Over the last 5 years we have travelled 15000 NM with Monara, and along the way we have come across all kinds of hick ups, but I dare say that this one has baffled me most.

Monara has two 6-cilinder Gardner engines, and through 4.7m long 3" diameter bronze propellor shafts, both propellors are driven.

When we broke our port propellor shaft, only 12 hours after we left our Antwerp berth and heading for Kirkwall, we did notice that the housing of the stuffing box was hot. After releasing some pressure on the packing material, and allowing water to drip in, the stuffing box did cool down.

We could safely turn back on our starboard engine, secured the broken shaft against slipping out, and were

lucky to find the drydock at Scheepswerf De Klerk in Walsoorden available within days.

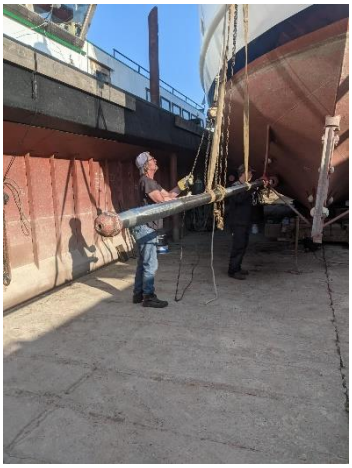
After loosening the flange connection to the gear box and removing the stuffing box and the grease cord, we were unable to move the shaft back far enough, in order to release the locking nut in the flange. Something in the shaft tunnel was preventing the shaft from moving. By cutting some slices out, we could get the broken part out.

The shaft was snapped off just aft of the stuffing box and the cooling water injector. It showed pressure cracks and deformations as a result of extreme torque, and the broken end was shaped like a mushroom.

Once the expanded parts were removed, the shaft came out relatively easy. Apart from the mushroom shaped deformations where it broke, the shaft showed no marks of extreme wear at the bearings.

An insurance expert who came along, noticed that the seawater cooling to the shaft was blocked. We assume that the as a result of lack of cooling, the shaft overheated, expanded or deformed, and blocked itself in the shaft tunnel.

On a short notice the shipyard did find an 80mm diameter stainless steel shaft of 6m long, which was machined to size for us, and special 30 cm long Thordon bearings are being made for the end of shaft tunnel and shaft support.



The bearings are machined to 0.05mm tolerance, to both fit the housing and support the shaft. By shrinking them with dry ice (-70°C), they slide in place easily. Over the next month, they will adjust by swelling in the sea water.

The shaft is finally installed, carefully aligned and connected to the gear box, our prop is mounted and a new 22mm gland packing is put in place.

Monara is ready for testing, once the dock is flooded…