port of London Authority
- **Scale minimum (SCAMIN)**: 59999
- **Coverage (M COVR)**: area

AND WHERE IT IS...
WE CAN HIGHLIGHT IT!
THIS MAY SEEM LIKE A WHINGE FROM AN OLD DINOSAUR BUT IT HAS HAD SOME SERIOUS CONSEQUENCES FOR COMPETENT SHIPS’ MASTERS ON ECDIS ONLY VESSELS.

ALL VESSELS ENTERING THE LONDON DISTRICT HAVE TO DECLARE COMPLIANCE WITH THE PLA’S NAVIGATIONAL SAFETY REQUIREMENTS WHICH INCLUDES UP TO DATE CHARTS AND A PASSAGE PLAN

THERE HAVE BEEN SOME CASES WHERE MASTERS HAVE DECLARED COMPLIANCE BUT WHEN REQUESTED TO ANCHOR IN THE MOUSE ANCHORAGE THROW DOUBT ON THEIR COMPLIANCE STATEMENT BY ASKING WHERE THE ANCHORAGE IS AND FOR THE EXACT POSITION.
THERE ARE SEVERAL SMALL SHIP ANCHORAGES ON THE THAMES

THEY ARE CLEARLY MARKED & EASILY IDENTIFIED ON THE PAPER / RASTER CHART
ON THE ECDIS THEY ARE THERE BUT UNNAMED SO CAN ONLY BE IDENTIFIED BY CLICKING ON EACH ANCHOR SYMBOL!
THE NAVIGATOR OF AN ECDIS ONLY VESSEL IS THEREFORE TAKING THE MOST SENSIBLE OPTION BY REQUESTING THE POSITION OF THE ANCHORAGE FROM VTS.

AN INTERESTING POINT IS RAISED BY THE USE OF ECDIS BY SOME NAVIGATORS.

THE PROVISION OF RASTER CHARTS ALONG WITH THE OFFICIAL VECTOR CHARTS SEEMS TO BE INCREASINGLY COMMON. THIS IS POPULAR WITH MANY NAVIGATORS WHO, FOR THE AFOREMENTIONED REASONS, LIKE TO UNDERTAKE INITIAL PASSAGE PLANNING ON THE FAMILIAR RASTER DISPLAY RATHER THAN THE VECTOR CHART.
SO. AM I BEING ALARMIST ABOUT ALL THESE FACTORS?
HERE IS A STRANGE PHENOMENA WHERE SOME DEPTHS ARE SHOWN BUT SHALOWER DEPTHS ARE MISSING!

I RECENTLY PILOTED A MEDIUM SIZED TANKER WITH A DRAFT OF 7.5M WITH A SIMILAR ECDIS ANOMALY. FOR SOME REASON THE 2ND MATE HAD PLOTTED THE TRACK TO PASS TO THE WEST OF THE EAST MARGATE BUOY!
I CALLED THE MASTER OVER AND SUGGESTED THAT HE ZOOM IN ON THE RANGE TO BRING UP THE FULL DEPTH DETAIL.

I DON’T KNOW WHAT HAPPENED TO THE 2ND MATE WHEN HE GOT UP!
FINALLY

GPS ERROR
PASSING DOWN THE SEA REACH CHANNEL WITH THE SR2 BUOY ON THE PORT SIDE
THE RADAR PICTURE CONFIRMS THE VISUAL OBSERVATION
THE ECDIS IS GIVING THE POSITION ON THE WRONG SIDE OF THE CHANNEL WITH THE SR2 BUOY FINE ON THE STARBOARD BOW
CHECKING THE SECOND ECDIS IN BOTH RASTER & VECTOR MODES REVEALED THE SAME ERROR

WHAT TRACK WOULD A VETTING INSPECTOR CHECK?
NORMALITY WAS RESTORED AFTER PASSING SR1 BUT THERE WERE NO ALARMS TO INDICATE THAT THE GPS WAS IN ERROR

ONE OF MY COLLEAGUES HAS RECENTLY EXPERIENCED EXACTLY THE SAME ERROR IN THIS AREA. AGAIN, NO ALARMS AND IN MY OPINION THIS CONFIRMS THE NEED FOR AN INDEPENDENT BACK UP SYSTEM FOR GPS
ANY QUESTIONS?