Last month we reported on Euro Demolition's massively-modified Cat 5110B excavator flexing its metal muscles for the first time on a local dredging job. Once the project was completed it was envisaged that the 250-tonne monster would be disassembled and shipped to an underwater demolition project thousands of miles away.

As it turned out its first demolition job entailed a 650-mile drive south of the machine's home at Beverwijk near Amsterdam, to cut up a stranded freighter in the Quiberon peninsula in the Bay of Biscay, France.

Called the *TK Bremen*, and owned by Blue Atlantic Shipping, the 109-metre vessel hit the international headlines briefly last December, when it ran aground on the Atlantic Coast during gale force winds and heavy seas.

Although the skipper decided to drop anchor and ride out the worst of the storm before continuing the journey to the UK, the conditions were so severe that the anchor dragged. Bad weather prevented the intervention of a tug boat from nearby Lorient Port, leaving the crew of the *TK Bremen* to struggle to reach a more sheltered area.

Their efforts were in vain because two hours later it ran aground. Fortunately, the Maltese-flag ship was not carrying any cargo and the 19-strong crew were all air-lifted to safety. There was also another stroke of good luck because the ship was dumped at the edge of the sandy Kerminihy beach not far from the village of Erdeven. Just a couple of miles either side and the vessel would have been at the mercy of jagged rocks.

Even so, the vessel still suffered severe damage to the hull, allowing some of the 180 tonnes of fuel oil and 40 tonnes of diesel to spill into the ocean. French authorities worked round the clock to clean up the mess and limit the pollution of a beach, which is designated as a natural park. The area is not just known for its natural beauty but also the rare plants found in the sand dunes.

Experts soon determined that the 2000-tonne structure was so badly damaged that it could have broken up if they attempted to refloat it and Dutch specialist Euro Demolition duly won the contract to cut it up.

This Page: Euro Demolition won the contract to cut up the stricken cargo vessel* TK Bremen. *They have a month to remove the 2000-tonne structure from the beach.

PART TWO

BEACH JOB

Steven Vale reports from France on the fleet of machinery, including Euro Demolition's latest monster, at work on the cargo vessel *TK Bremen*.

The *TK Bremen* is a strange job. The Dutch company specialises in both onshore and offshore demolition. The French job falls midway between the two. Quite literally at the water's edge, Euro Demo has calculated it will take about a month to complete.

The technical spec of the big Cat 5110B was covered in our last issue. To briefly recap, Euro Demolition has converted three of these former mining excavators to extreme demolition machines. One enjoys the title as the world's tallest demolition excavator, reaching to a dizzy height of 90 metres. The second hoists Mantovanibenne's 12-tonne CR100 concrete crusher and equally heavy SR1000 scrap shear with ease to 28 metres.

The company's third Cat 5110B really is in a league of its own; its hefty three-piece front end carries the same attachments as its 28m sister but to the 33m mark. For this French job its weapons armoury has been bolstered with a new and equally monstrous Italian-made Sato scrap shear. Supplied by Dutch-firm Dehaco, the nearly 17-tonne XSW120R is by all accounts the first example to enter service.

SITE VISIT

The site is crawling with security. Cordoned off from prying eyes by a temporary 5km-long fence, a strictly-controlled 300m exclusion zone is designed to keep unwanted pleasure craft at a safe distance. Despite – or because of – these measures, the site is frequently viewed from the air by helicopters and light aircraft.

There is not much change in the tide here. At high tide the water just manages to reach the landward side of the ship, and at low tide there is enough space to walk along the seaward side of the vessel, which is lying at a 15-degree angle at the water's edge. That said, the weather was particularly kind for this time of the year. A week prior to making a start on the wreck the weather was so bad that waves reportedly crashed right over the top of the deck.

Three days into the cutting phase of the demolition project, the bow of the stricken vessel and much of its forward hull had already been plundered by the big Cat. The French company Alzeo Environment was busy pumping out what they thought were the last of the unwanted fuels.

Inside the bridge and crew accommodation the last remaining door and window frames, ceilings and insulation materials were still being stripped. The crew left so hastily that cupboards were still full of clothing, and beds, mattresses and duvets, all have to be removed.

Numerous carbon dioxide bottles also needed to be carefully hoisted off the ship. Normally used as part of the automatic fire protection system, each one had to be accounted for. So too did all the barrels of grease and other lubricants, which all have to be carefully plucked from the wreck.

There is even a permanent asbestos expert on site. They were lucky because the vessel was refurbished a few years back when 90% of the asbestos was removed. Most of the remaining 1.5 tonnes was concealed as gaskets between pipes, which were all cut away before the big machines arrived on site.

The presence of so many people at work on the vessel meant the Dutch company's monstrous Cat 5110B was not allowed to do much cutting during the day, a frustrating time for the wrecking team. However, Euro Demolition supervisor Dirk Bos stresses safety comes first.

"Any attempts to rip chunks of metal out of the carcass with staff on board is considered too risky," he says. "The policy is to wait until everyone is off the ship."

For most of the day the big excavator was relegated to helping to cut up the huge chunks of scrap ripped away during the previous night or hoist a skip to the top of the bridge for material stripped from the interior.

Further delays were then encountered when more diesel oil was discovered in a compartment at the front of the exposed hull. Most of the fluids were pumped out of the vessel long before Euro's monster machines arrived, but the damage suffered when the vessel ran aground had obviously resulted in some of it flowing into other areas of the hull.

Normally when you open a tin can you know what to expect. However, in this case, when they peel back the metal layers they have no idea what they will come across. Euro's Volvo mini-excavator was called in to puncture the tank to allow the unwanted liquid to be pumped out into one of Alzéo Environment's vacuum tankers. To avoid further contamination of the immediate area, a trio of boats with oil containment systems patrol the waters.

FLEET FOCUS

The big Cat does all the heavy work, but it is not the only machine on site. For starters, it needs a steady pad to stand on, so a pair of contractor's excavators that normally work at a nearby quarry have been drafted in to help heap up the sand and lay the wooden base.

Other Euro Demolition excavators include an Etec 333. Although a good deal smaller than the Cat 5110B, it is just as special and believed to be the only one of its kind in the world. Capable of wielding a 3t attachment to a pin height of 23m, the zero-tailswing machine is based on a 26t Doosan DX255.

This specially modified DX255 features a hydraulically extending undercarriage made by another Dutch specialist – Beco – and a four-piece boom. Tipping the scales at 35t, the axles extend hydraulically to an outer width of 4.2m for extra stability, while the tracks were each extended by around 1m bringing the total length to 5.2m.

An extra oil tank is mounted to the top of the upper-structure. This provides the necessary extra oil needed for the boom and hydraulically extendable tracks. Other features include a tilting cab and a narrower 6.8t counterweight to ensure that the machine remains within the tracks when slewing. Even on the maximum track width of 4.2m, the rear end is able to swing a full 360 degrees without any part of the upper-structure protruding over the outer edge of the tracks.

Main Picture and Above (Three Pictures): Once the heavily modified Cat excavator was allowed to get into its stride, its 17-tonne Sato XSW120R scrap shear literally tore the vessel apart.

The huge metal chunks stripped from the wreckage are cut into manageable pieces by a Hitachi ZX470 with a 4.3-tonne scrap shear.

Fortunately, space is not an issue on the French beach, but the zero tailswing is a great feature for working in more confined areas. Weighing around 9t, the four-piece front-end equipment does not need to be removed for transport. In fact, the complete rig can be tracked on to a trailer and ready to transport within 30 minutes. On this job the excavator is ideally suited to hoisting skips up to the bridge, as it is to cleaning away the debris from the giant Cat excavator.

All scrap metal ripped from the wreck is piled up in front of a Hitachi ZX470 belonging to Dutch firm Scheepssloperij Nederland (Ship Demolition Netherlands). Working round the clock, the four-year-old excavator has plenty to do to keep pace, cutting the scrap into bite-size pieces. Coupled to another Dehaco-supplied scrap shear – a 4.3-tonne SH410R – a French contractor's Cat 324D loads one of the skips, which are taken off the beach by a Fendt tractor.

BACK TO WORK

For most of the following day the Hitachi ZX470 was again kept busy trying to reduce the size of the growing heap of scrap metal cut away from the *TK Bremen* during the nightshift. At sunset the team working within the vessel confirmed that the last of the interior trim had been removed. Preparations were made for a new pad to be built for the big Cat to make a start on the bridge that evening.

Before the day shift left, the 5110B's operator Koos Deen replenished the excavator's 1500-litre fuel tank. Unlike a production machine working in a quarry or mine, the excavator's engine does not consume quite as much diesel. Working flat out the excavator would burn an average of 100 litres an hour, almost draining the contents of the tank during a single 12-hour shift. The intermittent nature of this job means it uses 1000 litres every 24 hours.

Later that night the big Cat really got into its stride. The massive attachment tore huge chunks out of the structure, like a hungry vulture devouring a carcass. At the controls, Euro Demolition boss Ber Mak was clearly pushing the excavator to the limits, its rear end often just clear of the ground as he grabbed hold of another monster piece of scrap, ripping the structure apart as if it were made of paper – a truly awe-inspiring sight.

By the time the day shift arrived next morning the top half of the vessel was gone. But with interior stripping done, there was now nothing to stop this gang from continuing cutting up the wreck during the day. There was just one minor hold up: the discovery of a little bit more oil in another area of the hull. However, this was quickly sucked out leaving the huge excavator free to continue pulverising what was left of the vessel.

By the time this issue appears the job will most likely be finished, and Euro Demolition's machines packed up and trucked back to base for a check over. All that remains now is for French authorities to mop up any final traces of oil from the beach and remove the temporary perimeter fence.

With a bit of luck the beach will soon return to some sort of normality, possibly ready to receive tourists in time for Easter, but certainly before the busy summer holiday season.

Editor's comments

We would like to thank the team at Euro Demolition for help with access to the site, for which we are very grateful.

Main Picture and Above: This Etec 333 is another of Euro Demolition's one-of-a-kind machines. The zero-tailswing 35-tonner started life as a Doosan DX255.