

HABETaS Testing in Kiel, October 2012

After analysing the results of the successful ESCAPEX in May 2012 the Royal Netherland Navy came to the conclusion that further enhancement of the HABETaS system was possible. Together with the stakeholders in the project, AMITS, designer of the system, Texcon, producer of the escape suits, and HDW, responsible for engineering and integration of the system in the submarines, a new test protocol was developed.

The goals of the test were:

1. Compare the performance of two different Total HIS Valves (THV) from different production batches.
2. Reduce the air consumption during flooding by 10 %





HDW test bed in Kiel

So, the short version of the test: a success!

The conclusion to the first goal of this test week, evaluate / compare the behavior of the HDW owned test valve, THV-05-001 against a randomly selected series THV of the RNLN (in this case, THV-05-007, originally mounted on board Hr Ms Bruinvis) must be that there is no significant difference between the two valves.

To our second goal, indeed we were able to reduce the air consumption. The water entering the hood during the flooding phase was during all tests with the modified economizer ring B-B and the Basic Test Kit (BTK) setting at 280 l/min, at no moment higher than 150 mm and was reduced during the compression phase between 0 – 50 mm, so a very good result.

Also we noticed that even with a reduced BTK setting of 280 l/min and a modified economizer ring B-B, the hood stayed fully inflated with a consistent overpressure during the compression phase. Compared to the original setting of the BTK at 500 l/min and no modified economizer ring, the air flow through the stole and hood is indeed noticeably lower and the inflation of the stool and hood is clearly slower, but this did not cause any problems during the tests, as mentioned above.

An escapee will “hear” the air flowing and will experience air “flowing” around his head and face. This gives the escapee a “trusting” feeling that the system is working. Technically we could reduce the air consumption further, but for “human factor” reasons, we must and will not do that.



The flow test team

On the last day of the test week, extra runs were performed to make sure that if for whatever reason the BTK is misreading, a THV is not performing optimally or a suit behaves slightly different, the system has a margin on the "downside" and found that we indeed have that margin!

Therefore the decision is made during the evaluation of this test week to install on all the THV/SCV of the RNLN a modified economizer ring type B-B and a BTK setting of 280 l/min with an allowable offset of 20 l/min plus and 0 l/min down.