KISH P&I CLUB

KISH P & I LOSS PREVENTION CIRCULAR KPI-LP-129-2013 (Trusting the Data Available in a Passage Planning)

►Task of Passage Planning:

Passage planning is a necessary and demanding task, but it is obvious that a good plan both simplifies and lessens the risks of the associated watch-keeping duties. However, passage planning must take into account the reliability of all the data used for the task. In 'IT-speak' we tend to call this data integrity; a concept which is equally important when watch-keeping decisions are being made.

Intelligence from such sources as charts, sailing directions, maritime safety information, meteorological data and lists of radio signals all require just as much data integrity wariness by the user as the data coming from equipment such as the Global Navigation Satellite System (GNSS), radars, and gyros.

In short, data integrity incorporates four concepts: validity, plausibility, comparison and latency. These concepts are examined in fuller detail below:

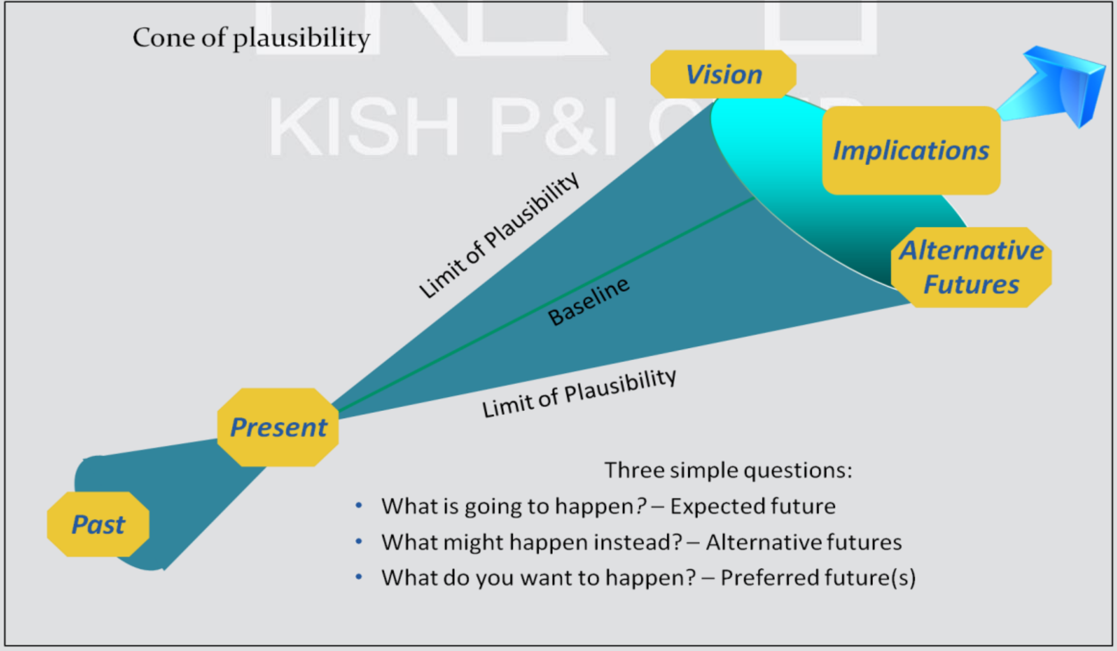
1-Validity: trusted sources and expected accuracy

Many aspects come into play when assessing the validity of data. For instance, does it come from a competent source, such as a national hydrographic office or a type approved GPS? Is the use of the data valid for the actual dates and time plan of the voyage? What is the expected accuracy of the particular data? Is there a fault being indicated when data is being displayed on a screen, which may invalidate it?

2-Plausibility: the art of double checking

Data may appear to be valid, but is it plausible? For instance, the light is indicated as flashing once every 200 seconds but that is unlikely, so could it be an error? Any interpretation must be cautiously made, as should be using any associated information.

It may be an indication that the data from this particular object has escaped a proper check. Any data that appears to be outside normal limits should be subject to further inspection and caution.

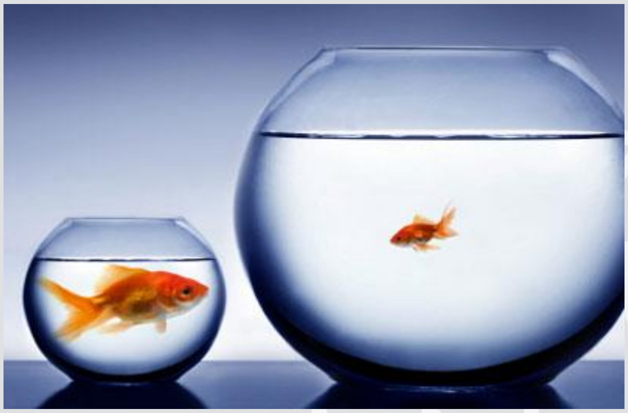


Three simple questions:

- What is going to happen? – Expected future
- What might happen instead? – Alternative futures
- What do you want to happen? – Preferred future(s)

3-Comparison: unearthing inconsistencies

By comparing data from different sources for compatibility, we can be far more certain of the validity of the data. We can confidently assert, for example, that the ENC data about a particular beacon is consistent with that contained within a particular international List of Lights. Therefore, the GNSS indicated position is consistent with the visual bearing measured to that particular mark. Any inconsistencies that are found highlight the need for further investigation and/or navigational care.



4-Latency: taking timing into account

Latency is the time interval between the instant the data was captured and when it is subsequently used; something that must be taken into account for all navigational tasks.

Latencies of many years are normally quite safe for most hydrographic data, although precise positioning may require a maximum of just a few seconds of latency. Marine Safety Information (MSI) data may have taken some weeks to be promulgated and even NAVTEX information concerning a new situation may have taken a few hours to have been broadcast. An ARPA can take a minute or more to indicate that a tracked vessel has changed course.

► E-Navigation:

E-Navigation gives the possibility of all data being used for marine navigation to be electronically marked with integrity information, whatever the data source. This would ease both human instigated and automatic checks to help ensure its appropriate use. For instance, it could include such items as accuracy limitations, original source of data and time/date validity information.

For any data it should be easy to select the option to view such information. Automatic indications could be given if user preset limits concerning data integrity were encountered. As a simple example, the user could perhaps set a visible indication on the chart display if the hydrographic survey of an area was particularly old.

► Summary:

To sum up, an efficient advice would be to always treat data with appropriate caution, not least when passage planning. Apply the concepts of validity, plausibility, comparison and latency to help ensure that existing risks are minimized.