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STATEMENT REGARDING SKIPPER EQUIPMENT FOR POLAR CLASS

This statement supersedes 'Statement Ice pressure' dated 15.09.2020

Background:

The IMO Polar code, valid from January 2017, states that "where equipment required by SOLAS chapter V or this chapter have sensors that project below the hull, such sensors shall be protected against ice" (Polar Code 9.3.2.1.4). This means that if the sensors are mounted flush to the hull, the Polar Code does not require protection against ice. Still, we know that many of our customers require ice protection even if the Polar Code does not.

SKIPPER delivers ice plate for tank mounting, and we also have a drawing for ice guards.
Our experience with the use of ice plate in front of such sensors is that this may sometimes cause lower signal and challenges due to e.g. air coming in between sensor surface and ice plate. So, we decided to perform pressure test on two of our sensors (DL2S speed log sensor and ETS50200 Echo sounder transducer), to see if they were able to resist a simulated ice load without further protection.

Testing:

Using some reference pressure figures from a BV polar class PC1 ship built in Norway as a guideline of what is required, SKIPPER tested its equipment to destruction, and found the values were suitable for this typical mounting. The exact figures for design pressure must be calculated for each ship, and the pressures below, can be used to check that the mountings will meet the customer specification. In our opinion, the figures we used are applicable for most polar class ships. The Ice tank solutions were also tested, to much higher levels than those below, with no detrimental effect. Our equipment is approved to be mounted outside (below) the ice belt areas, hence the design pressure applicable is for 'non-bow' area.

The parts were tested and with a constant pressure over the whole sensor and were found to work above the following pressures.

Part number	Working at >4Mpa >4000 kN/m2	Working at >11Mpa >11000 kN/m2	Point of no return
ETS50200-xx	Pass	Pass	>20Mpa
DL2S-xx	Pass	Fail	>8Mpa

Conclusion:

Based on the above, we have the following recommendations:

- Mount the sensors flush with the hull.
- If use of transducer tank, tank with ice plate may be used (for other transducers than ETS50200)
- SKIPPER recommends the use of ice guards where possible to reduce the risk of impact of sharp objects, which are not tested in these tests. We can provide drawings.
- **The ETS50200 all types, both for tank and valve mounting and DL2S all types can be used without further ice protection, if they are flush to the hull.**

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