

The cruise industry has long faced tough challenges, and one of the biggest facing the industry today is that of incorporating eco-friendly technology into new as well as mature ships.

The need for positive environmental practices sees companies faced with having to supply a universally high-quality product, while responding to ecological demands and honouring promises made in corporate responsibility statements.

Today's cruise ships have to be able to attract passengers without having a negative impact on the environment. It is a difficult balancing act, but one the major cruise lines have invested in heavily. Pressure from legislators, flag, port and coastal states, environmental groups and guests, is having a big effect on the way the cruise industry sees its environmental responsibilities.

'More ships certainly means more pollution,' says Terri Shore from environmentalist group Friends of the Earth, which is pushing for stricter regulations on the cruise industry. 'There are very few enforceable standards on cruise ship dumping and air pollution.'

Environmentalists claim a typical cruise ship on a one-week voyage generates: more than 50t of garbage; 210,000 gallons of sewage; one million gallons of 'grey water' from sinks, showers and galleys; and 35,000 gallons of oil-contaminated water. Much of this waste is dumped directly into the ocean.

Legal issues

Cruise ships have been accused of illegal discharges of oil, rubbish and hazardous waste in the past. Following a litany of dumping complaints and accusations of bypassing pollution equipment, the industry was severely fined for illegal dumping in the 1990s and early 2000s. It has now cleaned up its act.

Mere compliance is no longer enough for the cruise lines, according to many observers. As Pieter Rijkaart, director of new builds for Holland America Line, explains, they have to go above and beyond the basic requirements. Nothing but excellence will do. 'Holland America Line demonstrates its commitment to responsible environmental practices through a comprehensive fleetwide

programme that emphasises compliance with all international environmental guidelines, waste reduction and recycling,' Rijkaart says. 'It has a history of embracing new environmental technologies, such as state-of-the-art water treatment systems and shore power while ships are in port, and it has an internationally recognised whale strike avoidance programme.'

In June 2006, Holland America Line's Environmental Management System received the international ISO 14001 certification. According to Rijkaart, this 'demonstrated that the company conforms to higher standards than those required by the letter of the law'.

He adds: 'Whether it is about generation, consumption, treatment or disposal of water, our solid waste management hierarchy or our fuel consumption and emissions, our ISO 14001-compliant approach has helped us to develop measures for what we're doing, and then drive improvements throughout the fleet.'

Indeed, in keeping with its ISO certification, Holland America Line's ships currently meet or exceed all provisions of

Environmental INVESTMENTS

The need for eco-friendly tourism in the cruise industry is indisputable. But how do companies implement this without increasing costs and compromising their product? Steven Jones hears from **Pieter Rijkaart**, director of new builds for Holland America Line, how onboard technologies can help the industry protect the natural environment.





Antarctica's pristine wilderness could be damaged by increasing cruise ship visits.

the international regulations governing the environmental management of marine operations. An environmental officer serves on each ship to oversee shipboard compliance and procedures.

It is not just the company policing this environmental compliance. 'Each Holland America Line ship undergoes a strict port and flag-state annual inspection and a mandatory environmental audit, by both an outside environmental auditing firm and internal staff,' says Rijkaart.

Performing to the letter of the law and beyond is becoming a market imperative. 'Holland America is targeting reductions in solid waste and an increase in recycling rates,' Rijkaart says. 'It has started to use more environmentally friendly and biodegradable oils where machinery interacts with, or is in close proximity to, the water.'

Technology investments

In the struggle to consistently achieve environmental excellence, Rijkaart says it is crucial to innovate and push ahead of the field. 'When Holland America Line's MS *Zaandam* recently set sail for Alaska, it became the only cruise ship at sea to feature new cutting-edge emission reduction technology,' he says.

The equipment was installed during the cruise ship's two-week drydock. The project was instigated by Holland America Line in co-operation with Canadian and US government and regulatory agencies to demonstrate the feasibility of using seawater to 'scrub', or reduce, ship engine emissions.

The ability and willingness to innovate, collaborate and to acknowledge the importance of environmental excellence is what keeps Holland America Line on track to achieve all its environmental benchmarks, and what puts it at the forefront of such efforts. '*Zaandam* is a ship like no other in the cruise industry,' says Rijkaart. 'Once we have analysed the data and made the necessary modifications to the ship's new test emissions technology, it could dramatically change not only the cruise industry but the entire maritime industry by reducing ship engine emissions.'

The cutting-edge scrubber system uses the natural chemistry of seawater to remove virtually all sulphur oxides (SOx), as well as significantly reducing particulate matter emissions. The seawater is then treated to

The people side

However, Rijkaart is quick to recognise that technology is not the only answer to protecting the environment. 'Technology alone cannot solve anything until we balance it with the people side of the equation,' he says.

The demands on cruise ships are rightly severe, especially as many vessels begin to traverse ever more sensitive areas, such as Alaska and Antarctica. Cruise ships, it seems, are everywhere. Not only that, but they are getting bigger and taking more and more people into these delicate and remote environments.

There is also something of a dichotomy to manage: with the increased vessel sizes and passenger numbers there are instances where the storage

Case study: Royal Caribbean and the Oceana campaign

Oceana, an international organisation that campaigns to protect the oceans and sealife, launched a Stop Cruise Pollution campaign in May 2004 to persuade Royal Caribbean to install advanced wastewater treatment onboard all its ships. In April 2005 the cruise line agreed, becoming the first company to commit to upgrading sewage and wastewater treatment across its whole fleet. The commitment means that:

- All 29 of the company's cruise ships will be fitted with advanced wastewater treatment technology by 2008, and this technology will be installed on all new ships.
- The results of third-party audits of Royal Caribbean's wastewater treatment will be made public.
- The 25,000 gallons of sewage and 255,000 gallons of grey water (from showers, dishes and laundry) that a single cruise ship can generate every day will be treated to higher standards before the waste is released in the ocean.

remove harmful components while calcium carbonate (CaCO₃) in the seawater renders the sulphur oxides harmless through conversion to sulphates and neutral salts.

While it all sounds straightforward, the equipment is far from cheap. The emissions-scrubbing technology costs more than \$1.5 million. 'This project shows how the Holland America Line focuses on new technologies and best practices to bolster our existing award-winning environmental programmes,' says Rijkaart. 'We will continue to go above and beyond international requirements in the operation of our vessels, as we have for many years.'

'We are also looking at ways to make installed technology more reliable,' he adds. 'This philosophy spans all we do, from making sure we have the right equipment (and spare parts) to do the job, to having the right training and ship staffing to operate and maintain that equipment'.

capabilities for waste, sewage and garbage are actually reduced. The stresses and frustrations of many a shipboard environmental officer form a difficult conundrum, but one that has to be addressed and solved.

The Cruise Lines International Association (CLIA) is adamant that the cruise industry today recognises that the environment is shared and that, for the industry to continue to prosper, cruise lines and ships must be 'good stewards, and good neighbours'.

The technology to enable this is emerging, laws are getting tougher and cruise lines appear ready to accept that, to stay in the game, there really is no alternative but to be environmentally sound. With innovators and leaders such as Holland America Line placing such an emphasis on environmental protection, it seems the industry has come a long way. **wc**