

The Persistence of SS France:

Her Unmaking at the Alang Shipbreaking Yard in India

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Do not call me “France” ever again. France she let me down. Do not call me “France” ever again. This is my last wish. I was a gigantic boat able to cross a thousand years. I was a giant, I was almost as strong as the ocean. I was a gigantic boat. I took away thousands of lovers. I was France. What’s left of it? A mooring for cormorants. Do not call me again “France” ever again. France she let me down. Do not call me “France” ever again. That is my last wish.

Le France song lyrics by Michel Sardou, 1975¹

When seemingly invincible technologies break down, it is a source not only of inconvenience but also of great frustration to their respective users.² Trips to repair

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- 1 Paroles.net: Lyrics of the song Le France by Michel Sardou, <https://www.paroles.net/michel-sardou/paroles-le-france> (accessed 24.03.2019).
 - 2 Early iterations of this research were presented at the “Histories of Technology’s Persistence: Repair, Reuse and Disposal” workshop at the Luxembourg Centre for Contemporary and Digital History (C²DH), and the “Life Cycle of Container Ships. Global Ethnographic Explorations into Maritime Working Lives” opening workshop at the Norwegian Maritime Museum. I would like to sincerely thank Heike Weber and Stefan Krebs for their editorial enthusiasm and engaged comments that helped me clarify my thoughts. I also wish to thank my supervisor Simone Müller and the Hazardous Travels team at the Rachel Carson Center for Environment and Society for going through earlier drafts of the paper and for their continued support, advice and inspira-

professionals follow, with a hope that objects will be fixed.³ But what if the repair process fails to restore non-functional machinery to an operational state, or if repair costs grow out of all proportion? What happens then? It should come as no surprise that most technologies do eventually wear out or become dysfunctional for a variety of political, economic, social or cultural reasons, and are then either abandoned to the process of natural degradation or transferred to disposal sites for recycling.

Seafaring vessels are the biggest of all man-made moving objects. The average commercial lifespan of these vessels is 25 to 30 years, after which time maintaining them effectively and operating them profitably becomes uneconomical for their owners. The operational period can also be shortened by a sudden economic or financial crisis. The reasons for dismantling a ship, therefore, are many and varied. Age is one of the most frequent, and overcapacity in tonnage, changing regulations concerning shipbuilding and operations, insurance constraints are some of the other reasons why ships are sold for scrapping.

In *The Cultural Biography of Things*, Igor Kopytoff argues that “biographies of things can make salient what might otherwise may remain obscure”.⁴ Kopytoff proposes a biographical approach as a means of understanding the agency of objects that move through space and time, quite similarly to the biographies of people. “In doing the biography of a thing”, Kopytoff suggests, “one would ask questions similar to those one asks about people”.⁵ He asks: Where does the thing come from and who made it? What has been its career so far, and what do people consider to be an ideal career for such things? What are the recognised “ages” or periods in the thing’s “life” and what are their cultural markers? How does the thing’s use change with its age, and what happens to it when it reaches the end of its usefulness?⁶ Taking Kopytoff’s concept of birth-life-death as a

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3 Repairs are often defined as unscheduled activities that arise out of a need to eliminate faults and make broken objects useful again on an after-the-fact basis. See Krebs, Stefan/Schabacher, Gabriele/Weber, Heike (eds.): *Kulturen des Reparierens: Dinge – Wissen – Praktiken*, Bielefeld: transcript 2018.

4 Kopytoff, Igor: “The Cultural Biography of Things”, in: Appadurai, Arjun (ed.): *The Social Life of Things, Commodities in Cultural Perspective*, Cambridge: Cambridge University Press 1986, p. 64–91, here p. 67.

5 Ibid.

6 Ibid.

starting point, in this chapter I examine the voyage of the *SS France*, an end-of-life ship, by tracing the events from her first use to her disposal and recycling. The story of this ship, however, reveals the limitations of this anthropomorphic metaphor, because examples from my research show the persistence of the *SS France*, or, as I describe it, the many lives of the *SS France*. She was reborn in her second life as the *SS Norway*, in her third as the *SS Blue Lady*, and underwent a subsequent unforeseeable reincarnation after demolition, with many of her material components and steel being remobilised and reintegrated into the local economy while others turned into waste legacies at the ocean's shore.

Since September 2017, I have been tracing the journeys of end-of-life vessels that end up in Alang, Gujarat for demolition. My archival research has taken me from India to the Netherlands to Norway. The following sections are based on archival sources found at the shipbreaker's office in Alang, the archives of the Norwegian Maritime Museum and Greenpeace, and the web. They range from newspaper clippings, the *SS France*'s shipping documents, bills of sale and purchase, NGO reports, Indian court proceedings, and documentaries on the *SS France* and shipbreaking in general. This data is further complemented by direct observations made at the Alang shipbreaking yards from April to August 2018. Researchers are authorised to access shipyards if due permissions are obtained from the relevant authorities. I also draw on ten semi-structured interviews of approximately 90 minutes conducted in English and Hindi with key stakeholders, including administrative port authorities, shipbreakers, workers, union workers, second-hand market traders and academics.

In the first part of the chapter, I examine the voyage of an end-of-life ship, the *SS France*, from the Global North to the Global South for scrapping. Plying the seas, variously as the *SS France*, the *SS Norway* and the *SS Blue Lady* on behalf of a string of owners, the ship's journey came to an abrupt halt as she found herself faced with prohibitively expensive repairs owing to a fatal boiler accident on board. I argue that the history of a technical artefact, in this case a ship, should not be reduced merely to production, repair, reuse, maintenance or recycling; rather it needs to encompass all these stages, since they are deeply interwoven with questions of waste and disposal.

In the next section of the chapter, I elaborate on my hypothesis by investigating the shipbreaking site where the *SS Blue Lady* was demolished in 2006–2007. Alang is located along the Gulf of Cambay, in the Bhavnagar district of Gujarat, the north-western-most state in India. Alang and neighbouring Sosiya are two local villages that lend their name to the Alang-Sosiya shipbreaking yards (ASSBY), located along a ten-kilometre stretch of coastline. The economic and social organisation of the shipyards and the reverse logistics of taking things

apart are analysed as part of a process that I refer to as the unmaking of end-of-life vessels, as they are turned by arduous human labour into a variously reusable, non-reusable and toxic stream of materials.

The unforeseeable “reincarnation” of the *SS France* and the tracing of reusable materials generated from many decommissioned vessels that are sold in the second-hand markets of Alang is the subject of the final part of the chapter. The story of the *SS France*, as the markets and shipyard reveal, is not just a story of birth and death, since it does not end after demolition; instead, her steel, toxic residues and fittings are reintegrated into the local economy, much like those of many end-of-life vessels that are sent here for scrapping.

THE SS FRANCE: THE DOOMED STORY OF THE LAST ILLUSTRIOUS SHIP OF STATE

The *SS France* was a *Compagnie Générale Transatlantique* ocean liner built at the *Chantiers de l'Atlantique* shipyard in Saint-Nazaire, France, between 1957 and 1961. She was built to replace old vessels of the 1950s such as the *SS Ile de France* and the *SS Liberté*.⁷ The *SS France* was a massive steel vessel – in fact the longest passenger ship ever built, at 315 m long and 33.7 m wide – with a horsepower of 160,000 kW. She maintained her leading position for almost 44 years until the construction of the *RMS Queen Mary 2* in 2004.⁸ Like every other ship embarking on its maiden voyage, she was christened by her godmother, Madame Yvonne de Gaulle, wife of French President Charles de Gaulle, at a public ceremony.⁹ A bottle of champagne was smashed against the shiny hull of this \$80 million liner, and she was launched into the Loire River on 11 May 1960. In his inaugural speech, President Charles de Gaulle, incredibly proud of France's naval achievements, said, “The *France* is launched. It is going to marry with the sea. May this ship accomplish its destiny to carry men toward men”.¹⁰ He applauded the shipbuilding industry, represented by a series of leaders, engi-

7 O'Brien, Rob: Classic Liners: SS France, <http://www.classicliners.net/SSNORWAY.html> (accessed 16.03.2019).

8 Ibid.

9 Clip-9888: Launching of SS France, <http://www.budgetfilms.com/clip/9888/> (accessed 16.03.2019).

10 Storli, Captain Jan-Olav: SS France-Construction and Launch, <http://www.captainsvoyage.com/ncl/ss-norway/ss-france---construction.html> (accessed 10.03.2019).

neers, technicians and workers who brought the *SS France*, an icon of French maritime pride, into existence.

After outfitting and sea trials, the ship entered into service in 1962. She impressed everyone around with her speed of 30 knots, cutting long transatlantic voyages from nine to five days. For the next 12 years, the *SS France* crossed the Atlantic as a speedy ocean liner, ferrying passengers back and forth, to and from Europe and the United States. However, the advent of cheap transatlantic air travel in the 1950s–1960s, increasing fuel oil prices in 1974, the launch of even faster rival vessels and the withdrawal of all state subsidies led to the ship's early retirement (fig. 1).¹¹



Figure 1. The *SS France* docked at Kowloon in Hong Kong on her final round-the-world cruise as *France*, February 1974 (Photo: https://commons.wikimedia.org/wiki/File:SS_France_Hong_Kong_74.jpg, accessed 25.09.2019).

In 1974, the *SS France* was removed from service and laid up at Le Havre port, where she remained idle for the next five years. Her mothballing was met with anger and dismay by much of the French population. Michel Sardou's protest song *Le France*, quoted in the chapter's epigraph, personified the once proud ocean liner that had been betrayed by politicians, taken out of service and left

11 O'Brien, *Classic Liners*.

docked at the port. The controversial song topped the pop charts, with more than 500,000 copies being sold in two weeks.¹²

HER SECOND LIFE AS THE SS NORWAY

In 1979, the *SS France* was sold to Knut Kloster, owner of Norwegian Cruise Line (NCL), one of Norway's oldest shipping firms, for \$18 million. NCL spent \$80 million on refitting operations in Bremerhaven, Germany, and renamed her the *SS Norway* (fig. 2).



Figure 2. The *SS Norway* arriving in Southampton on her maiden voyage after her conversion to a cruise ship, May 1980 (Photo: https://commons.wikimedia.org/wiki/File:SS_Norway_on_%22maiden%22_voyage.jpg, CC BY-SA 4.0, unaltered, accessed 25.09.2019).

The ocean liner was successfully converted into one of the largest Caribbean cruise ships. An invitation letter from Eric Bye, Norway's dearest conveyors of maritime culture, demonstrates the pride Kloster had for the newly christened *SS Norway* that was on a voyage to Oslo. He said:

12 Lichfield, John: "The Pride of a Nation: Luxury Liner that's set to sail once more", in: *The Independent*, 26 Feb. 2011, p. 1.

“This is hardly an understatement when talking about the world’s largest passenger ship, the former S/S France, which has virtually become a brand-new vessel, and will be offering cruises in the Caribbean. On May 3 [1980], the S/S NORWAY arrives in Oslo on a short stop. Klostors Rederi brings the ship to the country’s capital solely to present it to the population of Norway before it leaves our waters for good. Because it is not likely that the S/S NORWAY will ever return to Norway, so the event in Oslo in May will thus be both a ‘welcome home’ and a goodbye.”¹³

She entered service on seven-night cruises from Miami to the Caribbean in the 1980s and became a celebrated luxury Caribbean cruise ship. On 25 May 2003, the eventful journey of the *SS Norway* came to an abrupt halt as a boiler rupture in the aft boiler room (boiler no. 23) crippled her.¹⁴ The accident occurred while the ship was docked in Miami after having just completed a week-long Caribbean cruise. There were 911 crew members and 2,135 passengers on board when the boiler explosion happened. It killed eight crew members and injured seventeen others, and damaged not just the aft boiler room but also the bulkheads, doors and doorframes three decks above on the ship.¹⁵

The *SS Norway*, NCL’s only steam-powered ship at that time, was equipped with four central boilers. The boiler system of the 43-year-old ship was originally built in France and later modified in Germany in 1999.¹⁶ The US National Transportation Safety Board (NTSB) conducted a detailed investigation of the boiler’s operational and maintenance history after the accident. The report highlighted that a weld on the seam of a high-pressure drum had ruptured, releasing

13 Bye, Eric: Copy of Invitation Letter “VI Gar Ombord” I S/S Norway, 15 Jan. 2019, Skipsopplysningsarkiv “Norway” collection, 1980, Archive of the Norwegian Maritime Museum.

14 Sutton, Jane: “Norwegian Cruise to plead guilty in deadly blast”, in: Reuters, 3 May 2008, p. 1.

15 Snyder, John: “Eight crew killed by steam-boiler explosion aboard Norway”, in: Professional Mariner, 28 Feb. 2007, p. 1.

16 The *SS Norway* had a chequered past: in the 1980s, the ship’s electrical system had failed, as a result of which she had drifted for a day. Subsequently, in 1981, a boiler room failure idled the ship yet again for a day. This was followed by a fire in the boiler room in the same year which led to the cancellation of two more cruises. In 2001, the *SS Norway* failed a coast guard inspection because more than a hundred problems were found, especially with regard to unfinished maintenance and repairs on the vessel. See Anon.: “SS Norway has chequered history”, in: United Press International, 26 May 2003, p. 2.

20 tonnes of scalding water that turned into steam and swept through the engine room and adjacent crew quarters on the vessel.¹⁷

Marine boilers are one of the most essential pieces of equipment on ships. Their main job is to generate high-pressure steam to run the ship's machinery. Like any other apparatus, boilers have an estimated design life, and the degree of material fatigue they sustain is affected by how they are operated and how often and how well they are inspected, maintained and repaired. The ship's original boiler manual stated that cleaning should have been carried out every 3,000 hours.¹⁸ The boilers were periodically inspected visually and by non-destructive tests (such as dye penetration, magnetic particle inspection or ultra-sonics). The visual inspections were challenging to execute, however, as a surveyor could not examine the drum by just putting his head through the access opening and shining a flashlight inside. As one engineer explained, "[y]ou have to go in ... and it's a very, very cramped space".¹⁹ The boilers were found to have pitting and oxygen corrosion on multiple occasions. Throughout the years of the ship's operation, any cracks found were welded but with questionable expertise. Frequent use of incorrect boiler start-up and shutdown procedures and a failure to maintain correct water chemistry in the boiler also added to significant stresses on the machinery. In 1997, a port engineer cautioned the NCL Executive in writing: "The boilers on the *SS Norway* have reached a state where a decision must be made".²⁰ The options available to resolve the problem included replacing the old boilers, completely retubing the old boilers with new economisers, and installing new automation. The company's document analysis further revealed that no non-destructive testing or internal visual inspections were carried out after 1990 for the headers of boilers 21 and 23 and after 1996 for the headers of boilers 22 and 24.

The post-accident investigations thus determined that the most probable cause of the *SS Norway*'s boiler rupture was "the deficient boiler operation, maintenance, and inspection practices of NCL, which allowed material deterioration and fatigue cracking to weaken the boiler. Inadequate boiler surveys by

17 National Transportation Safety Board Washington D.C. 20594: Marine Accident Brief, <https://www.nts.gov/investigations/AccidentReports/Reports/MAB0703.pdf> (accessed 10.03.2019).

18 Ibid.

19 Ibid.

20 Ibid.

Bureau Veritas [a French company that inspected *Norway*] contributed to the cause of the accident”.²¹

The crippled *SS Norway* was registered with a Bahamian flag and was once again towed from Miami to the Lloyd Werft shipyard in Bremerhaven. After arriving on 23 September 2003, she awaited the decision as to whether she would be repaired and returned to service or taken out of service altogether. NCL decided that the ruptured boiler should not be replaced, as it was difficult to determine whether the other three boilers were safe to operate any further. The repair personnel believed that only a total replacement of the boiler machinery would make her safe to return to service once again.²² The high repair costs were deemed uneconomical, and in March 2004, NCL announced that the *SS Norway* would not return to the North American fleet. The ownership of the vessel was transferred to Star Cruises, the parent company of NCL, for potential scrapping.²³

A RELENTLESS SEARCH FOR A MARITIME GRAVEYARD

Seafaring vessels are not just giant floatable masses of steel; they are assemblages of a wide variety of materials. Vessels built before the 1980s, in particular, were built of substances ranging from asbestos, heavy metals, polychlorinated biphenyls (PCBs), tributyltin (TBT), chlorofluorocarbons (CFCs) and radioactive materials. The *SS Norway* was therefore no exception to the prevailing norms of the time. During her construction, these materials were used in the ship’s structure and each substance intended for use had a very specific role.

In 1888, asbestos was considered to be one of “nature’s most marvellous productions” owing to its thermal insulation and fire-resistant properties.²⁴ It is most commonly found in insulation gaskets, brake linings, pipe laggings, doors and other similar items. Heavy metals such as lead, cadmium, mercury and

21 National, Marine Accident Brief.

22 Newman, Doug: “SS Norway: Time is Up”, in: Cruise Critic, 18 Oct. 2007, p. 1.

23 NGO Platform on Shipbreaking: Star Cruises Ltd and Norwegian Cruise Lines: Deceiving Germany and Violating International Law in the Export of the SS Norway to India, http://archive.ban.org/library/Star_Cruises_Deception_Report_Final.pdf (accessed 13.03.2019).

24 Litvintseva, Sasha: “Asbestos: Inside and Outside, Toxic and Haptic”, in: *Environmental Humanities* 11, 1 (2019), p. 152–173.

chromium are used in batteries, level switches, gyrocompasses, galvanized materials, etc.²⁵ PCBs are a family of chemicals that were used on board because of their great electrical insulation and fire-resistant properties. They can most commonly be detected in oils, plastics, paints and other adhesives.²⁶ TBT is an umbrella term for a class of organotin compounds that were used in anti-fouling paints. As biocides, they prevented the growth of algae, barnacles and other marine organisms on ships' hulls.²⁷ CFCs are compounds that were used as coolants in on-board air conditioning systems and refrigerators. Radioactive materials such as Americium 241 were especially used in smoke detectors installed on ships.²⁸ To summarise, a combination of these materials therefore protected the ship from burning and rusting and prevented an overgrown hull from micro-organisms underwater.

But owing to their harmful occupational effects on shipyard workers and the adverse impact on the environment, these substances were progressively banned from being used in the shipbuilding industry in the Global North. Some of the materials such as asbestos, heavy metals, PCBs and TBT were identified as human carcinogens. Christopher Sellers and Melling Joseph, elaborating on the specific case of asbestos, note that as strict health regulations were introduced in developed countries, the use of asbestos decreased significantly, falling by half from its peak in the 1990s. But its use continued to increase as a result of exports to developing countries like India.²⁹ These embedded materials, progressively recognised as hazardous over time as health and environmental regulations became more stringent, were deemed very expensive for proper decontamination in seafaring vessels by their owners.

In 2004, an interested European third party, Pierre & Vacances, explored the possibility of purchasing the *SS Norway* from Star Cruises. It commissioned a feasibility study to determine the amount of asbestos the ship contained and the cost of its proper decontamination. Their study estimated that over €17 million would be needed to decontaminate some of the asbestos, covering only the partition walls, insulation and briquetting.³⁰

25 Poel, Marc van de: Hazardous Materials on board, http://vandepoel.nl/wp-content/uploads/2017/06/MAR1045_Boek-asbestos-digitaal_V1.pdf (accessed 12.03.2019).

26 Ibid.

27 Ibid.

28 Ibid.

29 Sellers, Christopher/Melling, Joseph (eds.): *Dangerous Trade: Histories of Industrial Hazard across a Globalizing World*, Philadelphia: Temple University Press 2012.

30 NGO, Star Cruises.

Meanwhile, the somewhat abandoned *SS Norway* was docked in Bremerhaven for almost two years. On 23 May 2005, the ship was allowed to leave Germany based on Star Cruises' false declaration that the vessel was headed to Singapore and was going to be reused as a floating hotel. In reality, however, it was headed to Asia for scrapping.³¹

Under the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (1992), the export of ships from OECD to non-OECD countries is considered as illegal traffic and prohibited by law. The Convention does not refer directly to the vessels or rigs; rather it refers to the hazardous waste contained in them. It defines "wastes" as substances or objects which are disposed of, intended to be disposed of or required to be disposed of by the provisions of national law. In the absence of specific provisions or guidance concerning the special nature of the transboundary movement of ships for the purposes of recycling or disposal provided by the Basel Convention or the parties to it, the general waste definition must be applied.³² Ships therefore become waste when their owners have the intention to scrap or recycle them.

The 2006 European Waste Shipment Regulations extend the obligations of the Basel Convention to all waste, whether hazardous or not. The Regulation is directly applicable in all European Union states and bans the export of waste from the European Union for recovery to any location outside the OECD.³³ Since the *SS Norway* was a ship of European origin, she should not have been sold to any country outside the European Union for scrapping. Her departure from Germany was therefore a violation of international regulations enforced to control the movement of hazardous waste.

Upon reaching Asia, the *SS Norway* did not become a floating hotel, as declared and expected. Instead she ended up in Port Klang, Malaysia, the home port of Star Cruises, on 14 October 2005. During her one-year stay, the *SS Norway* was renamed the *SS Blue Lady* and prepared for scrapping. Interested

31 Ibid.

32 United Nations Environment Programme (UNEP), Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal: Protocol on Liability and Compensation for Damage Resulting from Transboundary Movements of Hazardous Wastes and their Disposal, <https://www.basel.int/Portals/4/Basel%20Convention/docs/text/BaselConventionText-e.pdf> (accessed 12.03.2019).

33 Ship Recycling, FAQs on ship and rig recycling, <https://safety4sea.com/21182626-2/> (accessed 13.03.2019).

shipbreakers from India were invited by Star Cruises to Port Klang to inspect the vessel and decide on her impending fate.³⁴

Star Cruises still claimed, however, that the non-operational vessel was headed to Dubai in the United Arab Emirates for repairs. The ownership of the vessel changed yet again as Star Cruises sold the *SS Blue Lady* to a Bangladeshi Liberian-registered breaker, Bridgend Shipping Ltd, for \$10 million. On 16 February 2006, the vessel attempted to berth in Bangladesh. But after intensive lobbying by Greenpeace, the Bangladeshi government refused entry to the now infamous toxic ship which contained 1,250 tonnes of asbestos among other harmful substances.³⁵ Bridgend Shipping Ltd then sold the ship to M/S Priya Blue Industries Pvt. Ltd, an Indian ship dismantling company, for \$16 million.³⁶ On 30 June 2006, with the help of tugs, the vessel arrived in Alang, with 14 people on board.

RACKING BRAINS: SHOULD THE *SS BLUE LADY* BE BROKEN OR RETURNED?

Gopal Krishna, an environmental activist, initially prevented the *SS Blue Lady* from entering Indian territorial waters for demolition. He filed an application to the highest judicial body, the Supreme Court of India.³⁷ An inspection committee was set up, and the ship was anchored at Pipavav Port, a few nautical miles away from Alang, as the court hearing was in progress (fig. 3). On 15 August 2006, amidst all the controversies, the *SS Blue Lady* was beached on the shores of Alang,³⁸ with the shipowner having pleaded to the court primarily on humanitarian grounds, since the monsoon season was approaching, and food supplies were running out for the crew still on board the ship. However, the final permission for dismantling was still not granted by the court to the Gujarat Maritime

34 Blue Lady, SS: Bills of Sale and Purchase, 3 Jun. 2018, Priya Blue Industries Pvt. Ltd collection, 2006, Office of Priya Blue Industries Pvt. Ltd, Bhavnagar, Gujarat.

35 Goossens, Reuben: NTSB Report Discloses NCL Failures re SS Norway Boiler Maintenance, <https://ssmaritime.com/norway-NTSB-report.htm> (accessed 11.03.2019).

36 Blue Lady, SS: Bills of Sale and Purchase, 3 Jun. 2018, Priya Blue Industries Pvt. Ltd collection, 2006, Office of Priya Blue Industries Pvt. Ltd, Bhavnagar, Gujarat.

37 Watch, Bihar: Human Rights and Environmental Groups condemn Blue Lady Ruling, <http://www.asbestosfreeindia.org/2007/09/> (accessed 12.03.2019).

38 The method used for shipbreaking in Alang (and in other South Asian countries) is known as the beaching method. Ships are run aground at high tide, leaving them stranded at low tide. It is an irreversible process and after beaching the ship cannot run on its own power.

Board (GMB), the nodal agency that regulates shipbreaking activities in Gujarat.³⁹

Still hopeful environmental activists lobbied heavily for the return of the *SS Blue Lady* to Germany. At the behest of the court, a Technical Experts Committee (TEC) was set up, comprising of experts and retired naval officers. They were instructed to physically inspect the vessel so that a decision could be made in the best possible manner. The TEC felt that the breaking of the *SS Blue Lady* in Alang was feasible. They argued that asbestos containment was possible as it was mostly found in enclosed areas in the form of wall partitions, ceilings, roofing and galleries and was reusable, as is the case with the most end-of-life ships. With proper safety equipment available to the workers, together with appropriate waste disposal facilities, demolition should be allowed.



Figure 3. The *SS Blue Lady* docked at Pipavav Port, August 2006 (Photo: Satish Singh, Safety Officer, V1 Plot, Priya Blue Industries, Alang).

On 11 September 2007, permission to dismantle the venerable ship was granted. The judgment stated:

39 Krishna, Gopal: “Will the Blue Lady do a Le Clemenceau?”, in: India Together, 17 Feb. 2007, p. 1.

“We may mention that breaking of the vessel Blue Lady will provide to this country 41000 MT [metric tonnes] of steel and it would give employment to 700 workmen. [...] [T]here will be less pressure on mining activity elsewhere. [...] It cannot be disputed that no development is possible without some adverse effect on the ecology and environment, and the projects of public utility cannot be abandoned and it is necessary to adjust the interest of the people as well as the necessity to maintain the environment. A balance has to be struck between the two interests. Where the commercial venture or enterprise would bring in results which are far more useful for the people, difficulty of a small number of people has to be bypassed. The comparative hardships have to be balanced and the convenience and benefit to a larger section of the people has to get primacy over comparatively lesser hardship. [...] 85% of asbestos is in the panels and insulation that quantity is reusable.”⁴⁰

In 2006, Alang had refused to demolish *Le Clemenceau*, an asbestos-lined 27,000 tonnes French warship, and returned it to its home country after intense lobbying pressure from Greenpeace as it contained more asbestos than French officials had claimed while selling it.⁴¹ The arrival of the *SS Blue Lady* to Indian shipyards and the court’s approval to dismantle the ship could be interpreted as an attempt to revive the stagnating business in Alang, as it was receiving fewer vessels for demolition than usual.⁴² In 2005, Alang received 73 vessels, compared with 361 in 1998. Competition from other shipbreaking yards in Bangladesh, Pakistan and China was seen as one of the main reasons for bad business. In his work on the *SS Blue Lady*, Federico Demaria has highlighted “different languages of valuation” used by various stakeholders involved in the shipbreaking industry, including environmentalists, shipbreakers, villagers, Indian national authorities and international authorities.⁴³ He has noted how different actors used different frames of reference to argue their respective cases and how language that “expresses sustainability as monetary benefit” at a national scale was dominant in the judgment of the Supreme Court of India. The journey of the *SS Blue Lady* to the Alang shipbreaking yards is one example of a ship that has reached the end of her useful life, is deemed prohibitively expensive for repair and is

40 Supreme Court of India, Research Foundation for Science Technology and Natural Resource Policy vs. Union of India and Others: Civil Writ Petition No. 657 of 1995, <https://www.sci.gov.in/jonew/judis/29517.pdf> (accessed 10.03.2019).

41 Jeena, Kushal: “Despair as Clemenceau returns”, in: United Press International, 20 Feb. 2006, p. 1.

42 Ibid.

43 Demaria, Federico: “Shipbreaking at Alang-Sosiya (India): An ecological distribution conflict”, in: *Ecological Economics* 70 (2010), p. 250–260.

therefore sent for scrapping as she has turned from an asset into an unjustified financial liability for her owners.

THE UNMAKING OF END-OF-LIFE VESSELS IN ALANG

One might wonder how a small village in north-western India ended up being home to the world's largest shipbreaking industry. The answer lies partly in Alang's significant geographical advantages, which include a high tidal range, a 15° slope that makes it easier for ships to run aground, and a rocky bottom surface. These characteristics have played a significant role in its development as one of the world's largest shipbreaking yards.⁴⁴ With the beaching of a Russian cargo ship, the *M. V. Kota Tenjong*, on 13 February 1983, shipbreaking commenced here as a full-time activity (fig. 4).

An estimated 45,000 ocean-going ships currently operate on the world's seas, and an average of 700 ships are sent for demolition every year.⁴⁵ Since it began shipbreaking, Alang has beached a total of 7,891 vessels, representing 62.40 million metric tonnes of light displacement tonnage (LDT), and the industry is continuing to grow.⁴⁶ All kinds of end-of-life vessels, including large supertankers, ocean liners, crude oil tankers, ro-ro ships, animal carriers and container ships, make their final journeys to these yards. The shipbreaking industry undoubtedly remains a great source of revenue for Gujarat as it generates large quantities of re-rollable steel and accounts for 15% of the country's total steel output.⁴⁷ It thus acts as an alternative to the non-renewable resource of ore, while representing a valuable source of supply for second-hand goods. Deborah Breen

44 Other shipbreaking yards in India are located in Mumbai, Kolkata and Vishakhapatnam.

45 International Federation for Human Rights, Fidh: Where do the "floating dustbins" end up? Labour Rights in Shipbreaking Yards in South Asia: The cases of Chittagong (Bangladesh) and Alang (India), <https://www.fidh.org/IMG/pdf/bd1112a.pdf> (accessed 12.03.2019).

46 Gujarat Maritime Board: Ship Recycling Yards: No. of Ships and LDT, <https://gmbports.org/ship-recycling-yards> (accessed 12.03.2019). Light Displacement Tonnage (LDT) is a measure expressed in metric tonnes and represents at best the scrap value of the ship. It is the actual weight of the ship excluding cargo, fuel, ballast water, stores, passengers and crew.

47 NL, Greenpeace: "Shipbreaking in Asia: Unregulated Trade Contributes to Concentration of Dangerous Activities in Developing Countries", 7 May 2019, Greenpeace NL collection, 1999 II, 1340 IV, Archive of Greenpeace NL, International Institute of Social History.

notes similarly that in Bangladesh's case, re-rolled steel from beached ships provided up to 80% of the steel used in the local construction industry in the last two decades of the 20th century.⁴⁸



Figure 4. Location map of Alang-Sosiya in the state of Gujarat, India (Map: https://commons.wikimedia.org/wiki/File:India_Gujarat_location_map.svg, CC BY-SA 3.0, altered, accessed 25.09.2019).

As soon as one sets foot in the city of Bhavnagar, 50 km away from the villages of Alang-Sosiya, a difference can be felt in the surroundings. Marine fittings, machinery, spare parts and all kinds of knick-knacks related to seafaring vessels can be seen hanging on both sides of the road as far as the eye can see. This visual sight is followed by a heightened sense of a strong burning smell and the thunk of hammers ringing in one's ears as one enters Alang. From a distance, vessels at various stages of their dismantling processes are visible. These range from ships

48 Breen, Deborah: "Constellations of Mobility and the Politics of Environment: Preliminary Considerations of the Shipbreaking Industry in Bangladesh", in: *Transfers* 1, 3 (2011), p. 24–43.

being stripped of their fittings to a ship whose nose is being cut auspiciously, denoting that the salvaging process has just begun (fig. 5), half-broken ships and the skeletal remains of a vessel lying along the coast awaiting a few final steps before it disappears completely.



Figure 5. Shipbreaking in progress with a cut being made on the nose of the ship (Photo: Ayushi Dhawan).

Shipbreaking is defined as the “process of dismantling a vessel’s structure for scrapping or disposal whether conducted at a beach, pier, dry dock or dismantling slip”.⁴⁹ It includes a wide range of activities, from removing all types of machinery and equipment to cutting down the ship’s infrastructure. The industry was first developed in the USA, the UK and Japan during the Second World War, since a huge number of ships had been damaged and there was an urgent demand for steel. In the 1960s it moved to less-industrialised European countries such as Spain and Italy. In the 1970s, ship-breaking centres relocated to Asia,

49 Pasayat, Arijit, S. H. Kapadia: Writ Petition (C) No. 657 of 1995 (With SLP) No. 16175/1997, C. A. No. 7660/1997 and Suo Motu Con. Petition 155/2005, http://ec.europa.eu/environment/waste/ships/pdf/indian_order2007.pdf (accessed 15.03.2019).

first to Taiwan and South Korea, and then during the 1980s to China, Bangladesh, India, Pakistan, the Philippines and Vietnam.

Scholars have explained this constant shift in the centres of demolition from developed to developing countries in various studies.⁵⁰ They argue that the shipbreaking industry moves and relocates to wherever it is easiest to externalise social and environmental costs. This relocation from the Global North to the Global South has been complemented and further strengthened by rising demand for steel in developing domestic markets, lax environmental regulations and a cheap workforce.

Obsolete vessels that arrive in Alang for scrapping are primarily sold on the basis of weight to shipbreaking companies by two methods, either directly or through cash buyers.⁵¹ There is a legislative framework in place to regulate the industry. Government departments such as the Gujarat Maritime Board (GMB), Gujarat Pollution Control Board (GPCB), Explosives Department (consulted for oil tankers), Customs Department and Atomic Energy and Research Board (consulted if there are radioactive materials on board) inspect the vessel and issue relevant certificates, and only then can the scrapping process begin to take place.⁵² Once the vessel is beached and reaches the shore, the engine is shut down, anchors are dropped to the seabed and electricity on board the ship is cut off completely. All operations after the beaching process take place directly on the plots located along the coast of Alang. Current estimates suggest that there are currently around 153 plots in operation which are generally leased to shipbreakers by the state of Gujarat for ten years.⁵³

50 Haldar, Stuti/Dutta, Indira (eds.): *Alang Shipbreaking Industry: An Ecological Distribution Conflict*, New Delhi: Allied Publishers Pvt. Limited 2017; Clapp, Jennifer: "The toxic waste trade with less-industrialized countries: economic linkages and political alliances", in: *Third World Quarterly* 15, 3 (1994), p. 505–518; Sinha, Saujanya: "Ship Scrapping and the Environment – the buck should stop!", in: *Maritime Policy and Management* 25, 4 (1998), p. 397–403.

51 The ship owner may sell the ship directly to a shipbreaking company by taking charge of its transportation to the final destination (in this case the shipbreaking yards), or preferably sell it through a broker. Alternatively, a ship owner may sell the ship to a "cash buyer" company such as GMS or the Wirana Shipping Company. These companies buy the ships and resell them to shipbreakers.

52 Oral Interview with Port Officer, Captain Sudhir Chadha, Gujarat Maritime Board, 31 May 2018.

53 Oral Interview with R. M. Ram Patel, Vice-President Alang Soshiya Ship Recycling and General Workers' Association, 1 Jun. 2018.

Before the dismantling process starts, a ship's fuel tanks are drained to prevent any accidental explosions on board. An army of workers then go on board the ship to strip it of its fittings, which include electronics, furniture, cooking ware, machinery, wiring, plumbing and many other items that are later sold in second-hand markets. Only after this step does the actual salvaging process start, with an auspicious cut being made on the nose of the ship using acetylene torches. Further openings are made in the hull of the ship. These serve two purposes: they allow more light into the vessel and also act as escape routes for workers in the event of accidental fire.

The ship is then cut piece by piece; the workers begin dissecting the front portion and gradually work their way towards the very end. Even the most impregnable and sturdiest ships are torn down in a matter of months by the arduous labour of workers assisted by a modest variety of tools and machines such as sledgehammers, acetylene torches, winches and cranes.⁵⁴ The time taken for the complete demolition process depends entirely on the type of vessel in question. For instance, an oil tanker takes comparatively less time to scrap than a passenger liner as the latter has a more complex inbuilt structure than the former. At Alang, an average ship of 40,000–60,000 LDT is broken in approximately three to five months.

These yards employ around 40,000–60,000 workers in total for shipbreaking operations every year. Workers from different parts of the country, especially Odisha, Uttar Pradesh, Bihar and West Bengal, migrate to Alang in search of better employment opportunities. Historian Geetanjoy Sahu states that since a majority of workers working at shipbreaking yards are migrants, no database has been created or maintained indicating the total number of workers employed in individual yards.⁵⁵ This problem is further complicated by the availability of ships for demolition at a particular yard at a given moment in time; workers tend

54 Kot, Michael: Shipbreakers, https://www.youtube.com/watch?v=5jdEG_ACXLw (accessed 12.03.2019); Rane, V. Prathamesh: Echoes of Shipbreaking, <https://www.youtube.com/watch?v=vV3M4jqD-Sg> (accessed 12.03.2019). These documentaries vividly explore shipbreaking along the beaches of Alang, showing how workers break dilapidated vessels from the Global North, live with and dispose of hazardous wastes and transform these geriatric vessels into scrap metal that is used in downstream industries, in turn benefiting the local economy of India.

55 Sahu, Geetanjoy: "Workers of Alang-Sosiya: A Survey of Working Conditions in a Ship-Breaking Yard, 1983–2013", in: *Economic and Political Weekly* XLIX, 50 (2014), p. 52–59.

to switch employers quite often depending on the availability of ships and requirements at the yards.⁵⁶

Depending on their skills and experience, workers are very often categorised into *mukadams* (supervisors), gas cutters (working on the ships and at the yards), winch and crane operators, loaders and yard cleaners. They are paid daily wages according to these classifications. During the field work in summer 2018, a gas-cutter's wage was around 800 rupees (\$11), compared to a yard cleaner who earned around 200 rupees (\$3). In comparison to the yard workers, a rickshaw puller, for instance, would have to work more than a week or two to earn the same amount of money. The constant search for better employment opportunities than in their home states therefore brings a lot of workers to Alang. Apart from direct employment, the yards create indirect employment opportunities for tens of thousands of workers employed in downstream industries, such as re-rolling mills, oxygen plants and the real estate market, thereby contributing to the economic growth of the country.

Shipbreakers argue that 97% of a ship's contents are recyclable. Before the dismantling process, materials that are extracted from the carcass of the ship, like ferrous objects, non-ferrous objects, wood, glass, plastic, machinery and other equipment, are neatly separated out and sold in second-hand markets. Larger sheets of steel are sent to re-rolling mills where they are converted into rods and bars and then supplied to local construction industries. Other materials such as loose asbestos, metallic waste, plastic scrap and broken glass, which are often deemed as having no commercial value and are categorised as residual wastes, end up in a state-owned secured landfill site in Ahmedabad.

Since its inception, however, the industry has been frequently criticised by environmental activists and NGOs for scrapping vessels through the beaching method. They argue that shipbreaking is a hazardous activity as it exposes workers and the environment to chemicals that are released during the demolition process which takes place on beaches.⁵⁷

56 Oral Interview with R. M. Ram Patel, Vice-President Alang Soshiya Ship Recycling and General Workers' Association, 1 Jun. 2018.

57 NL, Greenpeace: "Shipbreaking in Asia: Unregulated Trade Contributes to Concentration of Dangerous Activities in Developing Countries", 7 May 2019, Greenpeace NL collection, 1999 II, 1340 IV, Archive of Greenpeace NL, International Institute of Social History.

SECOND-HAND MARKETS: NEW USES OF DECOMMISSIONED SHIPS

In hindsight, for the shipbreaking company in Alang, the *SS Blue Lady* was a sought-after source of ferrous and non-ferrous scrap, precisely 47,689.10 metric tonnes of LDT.⁵⁸ For traders at second-hand markets, the ship's body was a rusting carcass that contained traditional and contemporary fittings. The shipbreakers' bills of sale and purchase reveal that the ship contained 10 passenger decks, 5 diesel generators, 6 steam generators, 2 diesel-driven emergency generators, 2,000 televisions, 800 refrigerators, 40 computers, 1,500 wall clocks, 120 vacuum cleaners, 1,200 mirrors, 1,500 mattresses, 2,000 pillows, 600 navigational charts, 850 sets of cutlery, 200 plastic buckets and many more items.⁵⁹

Even as the *SS Blue Lady* was broken piece by piece and rivet by rivet in Alang, her steel was being used in the local construction industries and her artefacts and fittings had been recovered through auctions and were now either in use by new owners or even preserved in public and private collections across the world. For instance, the prow of the ship has been proudly installed in the port of Le Havre. The city authorities purchased it at auction for €150,000. As the prow was being installed, Le Havre's Mayor Luc Lemmonier stated, "[t]o have in our city a vestige of this symbolic liner, a piece of our heritage, is highly symbolic".⁶⁰

Every year, as so many vessels are scrapped in Alang, second-hand markets are lined up on either side of the road to the yards in Alang, stretching for approximately 10 km. Every reusable part found in a ship, ranging from consumer goods such as furniture, crockery and carpets to kitchen equipment such as toasters, ovens and sinks, machinery like engines, generators and compressors, and life-saving equipment, are found at these markets at very cheap prices (fig 6). Traders dealing in various objects visit the vessel, once the shipbreaker has received appropriate clearances from the regulatory authorities. They negotiate with the shipbreakers for the entire cache of goods in their categories. These

58 Blue Lady, SS: Bills of Sale and Purchase, 3 Jun. 2018, Priya Blue Industries Pvt. Ltd collection, 2006, Office of Priya Blue Industries Pvt. Ltd, Bhavnagar, Gujarat.

59 Ibid.

60 Bond, Mary: "Tip of the bow of the former France back in Le Havre", in: Seatrade Cruise News, 27 Sep. 2018, p. 1; Normandy, France 3: The Liner France again visible in Le Havre, <https://www.youtube.com/watch?v=ptXFig3yniA> (accessed 12.05.2019); Normandy France 3: The Incredible story of the nose of France, <https://www.youtube.com/watch?v=N4kBJQJA7ZM> (accessed 12.05.2019).

markets demonstrate how products that are rejected by the Western world are re-integrated into the local economy, exposing the other side of globalisation. Geographers Mike Crang and Nicky Gregson, who have investigated shipbreaking practices in Bangladesh, have noted similar practices in Chittagong's second-hand markets. As they point out, "the proud boast of the industry is that 99 per cent of an end-of-life ship is recycled".⁶¹



Figure 6. Second-hand lifeboats along with reusable metal springs in a local market in Alang (Photo: Ayushi Dhawan).

This burgeoning trade in recycled goods attracts hoteliers, factory owners from various industrial centres such as Delhi, Punjab, Chennai and Hyderabad, art collectors, homemakers and ship enthusiasts, who come looking for the remains of vessels. Most products can be found at one-fifth of the new price. Since machinery, iron and steel products are sold on the basis of weight, buyers can enjoy a

61 Crang, Mike/Gregson, Nicky/Ahamed, Farid/Ferdous, Raihana/Akhter, Nasreen: "Death, the Phoenix and Pandora: transforming things and values in Bangladesh", in: Alexander, Catherine/Reno, Joshua (eds.): *Economies of Recycling: The Global Transformation of Materials, Values and Social Relations*, London/New York: Zed Books 2012, p. 59–97, here p. 65.

profitable deal, and at times they come not just from the local areas but also from overseas. In terms of quality, traders vouch for their products, constantly reiterating that these products are often not easily available in India and that they are of good quality as Western shipbuilders use top-notch equipment to minimise repairs during the product's operational life.⁶²

CONCLUSIONS

Through maintenance and repair, the operational life of objects can be increased. But as the long and eventful voyage of the *SS France* reveals, sometimes prohibitively expensive repairs and maintenance costs are avoided by owners and the objects are disposed of and sent for recycling. The illegal export of the *SS France* from the Global North to the Global South for scrapping, as she plied the seas with different names on behalf of a string of owners, demonstrates that the production, repair, maintenance, reuse and recycling of technical artefacts are therefore directly interwoven with questions of waste and disposal. The journey of the *SS France* is emblematic of many other end-of-life vessels that end up at the shipyards in Alang, where distinct dichotomies of new v. old, functional v. non-functional, valuable v. worthless all become blurred as vessels with both illustrious and uneventful histories are broken alike. They are reverted back to tonnes of re-rollable steel and streams of reusable, toxic and non-reusable materials that are reintegrated and remobilised into the local economy or landfilled at Ahmedabad by the arduous labour of unmaking things, a process that remains toxic and life-giving at the same time.

62 Oral interviews with traders at second-hand markets: Sara Enterprises (dealing in generators and marine machinery), Solas Marine (dealing in spare machinery), Bhagvati Traders (dealing in clothes, fans and other retail items), Jodiyar Traders (dealing in ropes, nets, pumps and ship machinery) on 10 Jun. 2018.

