



With the weakness in global economic conditions making it sensible to accelerate the recycling schedules of certain older ships, *Stolten* thought it was a good time to talk to **Mark Martecchini**, Managing Director Shipowning, about Stolt's policies and practices on ship recycling.

# Ship Recycling:

**Whether you call it ship breaking, scrapping, dismantling or the industry term of choice today, recycling, few issues in shipping generate as much public and industry controversy.**

***Stolten:*** *Mark, Stolt recycles its ships in Alang, India. Given the reputation of the area, why do we choose Alang?*

**Martecchini:** I see we are starting out with the easy questions! You know, few things are more difficult to overcome than a bad reputation, especially given all the negative media attention Alang has received. We've all seen the photographs that came out of Alang, and they were not pretty. At a time when environmental consciousness and work-safety awareness were growing elsewhere in the world, images of Alang stunned people in the West. But much has changed since then – in shipping, in the Indian recycling industry and in the world at large.

Yes, the area has its share of challenges. But the fact remains that India has a substantial ship recycling infrastructure along with many steel recycling plants. We've also witnessed a very strong increase in industry regulation, whereby a number of Indian state agencies are now empowered to help ensure both safe conditions for workers and compliance with environmental standards.

By the way, environmental organisations such as Greenpeace played a significant role here, by helping to galvanise public opinion. I think, too, that many of the yards themselves saw the handwriting on the wall. It was no longer just a case of bad publicity if they didn't clean up their act; they ran a very real risk of losing their businesses and their livelihoods.

The shipping industry also has pushed for change. We at Stolt, for example, have joined with Intertanko, BIMCO and others to support the IMO's new recycling convention [Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009]. The convention has been developed over the past three years and was put forward for final ratification in May. It goes a long way towards ensuring that ships do not pose any unnecessary risks to human health and

safety, or to the environment, when they are recycled at the end of their operational lives. In fact, Stolt has already implemented the practices specified by the convention – we've had them in place for nearly two years now.

So, why do we choose Alang? Because the infrastructure is there, the expertise is there and there are now recycling yards there that operate in compliance with regulations, as well as our specific demands and those of the industry. Does this describe every one of the 100-plus yards in the Alang area? The answer is undoubtedly "no". But I am confident that, through our actions and those of the industry, we are helping to promote positive change.

***Stolten:*** *The beaching method of ship recycling, which is the practice in Alang, is rejected by some as environmentally unsound. What is your view on this? Is it possible to recycle ships in an environmentally friendly manner using this approach?*

**Martecchini:** If it weren't, we wouldn't do it. There are two key issues here: preparation and containment. If a ship has been properly prepared for recycling, and if effective containment measures are used, it doesn't matter whether the process takes place on a beach, a dock or inside a giant plastic bag.

The beaching method is often condemned by those who advocate dock recycling. But

recycling a ship at a dock is no guarantee that there will be no pollution. A ship must be properly prepared – that's where the Green Passport comes in. And on the containment side, a yard must demonstrate, through reliable and verifiable means, that it has the ability to do its job. If the work has been performed properly, there is no risk of contamination when you get down to the last few metres of steel. The location becomes a non-issue.

Finding the right yards, of course, is critical. At Stolt, we have put tremendous effort into identifying yards in Alang that not only meet our safety, environmental and operational criteria, but are willing to work with us to ensure that we do not deviate from those criteria (see sidebar).

***Stolten:*** *What's involved with a Green Passport?*

**Martecchini:** A Green Passport is basically an inventory of any hazardous materials that are aboard a ship when it is delivered to the recyclers. Every Stolt ship sent for recycling undergoes a comprehensive inspection by a technical expert who is trained to identify any hazardous materials aboard, be it asbestos contained in the physical structure of the ship, or residual fuel and lube oils in the ship's tanks. Once he's completed the list, it's verified independently by the classification society, DNV. They then give us a letter of compliance that we, in turn, pass along to the recyclers before the ship is delivered. The Green Passport tells the recyclers exactly what they are dealing with and where it is on the ship.

## THE RECYCLING YARDS: WHAT WE DEMAND

To ensure that the recycling of its ships is handled responsibly, Stolt insists that a yard operates in full compliance with (1) Stolt's specified standards for safety and protection of the environment, (2) state and local government regulations and (3) the IMO's recycling convention of 2009.

Key points of these requirements include:

- A complete recycling plan provided in advance by the yard
- ISO 14001 (Environmental Management System) and ISO 9001 certified
- Hazardous materials handling certification
- A trained, skilled workforce, provided with personal protection equipment

- Safety courses for new workers, including first aid awareness
- On-site first aid facilities and nearby access to a hospital
- Periodic medical exams for all workers and twice-yearly screening for specialised asbestos workers
- Full compliance with state and local safety regulations, including:
  - Gas-free verification and certification
  - Enclosed space entry and rescue
  - Emergency/firefighting equipment, drills, musters
  - Hot work procedures
  - Working aloft procedures
  - Risk assessment

# policies and practices at Stolt Tankers

RIGHT: The dismantling of *Stolt Heron* in progress.

BELOW: The removal of asbestos-containing insulation material, wrapped in plastic bags for safe disposal.

**Stolten:** So what typically remains on the ship, in terms of hazardous materials?

**Martecchini:** Actually, there's not much. And that's precisely the point. All the cargo tanks have been cleaned and made gas free – a job we at Stolt are pretty good at – and any slops properly disposed of. Bunker and oil tanks next to the shell are also emptied and made gas free, to eliminate any chance of a spill when the ship is run up on the beach. Any remaining bunker fuel and lubricants are removed after the ship is beached. There may also be some cleaning fluids or other items that are used in day-to-day life aboard ship, but that's about it.

Of course, there is also asbestos on ships built in the 1970s and earlier contain some asbestos, which was used for fire containment in the engine room. A ship cannot operate under its own power if the asbestos is removed, so it must be left for the recyclers. Regulations now require specially trained teams with protective gear to remove the asbestos, which goes to an approved local facility for disposal [Gujarat Environment Protection and Infrastructure Ltd. (GEPIL), a state-regulated facility].

**Stolten:** What about oily water, sludge and other contaminants that might have accumulated on the ship?

**Martecchini:** It is the yard's responsibility to make sure that contaminants are not spilled on the beach or anywhere else. Fuel, oil,



*A ship must be properly prepared – that's where the Green Passport comes in.*

waste oil and oily water must be recycled in compliance with MARPOL Annex 1 regulations. Special government-approved contractors handle these contaminants. All oil and fuel tanks, for example, are cleaned and vented by the yard, and then inspected by local authorities before any cutting and dismantling work is permitted – here again, evidence of welcome new regulation. People often assume that the ship is just sliced open and whatever is inside spills out. That is simply not the case with the yards we work with.

Let's also not forget that when a Stolt parcel tanker comes to the end of its working life, it's not some trashed out hulk that has been neglected for the last five years. A Stolt ship meets the same exacting standards of performance on its last voyage that it does on its first. Our customers wouldn't have it any other way and neither would we. The ship is maintained to rigorous commercial and environmental standards from start to finish. By the way, it's a tough thing for our officers and crews to run a ship up on the beach. As noted in the Ship of the Year article in this very issue, many of these guys have spent years pouring their hearts

and souls into operating and maintaining their ships. It's an emotional experience!

**Stolten:** To be sure. But if I may, how do we know that pollutants are not ending up on the beach?

**Martecchini:** Clearly, one of the reasons Alang became the mess that it did was because people turned a blind eye to the problem. That cannot be permitted to happen again. So we have a fairly direct way of determining whether or not the yard we use is operating in accordance with regulations and our demands: we go and look with our own eyes! We are now conducting two on-site inspections for each ship we recycle. This includes an inspection scheduled for August (2009). While we are there we will review laboratory test results of samples taken from the beach over the summer. We'll also take a good look around, with a checklist and a camera. Do the workers have the right safety equipment? Is there any evidence of spills? Has asbestos been properly tagged, bagged and sent to the right facility for disposal? It's a very comprehensive audit process, not entirely

unlike the approach we use when auditing a shipyard during the construction of a newbuilding.

I should also add that the Gujarat Maritime Board periodically spot checks and analyses samples all along the beach where recycling activities take place. These inspections help to ensure that the yards perform their work in accordance with environmental requirements.

**Stolten:** *An ounce of prevention, it's been said, is worth a pound of cure. Are we doing anything to make the recycling process easier in the future?*

**Martecchini:** We are. For example, all of our newbuildings have been asbestos-free since the early 1990s. And consistent with IMO regulations, we have stopped using TBT (tributyltin) antifouling paints and BFRs (brominated flame retardants). And in cases

*The Green Passport tells the recyclers exactly what they are dealing with and where it is on the ship.*

where hazardous materials are called for, we are careful to use the minimum amounts required. We also have begun inventorying all hazardous materials used in the construction of our newbuildings, starting with the N43s and the C5s.

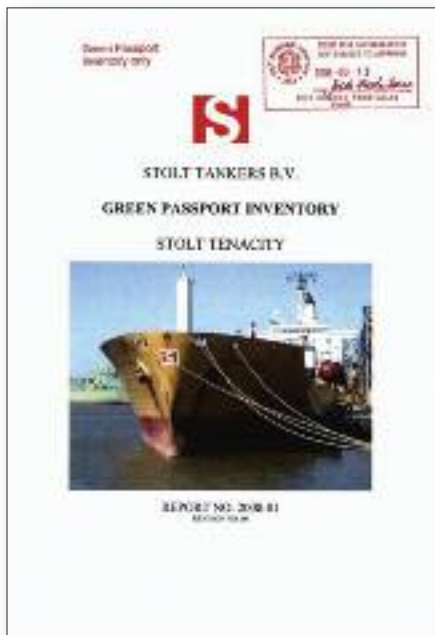
One of the great ironies about ship recycling, despite its bad but, I hope, improving reputation, is that it is very efficient. Studies show that upwards of 90 per cent of a ship's total weight is recyclable. In fact, over 80 per cent of a ship's steel is typically reclaimed, usually for construction materials. And much of a ship's equipment can also be resold, such as lifeboats, machinery, generators, furniture and fixtures. By comparison, less than 40 per cent of household waste – and that's probably a generous estimate – is considered recyclable.

For a long time, our industry had good reason to be embarrassed about the state of ship recycling. And we are not out of the woods yet. There are plenty of recycling yards out there willing to sacrifice the safety of workers and the environment to make a profit. But let's also understand that those yards could not survive without the complicity of their customers.

That said, I'm proud of what our ship recycling team is achieving and the progress that has been made. Ship owners used to sell their vessels, turn their backs and walk away. We at Stolt are playing an active role to ensure that our ships are properly recycled in a way that is safe for both the workers and the environment.



ABOVE: An overview of the shipyard, with ships in the background and a piece of land in the front where the shipyard stores equipment and even sells it on the second-hand market.



LEFT: The front page of a verified Green Passport Inventory (GPI).

BELOW: Dismantling of pipes on the main deck by shipyard personnel – even the hardhats are being recycled and used!



#### THE ST&T RECYCLING TEAM

ST&T's recycling activities involve a number of key shore personnel, in addition to the officers and crew of the ship itself, who play a key role in preparing the ship for the recycling yard.

They are:

##### Loek Dejong, Project Engineer

- Oversees the complete recycling process from beginning to end;
- Completes and submits the Green Passport to class for verification;
- Provides local authorities with all information required for the "desk review" prior to the ship's arrival in India, enabling proper auditing and verification of the ship's situation, and compliance with regulations.

##### Gosia Lewandowska, Senior Business Analyst – Planning and Projects Department

- Oversees the sale of ships to recyclers and maintains ongoing contact with existing and potential buyers.

##### Greg McKenna, Superintendent and Surveyor

- Surveys all ships to be recycled and compiles all required documentation for the Green Passport;



(l. to r.) Greg McKenna, Gosia Lewandowska and Loek Dejong.

- Conducts audits of existing and potential recycling yards and executes on-site inspections (intermediate and final) for each ship that is recycled.

##### Superintendent of the ship scheduled for recycling

- Oversees all onboard recycling preparations, including: removal and coordination of equipment and/or materials designated for future use or recycling; cleaning of the ship; marking of asbestos; and preparation for the audits carried out by Indian authorities before granting permission for beaching.