



Managing waste in the cruise industry is not just about meeting best practice guidelines. According to environmental director of Carnival Cruise Lines, Elaine Heldewier, it is about continuous improvement, writes Jodie McLeod.

# Trim your waste line

Cruise ships make up around 12% of the entire maritime community, but as symbols of an extravagant tourism industry in a waste-wary world, they are the most scrutinised vessel family when it comes to the monitoring waste output and its affect on the environment.

As with land-based establishments, cruise ships produce a lot of waste. One study by environmental organisation Bluewater Network found that, per week, a large cruise ship on average generates 210,000 gallons (800 kilolitres) of human sewage, one million gallons (nearly four megalitres) of grey water (water from sinks, baths, showers and laundry) and more than 130 gallons (500 litres) of hazardous wastes. As cruise ships continue to grow in size both waste output and the ensuing criticism from green activists will proportionally increase.

The need to meet international waste management protocols such as the International Convention for the Prevention of Pollutions from Ships (MARPOL), as well as domestic laws and ISO-quality management standards, is as paramount as

ever. But environmental director for Carnival Cruise Lines, Elaine Heldewier, says that if cruise lines are to make a quantifiable difference to waste output, operators need to exceed compliance and make waste minimisation a fundamental part of overall company values.

'If you are responsible for making waste, you are responsible for managing it,' she says.

Honouring this philosophy – and Carnival's 2002 commitment to a rigorous environmental compliance plan following its infamous \$18 million fine for illegal discharges in the same year – Carnival became ISO-14001 certified in 2006. The quality assurance 'tick' certifies that Carnival not only meets the various regulations and best practice benchmarks relating to minimising waste, but that its environmental management strategies actively set out to reduce the cruise line's effect on the environment on an ongoing basis. To stay at the top of its game, Carnival is continually researching, pilot-testing and implementing the latest waste management technologies and systems.

'You always have to go with the times, and get better and better, otherwise you don't grow,' says Heldewier.

## The problem with ports

While the cruise industry is working tirelessly to improve and maintain piety to the environmental cause, insufficient reception facilities at some ports around the world can stunt this.

In response to global complaints claiming many port reception facilities to be inadequate, the Marine Environment Protection Committee (MEPC), part of the International Maritime Organisation, proposed a plan in 2006 to improve port reception facilities worldwide. But Heldewier says the cruising community is yet to see the fruits of the plan.

'Not all ports have recycling available. Some provide services, but once you do an inspection you realise there are better ways to manage it than what they're offering,' she says.

'When that happens we try to hold on to the recyclable material for as long as possible, but sometimes we have to land recycling as a solid waste.'



'Things can change, but it takes time and you have to be very proactive,' observes Heldewier. 'We have worked closely with some ports where we land the materials, and in the last ten years I can say that most of the items that we can recycle are being recycled.'

### New technologies

As part of Carnival's commitment to ISO 14001, the cruise line must continuously strive to reduce its waste output, and central to this is keeping abreast with the latest technologies. Many of the waste management technologies introduced into Carnival's fleet are concerned with prevention rather than cure. In minimising grey and black water (sewage), for instance, Carnival has adopted the view that less is ... less. 'The less water we use, the less water we'll have to buy, and the less we'll have to discharge,' says Heldewier.

stream and you've then got to work out a way to manage that,' she says. Cruise lines which use scrubbers then have to store the wastewater in a tank before treating it and discharging it back into the ocean.

'On a ship you have limited space available, so it's easier said than done,' says Heldewier.

The use of low sulphur-producing fuel, the most popular means of reducing sulphur emissions in the cruise industry, also comes with some environmental consequences. The process of distilling crude oil to make the fuel leaves refineries with a type of waste fuel that is unusable.

'With all these issues, you have to look at the big picture,' says Heldewier. 'How is [what you're doing] affecting a particular region of the world, but also how is it affecting the whole world?'

Looking at the big picture has led Carnival to the goal of sustainability. In

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Lack of communication between port authorities and waste disposal and recycling vendors also means vessels must repeatedly research vendor options before landing, wasting time and money on a process that could be coordinated at port level.

With the view of consolidating such information, the MEPC established a port reception facilities database in 2007, but it has yet to be fully utilised.

There are also issues with the fee structures of some ports that generate unnecessary expenses for cruise ships. At some ports, such as in the Mediterranean, it is mandatory for vessels to land hazardous waste.

When sailing from between ports in close proximity, cruise ships will often not have any waste to land, but are required to pay the fee regardless.

'From an operator's point of view it can be very frustrating,' says Heldewier. 'That's where countries need to coordinate and respect the each other's protocols.'

Effecting change on issues such as these takes time, and a great deal of effort on the cruise line's part to nurture the port and ship relationship.

Water saving technologies are found throughout Carnival's cruise ships, such as vacuumed toilets and low-flow faucet aerators on water outlets.

In minimising emissions, Carnival is also looking at ways to reduce the amount of fuel used. As well as designing more fuel-efficient itineraries, the cruise line is pilot-testing a computer system that will make vessels more aerodynamic and lessen fuel consumption.

Carnival will also, along with the rest of the maritime industry, have to further reduce sulphur oxide and nitrogen oxide emissions and particulate matter over the next decade in accordance with MARPOL Annex VI, revised in 2008, which relates to air pollution.

Some cruise lines are already implementing scrubber technology on board their ships, a system in which the natural chemistry of seawater is used to 'scrub' the sulphur out of a ship's exhaust gases. Heldewier has reservations about this equipment.

'When you use scrubbers, it's really just transferring the sulphur from the exhaust to water, so you're creating another waste

the Carnival of the future, environmental factors, human resources, community and commerce will seamlessly collaborate to create a lasting and profitable operation.

The cruise line is even researching the viability of solar and wind turbine technology for ships and is set to release a sustainability report in 2010 detailing more solutions for the future.

'Sustainability is a good model because it makes an organisation see the environment as the way to promote efficiency. You will try to use less natural resources and when you do this you have less expense,' says Heldewier. 'You can also use [the concept of sustainability] as a big driver for improvement.' [wc](#)

#### Elaine Heldewier

Elaine Heldewier joined Carnival in 1999, and in her current position as environmental director oversees the environmental operations for a fleet of 23 cruise ships. Her main responsibilities include developing and implementing environmental programmes and policies. Elaine was an integral member of the Carnival group responsible for obtaining ISO-14001 fleet certification in 2006.