



Business Case Report: Adoption of StampOut™ General Cleaner aboard Holland America Line's MS Volendam

1. Executive Summary

This report evaluates the financial, operational, and environmental benefits of implementing StampOut™, a non-disinfectant general cleaning solution, on Holland America Line's MS Volendam. By replacing existing general-purpose cleaners, StampOut™ offers a potential cost reduction of up to 67% annually, depending on usage levels. Beyond financial efficiency, the solution delivers significant operational simplification and aligns closely with Holland America Line's ongoing sustainability objectives.

2. Cleaning Operations on MS Volendam

MS Volendam is a mid-sized cruise ship with a gross tonnage of approximately 61,214 GT. The vessel operates roughly 300 days per year, supporting over 1,400 guests and 600 crew members. Daily cleaning protocols span across 700 staterooms, common areas such as lounges and dining halls, bathrooms, recreational zones, and extensive crew operational spaces. Public areas and high-touch surfaces such as handrails, elevator buttons, and doorknobs are cleaned multiple times per day. Kitchens and galleys are cleaned continuously throughout the day during food service cycles.

Cleaning products on board include a mix of household-grade bleach solutions, commercial multi-surface cleaners, and specialty degreasers. These are typically supplied in bulk containers, then diluted for use by janitorial and hospitality teams. However, many of these conventional products contain corrosive or scented ingredients that may pose long-term safety, handling, and storage concerns.

3. Annual Cost Model for General Cleaners

Using standard cruise ship operations as a reference, it is estimated that MS Volendam cleans approximately 100,000 square feet of surface area daily. General cleaners are typically applied at a rate of 0.5 to 1.0 liters per 1,000 square feet, resulting in an



average daily consumption of 60 to 100 liters. Over 300 operational days, this equates to an annual demand between 18,000 and 30,000 liters.

The table below summarizes the annual cost implications under various consumption and pricing assumptions:

- In the low-usage scenario (18,000 liters/year) with a conventional product priced at \$1.50 per liter, total cost reaches \$27,000.
- In the mid-range scenario (24,000 liters/year at \$2.25/liter), the cost is \$54,000.
- The high-end scenario assumes 30,000 liters/year with a \$3.00/liter cleaner, totaling \$90,000.

Scenario	Annual Usage (L)	Est Cost/L	Est Annual Cost	StampOut™ Annual Cost	Annual Savings	Savings (%)
Low Estimate	18,000	\$1.50	\$27,000	\$18,000	\$9,000	33.30%
Mid Estimate	24,000	\$2.25	\$54,000	\$24,000	\$30,000	55.60%
High Estimate	30,000	\$3.00	\$90,000	\$30,000	\$60,000	66.70%

If StampOut™ is adopted at \$1.00 per liter, annual costs drop to \$18,000, \$24,000, and \$30,000 respectively in each scenario. This translates to savings of \$9,000 (33%), \$30,000 (56%), and \$60,000 (67%) depending on usage intensity.

4. Operational Improvements

StampOut™ simplifies onboard cleaning processes by replacing a fragmented portfolio of products with a single, versatile cleaner. This leads to reductions in procurement complexity, product training requirements, and storage needs. The product's user-friendly formulation eliminates the need for dilution stations, minimizing operator error and saving time. StampOut™ is odor-neutral, which addresses recurring passenger complaints about overly scented products in confined spaces like staterooms and hallways.

Its formulation is also non-corrosive, which helps preserve shipboard fixtures, plumbing, and flooring over time, reducing maintenance frequency and capital replacement costs.



5. Environmental and Regulatory Alignment

StampOut™ is manufactured with PHMGH as the active ingredient and adheres to key sustainability and safety benchmarks. The product is biodegradable according to OECD standards, has low aquatic toxicity, and does not release VOCs or other airborne irritants. This is especially important aboard marine vessels, where greywater discharge and chemical residues are tightly regulated.

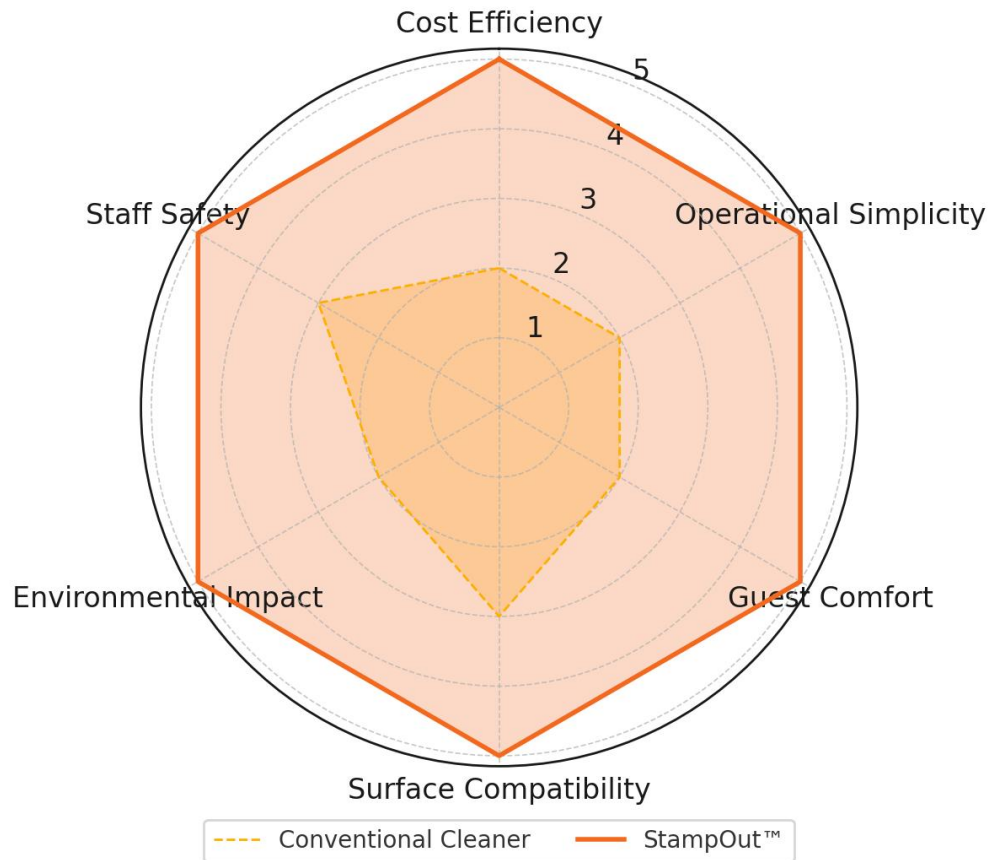
Holland America Line has committed to reducing its environmental footprint through initiatives like food waste biodigesters, fuel efficiency, and eco-certified excursions. Transitioning to a low-toxicity general cleaner supports these goals by:

- Reducing hazardous chemical inventory onboard
- Lowering risk of adverse discharge into marine environments
- Improving air quality for guests and crew

Please find below a Radar Map providing a visual representation of the competitive advantages with using StampOut™.



Performance Comparison: StampOut™ vs Conventional Cleaners



6. Pilot Program Recommendation

We propose a phased 90-day pilot aboard MS Volendam with three sequential rollouts:

- **Phase 1:** Crew quarters and maintenance corridors to validate safety and usability
- **Phase 2:** Public restrooms and recreational zones to evaluate guest-facing performance
- **Phase 3:** Food prep and back-of-house service areas to confirm effectiveness in high-soil zones



Metrics should include product volume used, staff satisfaction, guest odor feedback, cleaning time efficiency, and cleanliness verification via surface swabbing (ATP testing).

Training can be delivered through a remote onboarding session supported by easy-to-follow job aids, while usage data can be gathered via daily housekeeping logs and shipboard inventory tracking.

7. Next Steps

To move forward, the following action plan is recommended:

1. Schedule a meeting with HAL housekeeping leadership to present this business case
 2. Confirm pilot approval and identify supply delivery port
 3. Ship 1,000L of StampOut™ for initial deployment
 4. Develop and deliver crew training materials
 5. Run 90-day trial and compile findings into ROI summary
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Conclusion

StampOut™ offers a compelling opportunity for cost reduction, environmental alignment, and operational simplification aboard MS Volendam. With cleaning budgets reaching up to \$90,000 annually for general cleaners alone, a switch to StampOut™ at \$1.00/liter could generate savings as high as 67%. Combined with its low-toxicity, biodegradable profile, the solution strongly supports Holland America Line's brand commitment to sustainability and guest comfort. A 90-day pilot is recommended as the next step to validate assumptions and measure impact in real shipboard conditions.