

## **Keeping the Cruise Tourism Responsible: The Challenge for Ports to Maintain High Self Esteem<sup>1</sup>**

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Cruise tourism is perceived by most ports and governments as a potential source of revenue, a perception reinforced by industry claims that each cruise passenger spends on average US\$100 per port call. Rather than first test the assumption, ports make huge investments in facilities and infrastructure to accommodate cruise ships and their passengers believing revenues will far counterbalance costs. This view is in stark contrast to a recent study that found passenger spending in Belize averaged US\$44. By comparison, stayover sector visitors spend on average US\$96 per person per day. Though stayovers are only 25 percent of tourist arrivals they account for 90 percent of the employment in the tourism sector (CESD 2006:14).

A key challenge for most ports embracing cruise tourism is to maintain their self esteem. Too often, they appear blinded by the huge ships gracing their harbours that offload their human cargo. They forget cruise tourism is a business from which they should earn significant revenue. After all, cruise lines are earning huge profits, even in these economic times. Carnival Corporation alone, which controls 53 percent of the North American market, cumulatively earned over US\$9 billion in net profit over the past four years (2006 – 2009).

Embracing cruise tourism appears at first blush to be a good business decision, but governments and communities tend to overlook or minimize the downside. The cruise industry in contrast has an enviable business environment where ports compete for cruise ships and cruise lines negotiate deals most favourable to their economic bottom line. If the deal with one port isn't optimal a ship's mobility means it can go someplace that will give a better deal. Ports as a result often earn less than expected – there is an inequitable division of revenue between the cruise ship and the port. There are a number of possible

reasons. One is that increasingly ports are in direct competition with the cruise ship for passenger spending.

### **The Economics of Cruise Tourism**

Carnival Cruise Lines revolutionized cruising in the 1970s when it introduced onboard revenue as a significant element of the cruise product. Carnival opened larger casinos and discos on board its ships and devised new ways to generate onboard income. This was the beginning of the “fun ships” concept; devised less as a grand plan and more as an immediate strategy for generating enough income to meet weekly payroll. By the 1990s, most cruise lines had a manager of onboard revenue whose job was to oversee generation of income onboard and to seek new venues for generating revenue. Modern cruise ships were on their way to becoming “... little more than floating bedfactories with shops and restaurants attached. Time spent at sea is simply a matter of getting from A to B with an emphasis on cajoling those trapped inside into spending their money on shopping, drinks, and other extras” (Ashworth 2001).

Cruise pricing in the 2000s remained somewhat stable but corporate profits continued to increase significantly. Onboard revenue had become a key element in the new economic reality of cruise tourism. Income previously made from ticket sales is now generated after passengers are onboard. Cruise columnist Mary Lu Abbott warned in November 2004 “extras can cost more than then cruise” (Abbott, 2004). Onboard revenue has continued to grow.

A 2002 report from the U.S. Federal Trade Commission succinctly captures the most recent shifts:

“Cruising has evolved from a minor offshoot of the oceanic passenger industry of the past into a broad-based vacation business ... Today's cruise ships, bearing a far stronger resemblance to floating luxury hotels, or even amusement parks than to traditional ocean liners, offer their thousands of passengers amenities such as full scale, “Main Street”-style shopping districts, multiple restaurants, spas, basketball courts, and even ice skating rinks and rock-climbing walls.” (Federal Trade Commission, 2002)

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A typical cruise ship today is in a manner of speaking a 1500 room resort with lifeboats – about equal in guest capacity to six of the largest resorts on St. Lucia combined: three Sandals properties, two Almond resorts, and the Westin Le Paradis. And they are large. Royal Caribbean's Freedom-class ships, first introduced in 2006, carry more guests than can be accommodated at the seven Sandals resorts on the island of Jamaica. Royal Caribbean's Oasis of the Seas, debuting in 2009, will accommodate almost as many people (passengers and crew) as the population of San Ignacio, Belize. Today cruise ships dwarf land-based resorts in the number of people accommodated and do this in a fraction of the space.

Onboard revenue has also become large.<sup>2</sup> In 2006, the Big Three cruise operators had combined net revenue of \$3.5 billion from onboard revenue. That translates into a profit of \$43 per passenger per day (more profit than generated from ticket sales) and constitutes 24 percent of the total net revenue for all cruise companies combined; the percentage is significantly higher for many of the U.S.-based mass market cruise lines (Cramer, 2006). The industry's perspective is reflected in what one speaker said at the industry's annual trade show in Miami, Seatrade Cruise Shipping Convention: "Never give away something you can charge for, as long as you can provide a really good experience. Consumers are willing to pay for a quality experience" (Seatrade Insider 2007).

#### *Shoreside Spending as Onboard Revenue*

A major source of onboard revenue is derived from onshore activities, particularly from shore excursions and port shopping programs. Shore excursions – land-based tours sold by the cruise ship – accounted for 30 percent (\$100 million) of Royal Caribbean International's 2002/2003 profit of \$351 million. A typical Royal Caribbean ship generated close to a half million dollars in tour income with a single call at St. Petersburg, Russia (Peisley 2003:5). Income from shore excursions, like other sources, has continued to increase.

Shore excursions are convenient for passengers (between 50 percent and 80 percent buy an excursion in each port) and provide solid revenue to the cruise line in the form of sales commissions. In some locales as little as ten

percent of the amount collected for a shore excursion is paid to the person providing the tour; in others it is more commonly a 50/50 split. At the extreme, a shore excursion costing a passenger US\$99 may yield the in-port provider \$10 or less (CMC 2007). The cruise line and its shore excursion concessionaire share the remainder. This leaves the shore excursion provider in the uncomfortable position of being paid \$10 for a product that passengers expect \$99 of value. If passengers are disappointed, they blame the port; not the cruise ship.

Port-based shore excursion providers are further marginalized by the terms of their contract with cruise lines. Carnival Cruise Lines' standard contract, for example, gives the cruise line the authority to refund the cost of an excursion to a passenger who complains and the ship charged the refund back to the shore excursion provider, even if the complaint is unfounded. Further, the land-based provider is only paid for tickets they collect from passengers. This means that the cruise line keeps all monies it collects, even when a passenger loses his/her ticket and allowed on the shore excursion anyway or when a passenger is a no-show.

The same companies that provide shore excursion programs offer port lecture and port shopping programs. Along with lectures on shore excursion options, passengers learn about shopping, are provided a map with preferred stores and are advised that they will get the best prices at the recommended stores. Passengers on shore excursions are also taken to preferred stores which pay hefty fees and may also kick back money to tour guides.

Onboard promotion of shore side shops evolved into a mini industry by the mid-1990s, and continues to thrive today. They formalized a system whereby the cruise line captures significant income it had been missing. "What used to happen is that the tour directors on a major line would earn a quarter of a million dollars a year in royalties from port merchants" (Reynolds 1995: L-2). Now, the money is collected as an annual promotion fee and/or a commission fee for all sales and it is shared between the concessionaire and the cruise line. The largest, Onboard Media, is owned by Louis Vuitton Moet Hennessey (LVMH).

#### *Is Anything Left for Sending Onshore*

There is little question the cruise industry has effectively constructed a system for separating cruise passengers from their money. As a

<sup>2</sup> For a fuller discussion of onboard revenue sources see Ross A. Klein. 2008. *Paradise Lost at Sea: Rethinking Cruise Vacations*, Halifax, NS: Fernwood.

business, they have done well for their owners and stockholders. But what are the implications for ports used by the ships? They, too, depend on passenger spending for their income, but as the ship takes a larger piece of the pie they are left to be content with the remaining crumbs – money passengers resisted spending onboard.

Not only do ports compete with the cruise ship for passenger spending, they also compete with one another. Consequently most ports find they earn much less than expected. This disappointment is reflected in local media coverage – the President of the Federation of the Small and Medium Businessmen in Cartagena, Spain, following a cruise ship visit, said he took a sample of five shops in town centre and found total sales to all tourists combined amounted to no more than Euros 39 (h.b. 2007); and in Tasmania, a ship that was touted as bringing passengers who would spend more than \$150 per person, in reality had businesses reporting lacklustre trade. Predictions of steady streams of business through the door of local businesses had not materialized (Duncan 2007). Projections that 50,000 cruise passengers and crew members would spend more than \$7 million in the state in 2007/08 was beginning to be viewed with skepticism.

Many ports agonize over schemes to improve spending by cruise passengers, but they rarely look at ways their plans are undermined by the context. The most obvious question is whether passengers have any money left for spending onshore given the range of spending options onboard. This is particularly salient given that cruises in the 2000s attract a wider segment of the population, including people who choose a cruise over a land-based vacation because it appears to be a better bargain (based on the advertised selling price) and, bottom line, is affordable. Many of these folks save for years for their “cruise of a lifetime” and have limited funds after paying for the cruise itself. Their spending onboard will most certainly influence their ability to spend onshore.

An even larger problem, as mentioned earlier, is the uncritical acceptance of the assumption that cruise passengers on average spend US\$100 in each and every port of call. On this basis, ports and national governments extrapolate the cruise industry’s economic impact. Few undertake independent empirical research to determine actual passenger spending. As a result, they make plans based on the grand claim. When they realize there is less passenger spending than they believe is the norm, ports think they are getting the short end of the stick and blame themselves for not

generating the kind of income promised. For example, in the Bahamas, where average spending is estimated to be \$60 per passenger per port of call there is great effort to find ways to bring spending up to par with what they perceive is received by the island’s neighbours (McCartney 2007). The furthest thing from the government’s mind is that \$60 is the norm for passenger spending, even with its neighbours. Empirical study of passenger spending is severely limited and sorely needed.

The bit of research that has been done suggests passenger spending in the Caribbean is going down rather than increasing. A 1994 study commissioned by the Florida-Caribbean Cruise Association (FCCA) found passengers, on average, spent \$372 on the island of St. Thomas (see Huie 1995: 50). The average for the Caribbean region was \$154 per passenger per port. Another study done for the FCCA six years later found that spending on St. Thomas had fallen to \$173 per passenger; the overall average in the region decreased to \$89.72 per passenger per port (PWC 2001). Excluding Cozumel and St. Thomas, spending per port ranged from \$53.84 to \$86.81 with an average per port of \$72.81.

Despite significant decreases in spending over the 1990s, and levels of spending well below the \$100 expectation, ports still act as though cruise passengers spend \$100 in each port of call. Perceptions are hard to change, especially when the cruise industry continues to tell ports to expect the higher figure. This is not unique to the Caribbean. Ports worldwide have adopted the \$100 per passenger figure and they appear surprised when their research proves otherwise. A study in Croatia in 2007 found passenger spending averaged Euros 41.44 (less than US\$60). The study further found that spending varied widely between different ports, between different ships, and with the time of day and length of stay of a port call (Marusic et al 2009). While Dubrovnik and Korcula had average passenger spending of Euros 36.65 and Euros 34.11 respectively, passengers in Split spent an average of Euros 70.51 and in Zadar an average of Euros 82.16.

The Croatia study is one of the few in recent years based on data gathered directly from passengers by an organization not sponsored by the cruise industry. Its findings are similar to those from research done in Central America by the Centre on Ecotourism and Sustainable Development. Cruise passenger spending in Costa Rica (including that spent for tours) averaged

\$74.84 for each passenger who went ashore but when adjusted for the number staying onboard onshore spending averaged \$44.90 for all passengers aboard cruise vessels (CESD 2007: 67). And as already mentioned, passenger spending in Belize was much the same: \$44 per passenger (CESD 2006: 14).

#### *Maintaining Perspective*

With promises of significant economic benefit, most ports are quick to develop or expand capacity for cruise ships. They listen to the cruise industry and often consider themselves fortunate to have a cruise ship bless them with a port call. The mayor of Campbell River, British Columbia reflects this view when he stated: "Everyone is very excited ... To be selected as a port of call is a real honour and it creates a rather glamorous side to our community." The \$14 million cruise terminal, built with public funds, opened in 2007 but has failed to lure many cruise ships – it had a couple of calls from small ships in 2007 and in 2008, but even these have changed plans for 2009 (Wilson 2008). There are several reasons for the port's difficulty, not least of which is that ocean currents and the nature of the approach to the port are difficult for navigation. These were known to be issues before construction was undertaken.

Ports tend to suffer from two problems. First, like Campbell River they believe the adage, "if you build it they will come." They don't think about whether they are marketable and they tend to ignore the fact that increasing the supply of ports potentially decreases the value of other ports in the area. Second, ports fail to realize that they have more power, in some respects, than the cruise industry – that cruise ships need ports more than the ports need them. Passengers take a cruise with expectations to see new places. If these places are not offered then a cruise loses its attraction. Most passengers prefer a day in port over a day at sea and would not take a cruise if there were no ports of call. This potentially gives ports an inordinate amount of power in their relationship with the cruise industry. If ports work together they can all derive greater benefit.

The problem however is that the cruise lines effectively place ports in competition with one another for cruise ship visits and while the industry maintains a degree of solidarity ports are willing to undercut one another in order to secure their piece of a finite pie. St. Vincent's Tourism Minister Glen Beache warned in October 2007 that unless the Caribbean region develops a united

approach it would continue to not benefit significantly from the cruise sector. He pointed to a recent case where a cruise line had negotiated a certain arrangement with his government but never arrived after it was offered free water and garbage disposal and a reduced head tax by one of its neighbours. Further, he commented that it was like pulling teeth to get a cruise line to contribute to the upkeep of sites where cruise visitors frequent, especially sites that are relatively unused by locals and stay over visitors. He concluded: "We have to stop stabbing each other in the back and find common ground in our negotiations with the cruise sector as this is the only way we will obtain maximum benefit by working together" (CMC 2007). This aversion to cooperation and collective action was also seen in relation to the Caribbean Tourism Organization's idea of a \$20 levy for all passengers cruising to the Caribbean. The plan died before it was fully aired because several governments broke solidarity in favour of benefits offered to them individually by the cruise industry (see Klein 2005: 117–120).

#### *The Case of Belize*

In some cases, ports undercut themselves. In November 2001, Royal Caribbean invested \$18 million for co-ownership of the Fort Street Tourism Village. The Village is where all cruise passengers are tendered from cruise ships. The cruise corporation worked out an enviable arrangement. Eighty percent of the \$5 port charge goes to Tourism Village. With \$4 for every cruise passenger landed, Royal Caribbean will recoup its investment in six or seven years. Thereafter the net cost to Royal Caribbean will be \$1 per passenger, giving its ships a competitive advantage. On top of that, local expectations that local businesses would be used to ferry passengers from shore from cruise ships evaporated when Royal Caribbean announced local boats were not adequate for the operations. Instead, principals associated with Royal Caribbean established a company for that purpose.

A second cruise terminal was announced for Belize City in September 2003. The \$50 million project is a joint business venture of Belize Ports Ltd and Carnival Corporation and is now expected to open in 2010. Carnival has an option to also develop a 50-room hotel and casino adjacent to the terminal. Construction had been delayed when terms of the contract between Carnival Corporation and the Government of Belize were

made public in October 2004. A number of issues were of concern:

- Except for the Carnival passenger fees (80 percent of which is rebated to Carnival), no fees of any kind shall be imposed (i) on the Belize Cruise Terminal, Carnival, or Belize Ports Limited; or (ii) on any cruise ships of any of the Carnival Lines calling at any port located within Belize.
- There will be no limit (other than those already in place) on the number of cruise passengers arriving on Carnival lines;
- Carnival is not required to employ Belizean entities, nationals, or government agencies for navigation or docking, and in respect to the Project and/or any of its business operations.
- The contract is for 20 years and automatically renews for another 10;
- Passenger head taxes may increase to \$7 in May 2005, but no further increase is permitted until 2010. Thereafter, increases can not exceed 3 percent per year for the next 24 years.
- The terminal is entitled to all tax exemptions and other benefits available to a free zone business under the Commercial Free Zone Act. Carnival avoids taxes and red tape. The government procures, on an annual basis, a license for cruise ships to each of the Carnival lines.
- Carnival will explore opportunities to develop additional ports and commercial facilities in locations throughout Belize, including Commercial Bight and Punta Gorda in the southeast of Belize.<sup>3</sup>

Following public uproar, some minor changes were made to the terms of the contract, but Carnival still had a golden deal.

The Carnival-owned terminal is planned to accommodate two ships and includes a welcome center with 200 spaces for gift shops, restaurants, and other stores and a transport hub for hundreds of buses and taxis (Belize Times, 2003) – all of these provide revenues to Carnival Corporation as they rent space to local businesses and shift commercial activity from downtown to the cruise terminal. Under terms of its contract with the Belize Government Royal Caribbean receives \$4 for every passenger landed at Carnival's new terminal. But Carnival's contract doesn't require it

<sup>3</sup> See Agreement executed April 29, 2004 between Government of Belize, Carnival Corporation, Belize Ports Limited, and Belize Cruise Terminal Limited.

to pay the fee – like Royal Caribbean it is rebated \$4 for every passenger landed at its new terminal.

As a result the Government of Belize is on the hook for the 500,000 passengers Carnival brings each year and is required to pay Royal Caribbean US\$2 million. The money will likely come from the country's general tax fund, meaning Belize citizens will be generously subsidizing cruise tourism in the country (Schulte, 2004). When Carnival's terminal is completed, the daily cap on cruise passengers will double from 8,000 to 16,000. Curiously, the 8,000 passenger cap was imposed after Belize realized that up to 13,000 cruise tourists were arriving daily (Immen, 2004).

The contract between the Government of Belize and Carnival was unsuccessfully challenged in Belize's Supreme Court by tourism groups (Heusner, 2004). But the delays led Carnival Corporation to make plans for an almost identical project at Roatan, Honduras, no doubt reflecting a desire to use the Roatan base to exert pressure on the Belize Government to extract concessions it wanted.<sup>4</sup> Carnival Corporation has a similar project of terminal ownership in Turks and Caicos, however the plan for a similar terminal in St. Thomas was canceled by the governor after initially being approved the legislature (Klein, 2005). He stated that although the project "has many merits, I believe it is important that the Virgin Islands maintain full control of its harbor and harbor development" (Morris, 2002).

### **Environmental Impacts of Cruise Tourism**

A second area of concern is whether the cruise industry's practices and impact on oceans and air quality reflect responsible tourism. The industry markets itself as a responsible steward of the marine environment, often asking why it would pollute when its livelihood depends on keeping the oceans pristine. The question is effective in deflecting attention from an environmental record – the North American industry has been fined more than US\$50 million over the past decade in the U.S. alone.

The industry continues to be cited for violations. In 2008, Alaska cited 35 violations of state water quality standards by Holland America Line, Norwegian Cruise Line, Regent Seven Seas Cruises, and Princess Cruises (see Juneau Empire,

<sup>4</sup> For a discussion of the industry's playing ports off against one another see Klein, Ross A. 2005. *Playing Off the Ports: How BC Can Maximize Its Share of Cruise Tourism*, Vancouver: Canadian Centre for Policy Alternatives.

2008a; Juneau Empire 2008b). In addition, Alaska cited cruise ships for 10 violations of air quality standards in 2008 (Golden, 2009). And there were other violations. On July 4, 2008 the Associated Press reported Royal Caribbean broke Alaska state law in discharging about 20,000 gallons of wastewater into Chatham Strait in Southeast Alaska more than three weeks before (ADN, 2008). And on September 14, 2008, the *Juneau Empire* reported the company violated the state's air quality standards twice in 2007 (Golden, 2008).<sup>5</sup>

Sadly, that which is illegal in the U.S. may not be prohibited elsewhere, and even if it is regulations are rarely enforced. The problem is that the marine environment is by some accounts under siege. Increasingly common are news stories of dying coral reefs, of dead zones in coastal oceans – more than 95,000 square miles (Diaz and Rosenberg, 2008), and of forms of sea life becoming extinct or seriously threatened. At the same time, the cruise industry continues to grow with little sign of slowing. While boasting profits of multi-billions of dollars and paying virtually no corporate income taxes, cruise lines appear to place increased profit above environmental protection. And they have been adept at avoiding legislation and regulations (see Klein, 2009).

#### *The Cruise Ship Pollution Problem*

A cruise ship is not the most environmentally friendly form of transportation. On average, a cruise ship discharges three times more carbon emissions than aircraft, trains, and passenger ferries:

“Carnival, which comprises 11 cruise lines, said in its annual environmental report that its ships, on average, release 712 kg of CO<sub>2</sub> per kilometer ... This means that 401g of CO<sub>2</sub> is emitted per passenger per kilometer, even when the boat is entirely full. This is 36 times greater than the carbon footprint of a Eurostar passenger and more than three times that of someone traveling on a standard Boeing 747 or a passenger ferry” (Starmer-Smith, 2008).

But the problem is greater than just CO<sub>2</sub>. A moderate-sized cruise ship on a one week voyage with 2,200 passengers and 800 crewmembers is

estimated to generate up to 210,000 gallons of human sewage (this would fill approximately six large swimming pools), one million gallons (the equivalent of 30 swimming pools) of gray water (water from sinks, baths, showers, laundry, and galleys), and eight tons of garbage (the weight of a school bus) (Copeland, 2008:2).

The cruise industry frequently claims that its pollution is only a small part of the problem given the proportionately larger number of other ocean-going vessels and that these vessels, too, produce waste. While this may be true for waste streams such as oily bilge water and emissions from burning fuel, it is not the case with other pollution. With its large number of passengers and crew, wastes such as sewage, gray water, solid waste, and air emissions from incinerators are substantially greater on cruise ships than on other ships – a Congressional Research Service report estimates that 24 percent of the solid waste generated by vessels worldwide (by weight) comes from cruise ships (Copeland 2008:5). In addition, because cruise ship operations tend to concentrate in the same geographic locations and along the same sea routes, their cumulative impact on local areas can be significant. Add to this the potential for, and reality of, accidental discharges and the environmental impacts of cruise ships are a serious concern.

#### *Cruise Ship Waste Streams Identified*

##### Cruise Ship Water Pollution

**Black water**, otherwise known as human sewage, is the waste from cruise ship toilets and medical facilities. A cruise ship produces more than eight gallons of sewage per day per person (EPA, 2008:2-1). The cumulative amount per day for a ship such as Royal Caribbean's *Freedom of the Seas* is as much as 45,000 gallons; over 300,000 gallons on a one week cruise. These wastes contain harmful bacteria, pathogens, disease, viruses, intestinal parasites and harmful nutrients. If not adequately treated they can cause bacterial and viral contamination of fisheries and shellfish beds. In addition, nutrients in sewage, such as nitrogen and phosphorous, promote algal growth. Algae consume oxygen in the water that can be detrimental or lethal to fish and other aquatic life (EPA, 2008:2-8 – 11).

**Sewage Treatment - Marine Sanitation Devices.** Sewage from a cruise ship traditionally has been treated by a type II marine sanitation device (MSD). Type II MSDs are the most common type of wastewater treatment systems on cruise ships and consist of flow-through devices that

<sup>5</sup> For a full list of known environmental violations see [www.cruisejunkie.com/envirofines.html](http://www.cruisejunkie.com/envirofines.html).

break up and chemically or biologically disinfect waste before discharge. Except in the U.S. where discharge of effluent from an MSD is permitted within three miles of the shoreline, under the International Convention for the Prevention of Pollution from Ships (MARPOL), discharge from an MSD must occur beyond four miles of the coast. Despite MARPOL's regulations, cruise ship discharges are not monitored so there is no basis on which to know for certain where treated sewage is being released.

Type II MSDs are supposed to produce effluent containing no more than 200 fecal coliform for 100 milliliters and no more than 150 milligrams per liter of suspended solids. Whether MSDs achieve that standard was called into question in 2000 when the state of Alaska found that 79 of 80 samples from cruise ships were out of compliance with the standard. According to the Juneau port commander for the Coast Guard, the results were so extreme that it might be necessary to consider possible design flaws and capacity issues with the Coast Guard-approved treatment systems (McAllister, 2000). According to a 2008 report from the U.S. EPA, the problems identified in 2000 with MSDs continue today (EPA, 2008).

**Sewage Treatment - Advanced Wastewater Treatment Systems (AWTS).** The cruise industry in recent years has adopted the use of AWTS (an advanced form of type II Marine Sanitation Device) on many ships – most often ships visiting Alaska's Inside Passage where such systems are required for continuous discharge in state waters. A ship with an AWTS avoids the need to travel outside Alaska state waters to discharge treated sewage. Installation of AWTS for ships visiting other waters with less stringent or no regulation has been at a much slower pace. For example, Carnival Corporation (which includes Carnival Cruise Lines, Holland America Lines, and Princess Cruises) had AWTS installed on slightly more than one third of its fleet at the end of 2007. But Carnival Cruise Lines, which sends only one ship to Alaska per season, has installed AWTS in only one of its twenty-two ships. The corporation's spokesperson says they try to make sure AWTS are included on ships that go to Alaska and to other sensitive areas.

AWTS are a vast improvement over MSDs — yielding what the industry refers to as drinking-water quality effluent. However this terminology must be treated with skepticism. Such water cannot be recycled for onboard human consumption nor can it be used in the laundry because sheets and towels apparently turn gray.

Both the EPA and Alaska have found that even the best systems still had difficulty with a number of constituents. A key problem is the AWTS do not adequately address nutrient loading, which means they pose similar problems as MSDs with regard to nitrogen and phosphorous. In addition, tests in Alaska have shown levels of copper, nickel, zinc, and ammonia that are higher than the state's water quality standards (Alaska DEC, 2004:29). The EPA also found AWTS sometimes exceed permitted concentrations of chlorine and tetrachlorethylene. As a result, 12 of 20 (60%) ships permitted to discharge in Alaska waters violated discharge limits in 2008, logging 45 violations involving 7 pollutants. These include ammonia, biological oxygen demand, chlorine, copper, fecal coliform, pH, and zinc (Golden, 2008; Juneau Empire, 2008).

Royal Caribbean stated in 2003 that, "two of the three prototype systems on our ships today have proven unsatisfactory and we will replace them with even newer prototypes" (Fain, 2003). Moreover, given that these systems are not regularly tested, except by Alaska, and that they are prone to breakdown and require constant maintenance and care, there is a need to be cautious with regard to where the effluent from an AWTS can be released. The need for caution is further supported by a 2007 study by the Washington State Division of Environmental Health that found, "AWTS can effectively remove bacteria but may not eliminate viruses that cause illnesses" (Washington State Department of Health, 2007). The report recommends no discharges should occur within 0.5 nautical miles of bivariate shellfish beds that are recreationally harvested or commercially approved for harvest, and that cruise ships should withhold discharge when a system upset occurs.

**Sewage Sludge.** Most type II MSDs and AWTS filter solids from sewage as part of treatment. This yields on average 4,000 gallons of sewage sludge per day (National Marine Sanctuaries, 2008: 43); cumulatively, it adds up quickly. It is estimated that 4.2 million gallons of sewage sludge are produced every year by ships as they pass through Washington State waters on their way to Alaska (King County Wastewater Treatment Area, 2007) – this is small compared to what cruise ships generate outside Washington state waters. In some cases (about one in sixteen ships with an AWTS), sewage sludge is dewatered and then incinerated. In other cases sludge is dumped at sea. These sludges have a high oxygen demand and are detrimental to sea life. Sewage

sludge poses the same problem as sewage, but in a more concentrated form.

A report issued in August 2003 by the California Environmental Protection Agency and the California state Water Resources Control Board said “it found ‘particularly troubling’ the discharging of sludge 12 miles out to sea” (Weiss, 2003; Cruise Environmental Task Force, 2003). This concern is in stark contrast to regulations elsewhere that define sewage sludge as treated sewage and permit its discharge as according to those criteria.

One option is to require sewage sludge to be dewatered and incinerated onboard, however incineration creates an air quality problem and the ash must be disposed of somewhere. Dumping the ash overboard raises new problems. Another option is to require sewage sludge to be held onboard and offloaded for treatment in port. Washington State has in recent years explored the commercial use and value of sewage sludge as a fertilizer, but no clear plans have yet been made (Port of Seattle, 2008). Clearly, a workable solution to the huge volume of sludge being dumped into the oceans – 28,000 gallons per week on an average-sized cruise ship – must be identified and implemented.

**Gray Water.** Gray water is wastewater from sinks, showers, galleys, laundry, and cleaning activities aboard a ship. It is the largest source of liquid waste from a cruise ship: as much as 90 gallons per day per person; over half a million gallons per day for a ship such as *Freedom of the Seas*. Like sewage, gray water can contain a variety of pollutants. These include fecal coliform bacteria, detergents, oil and grease, metals, organics petroleum hydrocarbons, nutrients, food waste and medical and dental waste (Copeland, 2008). The greatest threat posed by gray water is from nutrients and other oxygen-demanding materials. The cruise industry characterizes gray water as innocuous, at worst. A 2008 report from the Congressional Research Service disagrees. It states:

“Sampling done by EPA and the state of Alaska found that untreated gray water from cruise ships can contain pollutants at variable strengths and that it can contain levels of fecal coliform bacteria several times greater than is typically found in untreated domestic wastewater. Gray water has potential to cause adverse environmental effects because of concentrations of nutrients and other

oxygen-demanding materials, in particular.” (Copeland, 2008:4)

As recently as the 1980s ships were designed with pipes that directly discharged gray water overboard no matter where the ship was. Today gray water is more commonly collected in a holding tank and discharged, through a screen that filters out plastics, when a ship is one mile from the shore. Some vessels with AWTS mix gray water with sewage and they are treated together. This isn’t always possible. Gray water lacks sufficient nutrients for a bioreactor system to properly function so ships using this design release their gray water with limited or no treatment.

**Solid Waste.** A cruise ship produces a large volume of non-hazardous solid waste. This includes huge volumes of plastic, paper, wood, cardboard, food waste, cans, glass, and the variety of other wastes disposed of by passengers. It was estimated in the 1990s that each passenger accounted for 3.5 kilograms of solid waste per day (Herz and Davis, 2002). With better attention to waste reduction this volume in recent years has been cut nearly in half. But the amount is still significant, more than eight tons in a week from a moderate sized cruise ship. Twenty-four percent of the solid waste produced by vessels worldwide comes from cruise ships (Copeland, 2008). Glass and aluminum are increasingly held onboard and landed ashore for recycling when the itinerary includes a port with reception facilities.

Food and other waste not easily incinerated is ground or macerated and discharged into the sea. These “... food wastes can contribute to increases in biological oxygen demand, chemical oxygen demand, and total organic carbon; diminish water and sediment quality; adversely effect marine biota; increase turbidity; and elevate nutrient levels” (EPA, 2008:5-11). They may be detrimental to fish digestion and health and cause nutrient pollution (Polglaze, 2003). An additional problem with discharging food waste at sea is the inadvertent discharge of plastics. Under Annex V of MARPOL, throwing plastic into the ocean is strictly prohibited everywhere. Plastic poses an immediate risk to sea life that might ingest or get caught in it. It poses a longer term risk as it degrades over time, breaking down into smaller and smaller pieces, but retaining its original molecular composition. The result is a great amount of fine plastic sand that resembles food to many creatures. Unfortunately, the plastic cannot be digested, so sea birds or fish can eventually



starve to death with a stomach full of plastic (Reid, 2007).

Solid waste and some plastics are incinerated on board, with the incinerator ash being dumped into the ocean. Incinerator ash and air emissions can contain furans and dioxins, both found to be carcinogenic, as well as heavy metal and other toxic residues. For this reason Annex V of MARPOL dictates that ash should not be discharged into the sea (EPA, 2008:5-12). At the very least, incinerator ash should be tested before each overboard discharge. This would include analysis and accounting of the contaminants typically found in cruise ship incinerator ash to determine whether it should be categorized as solid waste or hazardous waste (EPA, 2008:5-15).

Under MARPOL no garbage can be discharged within three miles of shore. Between three and twelve miles garbage can be discharged if ground-up and capable of passing through a one-inch screen. If not ground-up and capable of passing through a screen, most food waste and other garbage can be discharged at sea when a ship is more than twelve miles from shore.

Although cruise ships have reduced their volume of solid waste, the total amount is still significant. Royal Caribbean's stated commitment in 2003 to not dump any trash overboard is admirable and should set a standard for all cruise ships operating on the world's oceans. If it is achievable by Royal Caribbean, then there is no reason why it is not practical for all cruise lines. This should be incorporated in legislation or international conventions in order to ensure cruise ships can be held accountable for unnecessarily dumping solid waste in the ocean.

**Hazardous Waste.** A ship produces a wide range of hazardous waste. These include photo processing chemicals, dry cleaning waste, used paint, solvents, heavy metals, expired chemicals and pharmaceuticals, waste from the print shop, hydrocarbons and chlorinated hydrocarbons, used fluorescent and mercury vapor light bulbs, and batteries (U.S. Bureau of Transportation, 2002; EPA, 2008:6-2 - 3). Although the volume produced by a ship may be relatively small (less than 1,000 liters in a typical week), the toxicity of these wastes makes them a serious concern. Hazardous wastes must be carefully managed in order to avoid their contamination of other waste streams (e.g., gray water, solid waste, bilge water, etc).

**Oily Bilge Water.** A typical large cruise ship will generate an average of eight metric tons of oily bilge water for each twenty-four hours of

operation (National Research Council, 1995); according to Royal Caribbean's 1998 Environmental Report its ships produce an average 25,000 gallons of oily bilge water on a one week voyage. This water collects in the bottom of a vessel's hull from condensation, water lubricated shaft seals, propulsion system cooling and other engine room sources. It contains fuel, oil, wastewater from engines and other machinery, and may also include solid wastes such as rags, metal shavings, paint, glass, and cleaning agents.

The risks posed to fish and marine organisms by oil and other elements in bilge water are great. In even minute concentrations oil can kill fish or have numerous sub-lethal effects such as changes in heart and respiratory rates, enlarged livers, reduced growth, fin erosion, and various biochemical and cellular changes (Copeland, 2008). Research also finds that by-products from the biological breakdown of petroleum products can harm fish and wildlife and pose threats to human health if these fish and wildlife are ingested.

Oily bilge water is normally passed through a fifteen parts per million (ppm) oily water separator for discharge within twelve miles of the coast; to 100 ppm (Copeland, 2008). for discharge beyond twelve miles from the U.S. shoreline. The oil extracted by the separator can be reused, incinerated, and/or offloaded in port (Copeland, 2008:5 - 6). Vessels are required to document the disposal of oil, oily bilge water or oily residues in an Oil Record Book (Copeland, 2008:14). To address the deleterious effect of oil to marine life, even in minute quantities, the discharge of oily bilge water should be prohibited in sensitive areas and in coastal zones.

**Ballast Water.** Cruise ships like other ocean-going vessels use a tremendous amount of ballast water to stabilize the vessel during transport. This water is often taken on in one location after a ship discharges wastewater or unloads cargo and then discharged at the next port of call.

"[Ballast water] ... typically contains a variety of biological materials, including plants, animals, viruses and bacteria ... These materials include non-native, nuisance, exotic species that can cause extensive ecological and economic damage [and] ... pose public health and environmental risks as well as significant economic cost to industries such as water and power utilities, commercial and

recreational fisheries, agriculture and tourism.” (Copeland, 2008:6)

The problem is not limited to cruise ships – it is a problem posed by all ships traversing the world’s oceans.

#### Cruise Ship Air Pollution

There are two sources of air emissions from cruise ships: incinerators and engines. Each presents its own set of issues.

**Incinerators.** Cruise ships incinerate and burn a variety of wastes, including hazardous wastes, oil, oily sludge, sewage sludge, medical and bio-hazardous waste, outdated pharmaceuticals, and other solid wastes such as plastics, paper, metal, glass, and food. A cruise ship may burn 1 to 2.5 tons per day of oily sludge in these incinerators and boilers (California Cruise Ship Environmental Task Force, 2003). The emissions from onboard incineration and its ash can include furans and dioxins, both found to be carcinogenic, as well as nitrogen oxide, sulfur oxide, carbon monoxide, carbon dioxide, particulate matter, hydrogen chloride, toxic and heavy metals such as lead, cadmium and mercury, and hydrocarbons (Bluewater Network, 2000).

In contrast to incinerator use on land, which is likely to be strictly monitored and regulated, incinerators at sea operate with few limits. MARPOL Annex VI bans incineration of certain particularly harmful substances, including contaminated packaging materials and polychlorinated biphenyls (PCBs). There are no international standards limiting emissions from ship incineration.

The State of California has established that air emissions from incineration, generated between 27 and 100 miles off the coast, could negatively impact the air quality of the state (California Cruise Ship Environmental Task Force, 2003). The state initially introduced legislation in 2003 to prohibit ships from using onboard waste incinerators while within 20 miles of the coast, but subsequently passed legislation applicable only to waters over which the state had jurisdiction. The final California law prohibits incinerator use when a ship is within three miles of the coast.

Clear parameters are needed for operational requirements for onboard incinerators, much like on land. In addition, it is wise to do as California has done and ban the use of incinerators within a specific distance from the coast. Any such law

must take into account the potential for onshore winds and ocean currents to move incinerator pollutants on-shore.

**Engine Emissions.** Air emissions from ship engines are an obvious source of pollution because many ships burn bottom-of-the-barrel bunker fuel – typically what remains of the crude oil after gasoline and the distillate fuel oils are extracted through distillation. An estimated 60,000 died worldwide in 2002 as a result of under-regulated shipping air emissions and that number is estimated to grow by 40 percent by 2012 due to increases in global shipping traffic (Corbett et al, 2007). According to the U.S. EPA, oceangoing ships each year emit 870,000 tons of nitrogen oxide, a key contributor to smog. Conventionally a cruise ship’s environmental impact is likened to the impact of 12,000 automobiles (Oceana, 2003). A study published in 2007 raises an even greater alarm. It found that bunker fuel on average has almost 2,000 times the sulfur content of highway diesel fuel used by buses, trucks, and cars and that one ship can make as much smog-producing pollution as 350,000 cars (Waymer, 2007). This figure can vary widely depending on the fuel being burned. A number of ships began using gas turbine engines in the late 1990s and early 2000s, well before the spike in fuel costs in 2007. These gas turbines are considerably better than conventional cruise ship engines in terms of sulfur and nitrous oxide emissions.

Current international standards set maximum sulfur content for ocean going vessel fuel at 4.5 percent, making it easy for cruise lines to say they meet or exceed international regulations since bunker fuel averages 3 percent sulfur content. New international standards will require a reduction of ship fuel sulfur content to 3.5 percent in 2012 and 0.5 percent in 2020 or 2025. In contrast, lower sulfur fuels such as on road diesel currently have sulfur contents as low as 0.0015 percent. Use of lower sulfur fuel reduces particulate matter 58 percent, sulfur 99.6 percent, and oxides of nitrogen 11 percent (Klein, 2003:52). Cruise lines have been resistant to adopting use of fuels below 3 percent because of their higher cost.

Another way in which air emissions can be curtailed is by imposing reduced speed limits as cruise ships approach ports. In February 2009, the Port of San Diego moved forward with a vessel speed reduction program (Port of San Diego, 2009). Cruise and cargo ships will be asked to voluntarily reduce their speed when entering and

leaving San Diego Bay in an effort to reduce air pollution. The voluntary speed limit will be 15 knots for cruise ships when traveling in an area that extends 20 nautical miles out to sea from Point Loma; cargo ships are expected to reduce speed to 12 knots. According to port officials, studies have shown a significant reduction in air emissions from ship engines when speeds are reduced – particularly significant reductions in emissions of oxides of nitrogen, oxides of sulfur, diesel particulate matter and carbon dioxide (California Environmental Protection Agency, 2009). Similar programs have been enacted by the ports of Los Angeles and Long Beach, which report the program saved more than 100 tons of nitrogen oxide from going into the air in the first three months of implementation (Port of Los Angeles, 2005).

Another way to grapple with the problem of air emissions from engines is cold ironing, the option for ships to turn off all engines while in port and to plug into shore side power. Cold-ironing was first introduced in 2001 in a partnership between the port of Juneau and Princess Cruises and is slowly propagating to other locations, including the ports of Vancouver, Los Angeles, Long Beach, and Seattle. The west coast of the U.S. is setting an example for the rest of the country and the practice of cold ironing should be encouraged, if not required, along all coasts of the U.S.

While the industry argues that it meets or exceeds MARPOL limits, it must be recognized that these regulations are minimal and fall far short of those already in place in California where ships will be required to use marine gas oil, or marine diesel oil with a sulfur content of no more than 0.5 percent by weight in all diesel engines within 24 nautical miles of the coast beginning in July of this year (sulfur content of marine gas oil drops to 0.1 percent sulfur in 2012). According to the California Air Resources Board, the use of low sulfur fuel in auxiliary engines used in port could save 3,600 lives in coastal communities over the first six years through reduced respiratory illnesses and heart disease, including a potential 80% drop in cancer risk associated with ship pollutants (Roosevelt, 2008:B1). The results are even more impressive if auxiliary engines are shut down and shore side power is used instead.

#### *Believe What We Say, Not What We Do*

Despite its environmental record, the cruise industry presents itself as environmentally concerned, responsible, and reformed after all the

pollution incidents in the 1990s and early 2000s. They attempt to disarm critics with statements such as, “We visit some of the most pristine areas of the world and our income depends on them staying that way, so why would we pollute?” It is a compelling argument, but as already seen is at variance with continued behavior.

**Monterey Bay (2002).** In April 2002, representatives from environmental organizations, the City of Monterey, the State of California and the Monterey Bay National Marine Sanctuary met with cruise lines planning to visit Monterey and told them that if they could not refrain from soiling waters of the bay, they should stay away. Crystal Cruises was among the four cruise lines that travel into Monterey Bay and it sent a letter to the city.

“Tom Greene, director of safety, environment and training for Crystal Cruises, which plan[ned] to dispatch its *Crystal Harmony* to Monterey on Oct. 9, said company officials had promised to withhold all liquid and solid waste water while in Monterey Bay. Even though a company policy forbids such dumping, Mr. Greene said the company wanted to reassure local officials in writing that it would abide by their demands.” (Madigan, 2002)

The company’s vice president, Joseph Valenti, signed the letter to the California Regional Water Quality Control Board, stating: “Crystal Harmony will observe a no-discharge policy in the Monterey Bay National Marine Sanctuary ... This policy will apply to all wastewater, ballast water, water discharged through the oily water separator, and all forms of solid waste” (Madigan, 2002). Valenti reiterated the company’s commitment at a public lecture given by this author at the Monterey Institute for International Studies on January 14, 2003. He complained both publicly and privately that he had been denied time to present the cruise line’s point of view at the lecture. However he made statements during the lecture asserting that Crystal Cruises was an exemplary company in the industry given its high environmental standards.

In late-February 2003 it was learned, through the California State Water Resources Control Board’s review of ship’s logs, that the *Crystal Harmony* had in fact discharged 34,078 gallons of gray water, 264 gallons of treated black water, and 2,118 gallons of processed bilge water into Monterey Bay. When asked why they hadn’t reported the discharge when it occurred, Valenti, defended the silence by saying the company had

only broken its promise; it hadn't violated any laws (Laidman, 2003). ICCL President, Michael Crye, also dismissed the violation telling a news reporter the ship's discharge occurred 14 miles from the coast so it wasn't illegal (Fletcher, 2003).

The people of Monterey expressed their extreme displeasure with these discharges and on March 18, 2003, the Monterey City Council voted to bar all Crystal Cruises ships from entering the port of Monterey for 15 years and barred the *Crystal Harmony* forever (Madigan, 2003).

#### **Carnival Corporation (2003-2004).**

Despite paying an \$18 million fine as part of its plea agreement in 2002, Carnival was back in federal court within a year. It had been summoned by the court in July 2003 after a probation officer reported the company failed to develop, implement and enforce the terms of an environmental compliance program stemming from the 2002 plea agreement. Holland America employees reportedly submitted twelve audits that contained false, misleading and inaccurate information Dupont, 2003; Tobin, 2003). Carnival Corporation replied to the court that three environmental compliance employees had been fired for the reports but it did not admit violating its probation. In a settlement signed August 25, 2003, Carnival agreed to hire four additional auditors and to provide additional training for staff (Perez, 2003).

Carnival Corporation was back in court in July 2004. Its Holland America Line's former vice president for environmental compliance pleaded guilty to certifying environmental compliance audits that were never performed (Klein, 2007).

**Royal Caribbean (2003-2008).** Royal Caribbean has also contradicted word and deed. The CEO of the corporation issued a form letter on September 24, 2003 responding to letters he received as part of a social action campaign pursued by Oceana. The letter clearly states that the company discharges its black water (wastes from toilets) and its gray water "only when we are 12 or more miles from the shore and moving at least six knots" (Fain, 2003). The letter proudly promotes Royal Caribbean's policies and procedures for exceeding Coast Guard requirements and as stricter than U.S. law. It's an impressive claim, but is contradicted with a report in December 2003 that the company had 12 times violated Hawaii's MOU 12 times that prohibits discharges within four miles of the coast (Yamanouchi, 2003).

More recently, since coming off probation in 2004, Royal Caribbean has reportedly returned to

discharging untreated effluent beyond three nautical miles from shore and at variance with its public commitment to only discharge beyond 12 miles. The company reportedly has also changed the required qualifications of environmental officers and has reduced their onboard status. This was obviously the case with a 2006 discharge of 500,000 gallons of wastewater in Puget Sound (see above) and its discharge of 20,000 gallons of wastewater into Chatham Strait in Southeast Alaska on June 10, 2008.

#### *Cruise Industry Responds*

Several weeks after the July 1999 plea agreement between the Department of Justice and Royal Caribbean, the International Council of Cruise Lines (ICCL) made a commitment on July 27 to standards for waste management. The ICCL assured that "...member lines have strengthened their own environmental policies and procedures, and closely monitor onboard activities to ensure these standards are maintained. The internal procedures are designed to meet existing and comprehensive federal, state, and international standards designed to prevent discharges from all commercial vessels" (ICCL, 1999). While the commitment and mandatory standards set protocols for performance, there are no criteria for verification and enforcement, nor are there regulatory targets. Furthermore, no member cruise line has ever been publicly sanctioned or had its membership in ICCL withdrawn for environmental violations.

The ICCL restated its environmental commitment two years later in June 2001 with "New Mandatory Environmental Standards for Cruise Ships." The standards were announced while the Alaska State Senate was in special session considering legislation that would authorize monitoring of cruise ship emissions and enforce environmental standards, and following two new violations in Alaska waters in May 2001 - NCL's *Norwegian Sky* discharged black water for 20 to 30 minutes while in the Alexander Archipelago, leaving a waste stream of up to three-quarters of a mile; Holland America Line's *Westerdam* accidentally discharged 100 gallons or more gray wastewater while docked in Juneau. The new standards, announced June 11, 2001, responded to the public outcry against the types of pollution deposited in Alaska's waters.

The industry's record suggests it responds most effectively to legislation, as seen by the effectiveness of Alaska's approach that includes direct monitoring and enforcement. It also

responds to public pressure, but the nature of the response is to promote its commitment to environmental protection and responsibility – words that are not consistently seen in behavior. Take for example the ICCL's statements between July 1999 when Royal Caribbean was fined \$18 million and June 2001 when the Alaska legislature was about to approve the Alaska Cruise Ship Initiative. On July 27, 1999, an ICCL press release said: "These incidents have served as an important wake-up call, causing our industry to redouble its efforts to improve its environmental performance." On October 4, 1999, an ICCL press release said: "The International Council of Cruise Lines (ICCL) today released a statement that outlines the industry's plans to enhance and strengthen environmental standards for the cruise industry in the area of waste disposal and onboard waste management." On April 28, 2000, ICCL had a letter to the editor published in the St. Petersburg Time – it said: "Our member cruise lines are committed to protecting and preserving the environment. The industry will continue to work diligently with lawmakers, regulators and stakeholders to ensure that our joint efforts continue to reflect that commitment." And on June 10, 2001, the ICCL president, Michael Crye, was quoted by the Associated Press as saying, "Regrettably, there have been violations of environmental laws involving cruise lines in the past few years. These incidents served as a wake-up call" (Klein, 2005:144). But cruise line environmental violations continue to this day.

### **A Model for Responsible Cruise Tourism**

Ports and local governments frequently appear to forget that cruise lines are in business to make money, and money made by a port is money lost by the cruise ship. The result is that cruise lines and ports are in many respects competing for the same dollars. Left to their own, cruise lines will extract as much income as possible. However, ports and vendors in port communities can take actions that generate for them a better deal when it comes to cruise tourism. They will likely find cruise lines will do whatever they can get away with, but there is potential for arrangements more beneficial to ports used by cruise ship.

#### *Recoup Investment*

Most critical is that ports receive reasonable fees to cover the cost of cruise terminal operations, infrastructure required for cruise tourism, and debt incurred to construct the infrastructure.

Generally speaking, ports have not been good at charging a realistic price for what they provide. Contrast, for example, the arrangements made as construction was undertaken to accommodate new, larger ships (including Royal Caribbean's *Oasis of the Seas*) by three ports: Falmouth, Jamaica; Phillipsburg, Sint Maarten; and Fort Lauderdale, Florida (see Klein, 2008:125-126). In the case of Phillipsburg and Falmouth, cruise corporations agreed to loan money needed for improvements to infrastructure they requested (at market interest rates), agreed to land a minimum number of passengers over a number of years, but did not agree to increased port fees. The arrangements yield insufficient income for the ports to come close to breaking even. Fort Lauderdale, on the other hand, negotiated an arrangement where passengers using the new terminal will pay a surcharge of \$5.70 on departure and on arrival in addition to the regular port fee of \$9.95 (which itself is more than is charged by ports in Jamaica or Sint Maarten).

Some ports keep port fees low to remain more attractive than other nearby ports. The Port of Saint John, New Brunswick (Canada) for example recently increased port fees 2.5 percent, from C\$7.16 to C\$7.34. In making the announcement, the port said it set fees to remain competitive with the landing fees per passenger at other ports in the region. Halifax, Nova Scotia had just raised its fees 8.3 percent to C\$8.50, and ports in Quebec charge C\$10.50 (Bartlett, 2009). At the same time, the Port of Saint John had just completed an \$11 million cruise terminal, which would generate \$1.4 million in passenger fees in the coming year; an amount that would scarcely cover the cost of terminal operations and debt servicing for the new terminal.

Other ports undertake construction projects for cruise tourism infrastructure in hopes to develop a local industry where none exists. In these cases, significant investments are made in hopes that a cruise ship will visit; money that could otherwise be used for other social or public projects. The case of Campbell River's \$14 million cruise terminal that is scarcely used was discussed earlier. But there are others doing the same in that region and across the world. Rather than secure business and income and then undertake construction, there is a view that "if we build it, they will come." Such a position of need or dependence is not a powerful position from which to negotiate.

#### *Economic Distribution*

A second consideration for responsible cruise tourism is a more equitable division in revenue between a cruise ship and a port. Arrangements whereby local tour providers receive less for tours than does the cruise ship appears economically irresponsible on the part of cruise lines and local tour companies. Similarly, expectations for shops and local vendors to pay fees to cruise ships in return for the passengers landed by cruise ship defies an underlying belief that cruise tourism should have significant economic impact for ports.

The issue is one of equity and of responsibility. Cruise lines are quick to say they depend on ports and on positive shoreside experiences for the passengers. But they appear unwilling to provide the full range of economic benefits associated with cruise tourism – benefits that provide meaningful employment and that raise the economic health and strength of the region. The mobility of cruise ships makes it easy for them to pick and choose ports based on which is willing to give the best deal – often meaning they are undercutting a neighbour – and thereby provide the highest yield of profit. The cruise ships benefit, but ports are left with a smaller slice of the pie than they rightfully deserve.

#### *Environmental Impact*

Port communities and national governments where cruise ships visit also need to have greater concern for the environmental impacts of cruise ships. On the one hand, there needs to be stricter regulations when it comes to cruise ship environmental practices. There is presently something of a patchwork of regulations which means a cruise ship visiting the Caribbean uses fuel with 3.0 percent sulphur content, but that same ship when visiting California uses fuel of 0.5 percent sulphur and when traversing Alaska's Inside Passage fuel of 1.8 percent sulphur. The cruise industry touts itself as responsible stewards of the marine environment – rhetorically asking why they would pollute when their business depends on pristine oceans – but cruise ships frequently adopt the lowest threshold allowed for environmental practices rather than responsibly practicing the highest standards available. Part of the problem is that governments need to adopt regulations and laws to effectively protect and preserve their marine environment.

Equally, if not more important, is the need to enforce regulations already in place. Except for Alaska, no jurisdiction regularly monitors the effluent dumped into coastal waters. And while cruise ships have been charged in recent years for

violations in Washington state, Hawaii, and California, most jurisdictions lack a scheme for monitoring cruise ship behaviour and enforcing environmental regulations already in place. There appears to be a fear that enforcing environmental laws will drive ships away to neighbouring countries and ports where cruise ships can do as they wish with no interference from local governments.

#### *Working Together*

The solution to the problem – making cruise tourism more responsible as regards economic issues and protection of their own marine environment – rests in large part with the will of ports. Ports can have a major impact on both issues. However, individual ports cannot do this alone. Because cruise ports are in many ways interchangeable, it is imperative they work together as coalition partners. This is precisely what St. Vincent's Tourism Minister Glen Beache meant when he warned in October 2007 that unless the Caribbean region develops a united approach it would continue to not benefit significantly from the cruise sector. Ports should set port fees that are universal across a region or a country. And they should enforce arrangements whereby local merchants and tour providers earn what they should. It isn't a matter of cruise ships earning nothing from the sale of shore excursions, or for advertising one shop over another, but the fees must be reasonable and should ensure an equitable division of income.

Ports and governments can also work together more effectively for environmental protection. There needs to be a collective intolerance for ships continuing to degrade fragile areas and to discharge pollutants into the air people breathe and the waters from which they derive their food and/or livelihood. The first step is for solidarity on the desire to require cruise ships to adopt more responsible environmental practices. The second step is to monitor cruise ship activities and to enforce the regulations in place. And the third step is to promulgate more effective environmental regulations.

#### *Maintaining Self-Esteem*

Underlying each of these suggestions for making cruise tourism more responsible is a belief that ports need to maintain their self esteem. They need to keep in mind the value they have to the cruise industry – without ports there are no destinations – and ensure they are equals in the economic relationship. Just as cruise lines are in

business to make a profit, ports as well need to see cruise tourism as a source of income and profit, and be sure they receive their fair share.

Cruises today continue to be an inexpensive vacation. It is a choice many people make because it is less costly than spending the same amount of time at a hotel in the same destination. This is a great deal for consumers. But their cheap-priced vacation is subsidized by onboard workers being paid marginal wages for the work they do, and further subsidized by ports, governments, and merchants that keep costs down for cruise ships that visit while at the same time ensuring a maximum amount of revenue for cruise corporations. Carnival Corporation alone earned between \$2.2 and \$2.4 billion in net profits the past four years and as a Panamanian Corporation it avoids corporate income taxes in most regions where it operates. It is time for port communities to become equals in the relationship with cruise lines and cruise corporations. They need to get a bigger slice of the pie so that cruise tourism actually has the economic benefits and value perceived to be available.

## References

- Abbott, Mary Lu. 2004. "Extras Can Cost More Than the Cruise," *New Orleans Times-Picayune*, November 7.
- AND. 2008. "Cruise Lines Says It Broke Law Discharging Wastewater," *Anchorage Daily News*, July 4,
- Ashworth, Jon. 2001. "A Ship That Thinks It's a Conference Centre," *London Times*, July 14.
- Alaska DEC. 2004. *Assessment of Cruise Ship and Ferry Wastewater Impacts in Alaska*. Juneau:Alaska Department of Environmental Conservation
- Bartlett, Bruce. 2009. "Cruise Passengers to Pay Higher Fee," *Telegraph-Journal*, April 7.
- Belize Times. 2003. "Is This For Real?," *Belize Times*, September 2.
- Bluewater Network. 2000. Petition to EPA on Cruise Ship Incineration, April.
- Brannigan, Martha. 2008. "Who Uses Advanced Waste-Removal Technology?" *Miami Herald* February 3.
- California Cruise Ship Environmental Task Force. 2003. *Report to the Legislature: Regulation of Large Passenger Vessels in California*, August.
- California Environmental Protection Agency. 2009. "Vessel Speed Reduction for Ocean-Going Vessels," Air Resources Board, February.
- CESD. 2007. *Cruise Tourism in Costa Rica & Honduras: Policy Recommendations for Decision Makers*, Washington, DC:Centre on Ecotourism and Sustainable Development.
- CESD. 2006. *Cruise Tourism in Belize: Perceptions of Economic, Social & Environmental Impact*, Washington, DC: Centre on Ecotourism and Sustainable Development.
- CMC. 2007. "Beache Warns That Islands Need United Approach to Cruise Tourism," *CBC Barbados*, October 23.
- Copeland, Claudia. 2008. *Cruise Ship Pollution: Background, Laws and Regulations, and Key Issues*, Washington, DC:Congressional Research Service.
- Corbett, James J., James J. Winebrake, Erin H. Green, Prasad Kasibhatla, Veronika Eyring, and Axel Lauer. 2007. "Mortality from Ship Emissions: A Global Assessment," *Environmental Science Technology*, 41 (24), pp. 8512-8518.
- Cruise Environmental Task Force. 2003. *Report to the Legislature: Regulation of Large Passenger Vessels in California*, Cruise Environmental Task Force, August.
- Diaz, Robert J. and Rutger Rosenberg. 2008. "Spreading Dead Zones and Consequences for Marine Ecosystems," *Science* 321, pp. 926 - 929.
- Duncan, Philippa. 2007. "Sun Fails to Shine for Tourism Trade," *The Mercury*, December 4.
- Dupont, Dale K. 2003. "Pollution Case Haunts Carnival." *Miami Herald* July 24
- EPA. 2008. *Cruise Ship Discharge Assessment Report*, Washington, DC:U.S. Environmental Protection Agency (Report #EPA842-R-07-005).
- Fain, Richard D. 2003. Form letter dated September 24, addressed to "Dear Friend," from Richard D. Fain, Chairman & Chief Executive Officer, Royal Caribbean Cruises Ltd.
- Federal Trade Commission. 2002. *Statement of the Federal Trade Commission concerning Royal Caribbean Cruises Ltd/P&O Princess Cruises plc and Carnival Corporation/P&O Princess Cruises plc*, FTC File No. 021 0041, October 5, 2002.
- Fletcher, Ed. 2003. "Cruise Ships Are in the Cross Hairs," *The Sacramento Bee*, June 23.
- Golden, Kate. 2009. "State Cites Smoky Cruise Ships for Air Quality Violations," *Juneau Empire*, February 15.

- Golden, Kate. 2008. "Two Cruise Ships Blamed for Emissions Violations: Royal Caribbean Cruises Vessels Violated Air Quality Standards, State Manager Says," *Juneau Empire*, September 14.
- h.b. 2007. "Costa Calida Liners Leave Little in Cartagena," *Typically Spanish*, May 10.
- Herz, Michael, and Joseph Davis. 2002. *Cruise Control: A Report on How Cruise Ships Affect the Marine Environment*. Washington, DC: The Ocean Conservancy.
- Heusner, Karen. 2004. "Belize Tourist Industry Challenges Cruise Ship Contract," *Associated Press*, November 10,
- Huie, Nancy. 1995. "The Business of Shopping," *Cruise Industry News Quarterly*, Summer.
- ICCL. 1999. Press Release, "Statement of the International Council of Cruise Lines (ICCL) Regarding Recent Environmental Settlement," July 27.
- Immen, Wallace. 2004. "Sailing in Search of Uncrowded Ports," *Globe and Mail*, October 9
- Klein, Ross A. 2009. *Cruising without a Bruising: Cruise Tourism and the Maritimes*, Halifax:Canadian Centre for Policy Alternatives.
- Klein, Ross A. 2008. *Paradise Lost at Sea*, Halifax: Fernwood.
- Klein, Ross A. 2007. "The Politics of Environmental Activism: A Case Study of the Cruise Industry and the Environmental Movement." *Sociological Research Online* 12, 2 (March).
- Klein, Ross A. 2005. *Cruise Ship Squeeze: The New Pirates of the Seven Seas*, Gabriola Island, BC:New Society.
- Klein, Ross A. 2003. *Charting A Course: The Cruise Industry, The Government of Canada, and Purposeful Development*, Halifax: Canadian Centre for Policy Alternatives.
- Laidman Dan. 2003. "Cruise Line Says Rookie Mistake Led to Ship's Waste Dumping," *Monterey Herald*, March 6.
- Juneau Empire. 2008a. "Cruise Ship Violates Wastewater Permit," *Juneau Empire*, September 21.
- Juneau Empire. 2008b. "More Cruise Ships Cited for Wastewater," *Juneau Empire*, October 2.
- King County Wastewater Treatment Division. 2007. *Cruise Ship Wastewater Management Report*. Seattle:Department of Natural Resources and Parks.
- Madigan, Nick. 2002. "After Promise of Purity, a Cruise Ship Calls on Monterey," *New York Times*, September 19.
- Marusic, Zrinka, Sinisa Horak and Renata Tomljenovic. 2007. "The Socio-Economic Impacts of Cruise Tourism: A Case Study of Croatian Destinations," *Tourism in Marine Environments*, 5:2-3, pp. 131-144.
- McAllister, Bill. 2000. "A Big Violation on Wastewater: Some Ship Readings 100,000 Times Allowed Amount," *The Juneau Empire*, August 27,
- McCartney, Juan. 2007. "Measure to Improve Spend of Cruise Visitors," *The Bahamas Journal*, December 21.
- Molly Morris. 2002. "Turnbull Halts Cruise Lines-Crown Bay Deal," *St. Thomas Source*, March 13.
- National Marine Sanctuaries. 2008. *Olympic Coast Marine Sanctuary: Condition Report 2008*, Washington, DC:NOAA.
- National Research Council. 1995. *Clean Ships, Clean Ports, Clean Oceans: Controlling Garbage and Plastic Wastes at Sea*. Washington, DC:National Academy Press.
- Oceana. 2003. *Needless Cruise Pollution: Passengers Want Sewage Dumping Stopped*, Washington, DC:Oceana,
- Peisley, Tony. (2003) "Shore Excursions Make Impressive Profits," *Cruise Business Review*, December, 5.
- Perez, Evan. 2003. "Carnival Fires Pollution Auditors Over False Compliance Reports." *Wall Street Journal* August 28.
- Polglaze, John. 2003. "Can We Always Ignore Ship-Generated Food Waste," *Marine Pollution Bulletin* 46:1, pp. 33-38.
- Port of Los Angeles. 2005. "Vessel Speed Reduction Program Eliminate 100 Tons of Emissions from Air in Three Months," *Pollution Online*, August 19.
- Port of San Diego. 2009. "Port to Begin Voluntary Speed Reduction Program for Cruise and Cargo Ships," *Port of San Diego*, February 3.
- Port of Seattle. 2008. *Cruise Vessel Biomass Management Study, Phase 1A (Draft): Data Compilation and Initial Assessment*, Port of Seattle, November 18.
- PWC. 2001. *Economic Contribution of the F-CCA Member Lines to the Caribbean and Florida*, Price Waterhouse Coopers, July 27.
- Reid, David. 2007. "Earth's Eighth Continent." *The Tyee* November 21.
- Reynolds, Christopher. (1995) "Into the Beckoning Arms of Paying Port Perchants," *Los Angeles Times*, September 17, L-2.
- Roosevelt, Margot. 2008. "California Adopts Stiff Pollution Rules for Ships," *Los Angeles Times*, July 25, p. B1.



- San Pedro Sun. 2004. "Cruise Ship Contracts Sprout Controversy," *San Pedro Sun*, October 7.
- Schulte, Steven. 2004. Cruise Tourism Impact Forum Speech by Belize Tourism Industry Association President Steven Schulte, September 28.
- Seatrade Insider. 2007. "Envisioning the Future of On-Board Revenue," *Seatrade Insider*, March 17.
- Starmer-Smith, Charles. 2008. "Flying Three Times Greener than Cruising." *Daily Telegraph* January 19.
- Tobin, Rebecca. 2003. "Court Questions HAL's Compliance Reports," *Travel Weekly*, July 25,
- Washington State Department of Health. 2007. Report to the Legislature: Assessment of Potential Health Impacts of Virus Discharge from Cruise Ships to Shellfish Growing Areas in Puget Sound, Olympia: Washington Department of Health.
- Waymer, Kim. 2007. "Ships' Soot Deadly, Study Shows." *Florida Today*, November 17.
- Weiss, Ken. 2003. "Cruise Line Pollution Prompts Legislation," *Los Angeles Times*, August 18.
- Wilson, Carla. 2004. "Campbell River sets sights on cruise ship visits," *Times Colonist*, July 13.
- Yamanouchi, Kelly. 2003. "Cruise Lines Admit Pollution Violations," *Honolulu Advertiser*, December 12.