



The evolution of passenger carriage at sea.

By Nigel S. Greenwood
Greenwood Maritime Solutions Ltd.

The maritime industry has always been a domain of vigorous change and innovation.

This may sound counter-intuitive from several points of view, most notably because the profession of seafaring has long been associated with a conservative, staid outlook. The risking of expensive ships and cargoes relied upon an interlocking structure of tried and true methods, strict discipline, and ancient legal foundations that reinforced prudence above all. In northern Europe, the association of this tendency with dour protestant work-ethics gave rise to such famously austere nautical slogans as “Fear God and Dread Nought”. None of this was conducive to “new-fangled” invention. Accordingly, many important innovations — from the determination of longitude by clock to the introduction of radar to the institution of maritime traffic control — were long resisted.

Nonetheless, the last century has seen incredible changes in all facets of the shipping industry. One area in which the trade has not only been changed, but essentially redefined, has been the carriage of passengers by sea. This has resulted in a dynamic where the industry, while inventing a new domain of business, has had to innovate new solutions to challenges of their own making. In this article, I will examine the ways in which this is true, and the implications for the theme of the Nautical Institute’s spring conference on Passenger Vessel Safety.



One area...which...has not only been changed, but...redefined, has been the carriage of passengers...where the industry, while inventing a new domain of business, has had to innovate new solutions to challenges of their own making.

Invention of the destination ship

The true passenger ship has been a relatively recent invention. True, ferries of various description have existed forever, to traverse un-fordable streams from the river Styx onwards. But these were mostly short transits in small craft. Across more substantial bodies, such as harbours, regularized service has only existed in historical times. The

Halifax-Dartmouth ferry service for example, is credited as one of the earliest, continuously running salt-water services dating from 1752.

For the most part, passengers were carried on a space-available basis in competition with cargo for which the freight rates might possibly be better, and care easier. Certainly, there was not much preferential treatment



Halifax-Dartmouth ferries ...longevity, efficiency and innovation.

PASSENGER VESSELS

for human cargo as early emigrants to North America and Australia discovered. Their carriage was strictly determined by the incentive to maximize the load factors, or under circumstances such that punitive conditions were not to be considered undue.

The situation began to improve in the early 1800s with the establishment of scheduled “packet ship” services between Britain and various American or Imperial destinations, carrying high-value and time-sensitive cargoes such as mail and wealthy passengers. With the advent of steam, these evolved into the famous liners of “Blue-Riband” rivalry for the fastest Trans-Atlantic passages. But these also set other records, establishing the trend that endures today: the quest for the perfect optimization of comfort, service and capacity.

Throughout most of the 20th century, the evolution of the passenger ship was concerned with fast and comfortable conveyance from one port to the other. A number of different approaches were tried to boost through-put. For long transits it was both speed and capacity — these two factors worked hand in hand to produce the largest, fastest and most opulent ships the world has seen. On short hauls, the search for sheer efficiency and frequency of scheduling led to highly technical solutions of the past 50 years: hovercraft, hydrofoils, and those curious neither-fish-nor-fowl contraptions, the Wing-in-Ground machines which mimic flying fish in their fundamentally aquatic nature married with ability to fly at very low altitude over the wave-tops. Lower-tech



Packet ships married speed and regularity (here the Black Ball Line's Jacobsen).

solutions which had a brief period of popularity included inter-modal passenger arrangements such as the London-Paris sleeper train-ferry.

With the introduction of long-range aircraft, the passenger-vessel trade as long-distance conveyance began to decline. This hit the Trans-Atlantic trade hardest, but the effect has also been felt in the short sea trades. Where this trade has not been devastated, either by the initial competition of flight or the subsequent innovation of high-speed trains in submarine tunnels (eg: the “Chunnel”), it has been sustained by the public's desire to take their own vehicles across the water. But



Photo source: Royal Caribbean

MV Oasis of the Seas ...the ship as a holiday destination in its own right?



BRINGING INNOVATION AND EXPERTISE TO EVERY PROJECT

- Marine Engineering
- Naval Architecture
- Marine Surveys
- Project Management
- Terminal Design
- Vessel Design
- Refit Design

BMT Fleet Technology Ltd, an operating company of BMT Group Ltd, is a leader in providing through-life engineering support to the marine sector. From planning and design to implementation engineering through operations and maintenance, we offer a wide range of expertise to address your needs. BMT provides effective solutions while managing risk and cost.

Our projects include ferries and terminals, work and supply boats, research vessels, floating platforms, as well as condition assessments, environmental assessments, hazardous materials assessments and operational risk management.

 **BMT Fleet Technology**
“Where will our knowledge take you?”

Vancouver, B.C. 1-604-253-0955
Victoria, B.C. 1-250-598-5150
www.fleettech.com
fleet@fleettech.com

PASSENGER VESSELS



The age-old routines of uncomfortable captivity at sea...have been augmented by...every conceivable vacation attraction that can be fitted to a mobile platform.

even car ferry ("passenger-RORO cargo" ship) services have had to constantly re-invent themselves to offer the traveling public not just conveyance, but an "experience". The world's leading scheduled coastal ferry companies, while setting modern records of efficiency in loading and off-loading, timeliness and affordability, have diversified to provide greater diversions as part of their business model.

In the long-haul passenger trade, changes were presaged in the late 1800s by Albert Ballin, General Manager of the Hamburg-America Line, who sent his ships on southern cruises during the lighter-subscribed (worst weather) winter North Atlantic season. Other major oceanic passenger lines were

not long in following, and by the mid-1980s they had redefined the industry. Passages shifted from scheduled runs between transit destinations (ports of call as an entrée to somewhere else) to itineraries constructed of a succession of attractive (even isolated) destinations, each a travel objective in its own right.

With commonly affordable airfares arriving in the 1960s, the passenger liner trade effectively ended in 1986. Today, the only ship operating in such a fashion is Cunard's *RMS Queen Mary 2*, which was commissioned in 2004. And while she still conducts regular service between Southampton and New York, this is only part of her annual program. In many ways she

exemplifies the further evolution of the passenger ship business: truly massive ships of extraordinary complexity, immense capacity, profusion of onboard entertainments and diversions, and accommodations rivaling upscale hotels.

The age-old routines of uncomfortable captivity at sea — windy walks on promenade decks, reading under wool blankets on deck chairs, card games and formal dining — have been augmented by shows, films, casinos, and every conceivable vacation attraction that can be fitted to a mobile platform. And this is increasingly unconstrained by size. The epitome of this is the newest and largest ship ever, the Royal Caribbean's *MV Oasis of the Seas*, of 225,282 GT and having a capacity of over 8,000 passengers and crew, which advertises a vibrant holiday experience of several distinct "neighbourhoods."

In short, the modern cruise ship has become a city-at-sea, the holiday destination itself.

rescue boat training 3 STCW Proficiency in Fast Rescue Boats

Successful completion of this course will satisfy the STCW Proficiency in Fast Rescue Boat training requirement for certification as a Fast Rescue Boat Coxswain.
This course is approved by Transport Canada.

The Q3 Advantage

Q3 Training Programs are well known internationally as the standard of excellence in marine training. Our team is comprised of individuals whose industry reputation and credibility are without equal.

Call or visit our website for more information.



Marine
Training
Solutions

*a multi-dimensional approach
to Marine Training and Certification*

Phone: (360) 873-8675

Website: www.q3mts.com

Email: info@q3mts.com



PASSENGER VESSELS

Challenges of their own making...

The evolution of the cruise ship industry has created challenges that are a function of scale; but while passenger complement has ballooned, the time scale has not changed, thus posing extreme demands for efficiency. With short turnarounds of two weeks or less, large ships entail most of the problems of modern cities, albeit (unlikely) ones in which 70 per cent of the whole population is changed-out on a fort-nightly basis. Thus there is little time to gain a history on the social, medical or demographic issues of the "city." This has to be managed in a strictly statistical sense.

Short turnarounds impose significant challenges to processing (customs clearance and inward/outward connections), to baggage handling, and to re-provisioning at each termination port. This requires a degree of automation and cross-correlation previously impossible without digital computing, scanning, and advanced

Photo courtesy of Nanaimo Port Authority



Going ashore...not always a walk-off from the largest ships.

identification techniques. Nor is this just a matter of checking tickets; the increasing requirement for detailed passenger manifest data in this world of heightened security means that much more than names must be available for each passenger.

The turnaround problem is exacerbated in the case of each interim stop

in the ship's voyage. Shore excursion disembarkation, usually during a port visit of 12 hours or less, must be accomplished expeditiously either alongside, or in the case of the largest ships in austere ports, through the ship's or contracted tenders. Not just the tracking of these comings and goings is problematic; boatwork itself is notoriously

 **survitecgroup**

OUR MISSION IS YOUR SURVIVAL.

You know we manufacture the DBC and Survitec Zodiac liferafts... the most rugged and reliable rafts of their type. But did you know we also supply the Imperial Immersion Suit? Or how about the tried and true McMurdo SmartFind EPIRB? Or that we have opened our brand new offices at 1689 Cliveden in Delta, BC?

Learn more about how all our industry-leading products help keep marine professionals like you alive when the worst happens.

Just visit www.dbcmarine.com



**TO FIND YOUR NEAREST
DEALER OR PLACE AN ORDER**

Call **604-278-3221** or **800-932-3221**

Email dbc.sales@survitecgroup.com

PASSENGER VESSELS



Photo courtesy of Prince of Whales Tours

New designs for new uses ...thrills, comfort and safety.

risky, particularly for large numbers of passengers unused to mobile platforms. Ship's embarked tenders themselves are not just "boats" but substantial vessels requiring specialized lifting appliances and utmost care in operation.

Close quarters on a ship make a fertile ground for incubation, whether this is crowd dynamics or health effects. What means do the ship's commander and crew have at their disposal to control (identify, isolate, remediate or eliminate) potential arisings? In a city of 8,000, what recourse to medical, legal, or even spiritual assistance might one require, even for a short period of two weeks or so? In this sense, safety at sea merges with comprehensive security with respect to the well-being of the passengers.

Much of the scale and pace of modern cruise operations requires a degree of "just-in-time" logistics — the precise co-ordination of re-provisioning and refueling during the passenger-loading cycle. But what happens when this cycle is interrupted or delayed, as in the case of the *Carnival Triumph* disablement in the Gulf of Mexico last month? And in the worst case, notwithstanding the availability of rescue craft (liferafts), does the scale of the operation and the demographics allow a timely abandonment? Or, on the other end of the scale, how quickly can the ship react to the unlikely event of a person overboard, to get word to command that someone is missing, and to recover the person?

Solutions

Fortunately, the industry is constantly striving to meet these challenges and to innovate ways to deal with existing factors at new scales of magnitude. Their success in this is

illustrated by the generally good safety record at the top end of the industry. Notwithstanding the recent experience of the *Triumph* passengers, regulation continues to evolve to redress shortfalls and to keep pace with scale, and is applied judiciously to newbuilds in a timely fashion. Automated processing systems and tracking of embarkation/disembarkation by scanners enables accurate and timely adjustment of passenger data. Comprehensive continuous monitoring of ship's systems as well as passenger services and areas helps to initiate immediate corrective actions.

And while we have been, for the moment, focused on large ships, many of the safety and procedural improvements in the passenger-carrying business have been applied to smaller operations. Improvements in the stability and operational effectiveness of fast rescue craft have been incorporated in the design of whale-watching and other adventure craft, helping to create an industry for which there were few suitable vessels a generation ago. Better knowledge of survival and immersion risks has resulted in not just safer but more comfortable environmental gear to enhance open-water experiences. Cutting-edge (only a slight pun) design has introduced oceanic catamarans which permit fast and comfortable (i.e., safe) passages even in developed sea-states between distant islands. Developments in liferaft technology have made possible the carriage of passengers in accordance with SOLAS requirements on vessels too small to carry a suitable number of conventional lifeboats. And advances in digital navigation and communications have enabled real-time tracking

of both vehicles and marine life.

While some passenger-carrying vessels (e.g., hovercraft) have had their moment, the industry continues to expand into new areas and niche markets which bring their own risks. Smaller cruise ships with specialized itineraries are extending into more remote places. Sailing ships have made a modest, modernized come-back in niche markets for those desiring an authentic experience either for adventure or life-skills training. And increasingly capable mini-submarines are deepening (sorry!) the range of passenger-vessel operations. Each of these has the potential to add their own specific needs to the accretion of knowledge required to guarantee the safety of passengers at sea.

Conclusion

Lest it be forgotten, in many parts of the world, the business and problems of passenger vessels are archaic in the proper sense...primordial. We continue to hear of accidents that are the result of stability issues, overloading, fire, collision, and poor standards of training (among others). So while our concerns here in the Pacific Northwest are oriented to the more affluent end of the business, there are many places in which the safety standards we take for granted are not much respected.

But nor should we be complacent about our own successes. It is appropriate, therefore, to revisit the issue of passenger vessel safety at regular intervals. This indeed is the purpose of the BC Branch Nautical Institute's spring conference. We are pleased to offer an interesting and well informed range of speakers, including as our keynote guest Stephen Payne, OBE, chief designer of the *RMS Queen Mary 2*. The conference will feature input from all levels of the passenger vessel industry, concluding with thoughts on contingencies from the regional Search and Rescue Commander, Rear-Admiral Bill Truelove.

For more information about the NIBC Conference, please visit us at: www.nibconference2013.com.

Nigel Greenwood is a retired Rear-Admiral of the RCN and a member of the Nautical Institute. He writes and consults on maritime issues from Victoria and at GreenwoodMaritime.com