



# Compliant Recycling of a Navy Tanker

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HMNZS Endeavour

After 30 years of service the single-hulled tanker HMNZS Endeavour was no longer IMO-compliant and the New Zealand Defence Force (NZDF) needed a disposal plan. Various options were investigated, but selling as an ongoing concern or sinking as a diving attraction were not feasible making responsible recycling the only practical option left.

NZDF started disposal planning in 2016 initially with an offer from an Australian ship recycling facility that required a substantial payment for dismantling of the vessel. Further research led to an offer of 100.000 USD from a major cash buyer for recycling and however, through attendance at the 2017 Ship Recycling Congress the NZDF made contact with GSR Services to assist in approaching the wider recycling market and supporting a compliant recycling programme. Economics played a very minor role for NZDF planning but notwithstanding it was still considered that a sound financial outcome could also be achieved.

The goal was simple - to achieve sustainable and environmentally compliant recycling. A Compliance Concept for evaluation of best practice, legal compliance and requirements for all stakeholders involved was prepared by GSR. Considered were Hong Kong Convention for Safe and Environmentally Sound Recycling of Ships (HKC), the Basel Convention on Transboundary Movement of Hazardous Wastes (BC) and past experiences gathered. HKC including related guidelines for technical and organizational aspects of the practical work while the BC was required by NZ for notification and prior written consent procedure. Based on these specific technical and organizational evaluation criteria for the Tender, selection and contracting processes were developed.

GSR Services developed the ship specific Inventory of Hazardous Materials (IHM, Part I) and assisted the NZDF in providing the required IHM Part II (hazardous wastes) and Part III (hazardous materials in stores). All documents were provided to Tender participants.

Participation was restricted to HKC-certified ship recycling facilities only who had to provide their certified Ship Recycling Facility Plan (SRFP), Ship Recycling Plan and agree to a number of additional requirements including strict monitoring and control scheme throughout the entire recycling process. Even though the Tender was advertised globally, only eleven recyclers from India actually participated.

Based on the developed criteria four ship recyclers were shortlisted. On-site audits were carried out by a team from the NZDF guided by GSR Services and its local partner GSR



Sentinels. After a detailed evaluation of the shortlisted yards and final selection, the sale contract was signed on 12 January 2018 between the NZDF and Ace Ship Recycling from Singapore who represented the chosen ship recycling company JRD Industries<sup>1</sup>.

NZDF was highly selective throughout the entire process and specific performance aspects were contained in the sales contract including a substantial bond to ensure compliance. Additionally JRD Industries as a good will offer offered to refurbish and donate furniture and fittings from the ship to Alang community agencies including the local school, medical facility and health clinic.



Photo: JRD Industries in Alang, India



Endeavour after arrival, April 27<sup>th</sup> 2018

All parties then cooperated in obtaining the required information and certifications required under BC for evaluation by Environmental Protection Agency (NZ-EPA) of New Zealand. The prior written consent procedure under BC was then started by NZ-EPA in co-ordination with Indian Authorities. Approval was subsequently granted for the export of Endeavour to India with conditions that no crossing of other national territories was permitted for the final voyage, full tracking of all materials leaving the yard, reporting to NZ-EPA about the recycling processes and waste disposal and an obligation to return the ship back to New Zealand in case it was rejected by India. It is believed that ex- HMNZS Endeavour is the first ship to be imported and recycled in full compliance with BC procedures in India.

After familiarization of buyers' crew with the ship, HMNZS Endeavour was handed over at the NZDF Devonport Naval Base in Auckland, New Zealand and departed on March 24<sup>th</sup>, 2018. The buyer was required to change the flag of the ship due to requirements of the insurer for the last voyage<sup>2</sup> and re-name it to MT Endeavour as it was no longer a Royal New Zealand Navy Vessel. Notwithstanding the change of ownership and flag the NZ Government still tracked MT Endeavour all the way the agreed destination and supervised its landing at JRD Industries in Alang as a condition of the sale.

The entire recycling was supervised by GSR Services from Germany and GSR Sentinels from India with additional time lapse recordings of the process arranged at the request of the NZDF. All aspects of HKC, BC, compliance concept, ship recycling plan, ship recycling facility plan, and the additionally agreed conditions were within the scope. NZDF also routinely visited JRD Industries during the recycling process until its conclusion on July 25<sup>th</sup> 2018 and conducted a formal audit of the outcomes. It was pleasing that through JRD's safety system and

<sup>1</sup> For buying end of life ships in the international market many ship recyclers have to make use of cash buyers and brokers who are managing the various related aspects of such trades. Cash buyers can act as service providers to shipowners and ship recyclers. Cash buyers who act as speculators and sell for top-dollar are often not acting in a responsible manner and support dangerous recycling practices. A careful distinction on the role of cash buyers and their attitudes is required.

<sup>2</sup> It is a common requirement of insurers to register ships on last voyage under a specific flag. This practice is misinterpreted as circumventing legal requirements or attempts of buyers to make ships disappear. This might be the case for some ships, but re-flagging is not per se done for utilizing legal loop-holes or acting irresponsibly.



management no accidents occurred during the process and short halting of recycling was only ordered twice due to minor safety issues.

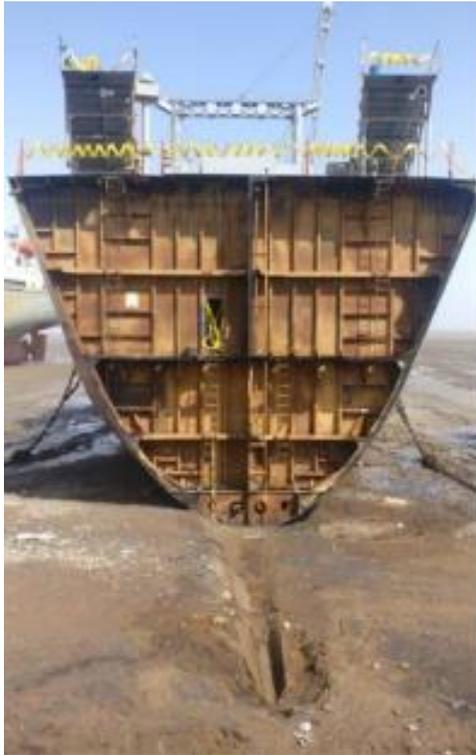


Photo: Ships' "impact" on intertidal zone



Photo: Slag Collection System attached to hull

Additionally a new system for catching falling slag and paint chips<sup>3</sup> during primary cutting in the intertidal zone was tested and a time lapse camera has recorded the recycling process ([click here](#)).

It has to be recognized that the ship recycling industry in India delivers huge quantities of ships materials for reuse and recycling to a network of traders. They employ thousands of workers and it is a billion dollar business that effective material reuse and recycling. The hinterland markets can be distinguished into the following categories where the various items coming from the ships are sold to:

**Industry:** Engines, generators, Valves, Pipes, Bearings, Tanks, Machinery.

**Marine:** Life Boats & Rafts, Ropes, Navigational equipment, Marine spares & equipment

**Domestic:** Furniture, Mattresses, Curtains, Wood, Appliances, Insulation

**Commercial:** Kitchen, Laundry & Medical Room Equipment, Cinema and Fitness Equipment



Photo: trader for kitchen appliances in Alang

<sup>3</sup> Patented system, patent holder: GSR Services GmbH, Germany



Due to the outstanding performance of all parties no accident or incident occurred and not a single block fell into the intertidal zone. A remarkable 98.8% of the ship was either reused (2.190 tons, 60.0%) or recycled (1.416 tons, 38.8%). Only very little waste had to be landfilled (44 tons, 1.2%).

The direct reuse of steel saved 1.15 million kWhs of electricity compared to re-smelting in arc furnaces, 250.000 m<sup>3</sup> of CO<sub>2</sub> emission and 1.000 tons of waste avoided compared to other recycling destinations which have a much lower reuse and recycling ratio.

All parties involved have concluded that responsible ship recycling and Basel compliance is achievable with a bit of extra effort, and it is more sustainable in India than in other regions. Additionally it comes at a very low cost, it's just a matter of the experts involved.

#### Appreciation:

GSR Services is thankful that it had given the great opportunity by NZDF to proof and apply its experience and expertise by supporting the planning and conduction of responsible recycling of HMNZS Endeavor. It was an interesting project with exceptional results and proof of outstanding quality with beneficial outcomes for all dedicated professionals involved.

GSR is looking forward to assisting ship owners to follow this good example and provide assistance wherever needed for compliance with Honk Kong Convention, EU-Ship Recycling Regulation and Basel Convention.

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