RESPONDING TO GLOBAL HUMANITARIAN CRISES: THE ROLE OF THE MARITIME UNIVERSITIES

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Abstract. 2008 was a record year for natural disasters, with over 220,000 fatalities worldwide from cyclones, earthquakes, floods, and other events. Additionally, the UN Food and Agriculture Organization (FAO) estimates that more than 9.1 million people died from hunger and poverty in 2008, and in 2007 the number of undernourished people increased by 75 million globally, over and above the 848 million undernourished in 2003 – 2005. Getting necessary aid in a timely manner to the individuals and communities who need it is the objective of the field of relief chain management/humanitarian logistics. There is a need for professional education in this area: According to a Fritz Institute study of the 2004 tsunami, aid organizations suffer from a lack of trained and experienced logisticians. The world's maritime universities can play an important role in alleviating human suffering by incorporating key humanitarian elements into their academic programs. Many IAMU institutions have courses in logistics and supply chain management, and crisis response, which easily could be augmented to include an emphasis on humanitarian relief. The proposed paper will discuss how faculty in engineering, transportation and navigation, business and policy fields can address this vital global issue.

INTRODUCTION

2008 was a record year for natural disasters, with over 220,000 fatalities worldwide from cyclones, earthquakes, floods, and other events. In addition to Cyclone Nargis in Myanmar, the Philippines faced 16 typhoons, and hurricanes Fay, Gustav, Hanna and Ike collectively claimed more than 800 lives in the Caribbean. Since 1900, there have been only two years (1995 and 2005) when more damage has been incurred. Figures from the World Bank's Independent Evaluation Group (IEG) show that present-day costs of disasters are now 15 times higher than they were in the 1950s.

Additionally, the UN Food and Agriculture Organization (FAO) estimates that more than 9.1 million people died from hunger and poverty in 2008, and in 2007 the number of undernourished people increased by 75 million globally, over and above the 848 million undernourished in 2003 – 2005. To respond to this increasingly dire situation, each year the UN World Food Programme distributes more than 3 million metric tons of food to an average of 100 million people in 77 countries around the world. Approximately half of the food distributed by the WFP – the world's largest food relief organization – is shipped by sea and is unloaded in some 78 cargo ports around the world. From the responses to Hurricane Katrina in the United States to the ongoing food crisis in Somalia, maritime shipping is a key means of getting aid to the individuals and communities who need it immediately in disaster situations, or for longer periods of time in the case of more sustained events such as droughts and civil conflict.

THE MARITIME DIMENSION OF HUMANITARIAN RELIEF

The importance of the global shipping community to the alleviation of human suffering cannot be underestimated. In nearly every major disaster – natural and manmade – that has involved a coordinated relief response, shipping has been one of the main modes of relief operations, essential to the delivery of

critical goods and services to the afflicted populations. More generally, while response immediately following any natural disaster is usually provided by the fastest means possible – typically air – longer-term sustained relief efforts are largely conducted by shipping. The role of shipping in disaster relief is an important component of the relatively new fields of study: specifically humanitarian logistics and relief chain management. In each, an important emphasis is placed on the role of the global maritime community as a vital component in any sustained emergency response. For example:

2004 Indian Ocean Tsunami

The undersea earthquake and resulting tsunami was one of the worst natural disasters of recent times, with over a quarter of a million people killed or missing in eleven countries. Waves up to 30 meters high destroyed entire communities and caused widespread devastation to critical infrastructure, including fishing vessels vital to the local economies. Nations of the world responded with over $7 billion in aid, including support from their naval vessels operating in or deployed to the area. Most importantly, the maritime commercial sector played a critical role in the disaster response. Merchant shipping companies were critical in getting relief supplies to areas devastated by the tsunami. In the immediate aftermath of the tragedy, several companies contributed their ships to the relief effort, while others provided services free of charge. For example, Majestic Cruises deployed its cruise ship Ocean Monarch to Indonesia to be used as a floating medical facility for victims, and the Japanese Shipowners' Association announced that its three member lines offered relief groups assistance with transporting containerized goods. NYK, K Line and MOL all provided free transport to carry relief goods. NYK donated ¥100m ($966,000) and used its 550-teu Shimanami to transport boxes of aid supplies from Singapore to Jakarta, Indonesia, at no charge.

Kashmir Earthquake (2005, Pakistan)

In 2005, a 7.6 magnitude earthquake struck the North West Frontier Province of Pakistan causing damage over an area of 30,000 sq km. 79,000 people were killed in the remote mountainous region, and over three million were left homeless. Over 6,000 schools were destroyed, 40,000 homes were either damaged or lost, as were over half of the 800 health care facilities in the region (Tatham, POMS). While response was swift and immediate, it took up to six days for most of the assistance to arrive due to the challenging terrain, inclement weather, and the destruction of roads and bridges (Tatham, POMS). All told, forty countries, five multinational organizations, and over a dozen non-governmental organizations provided assistance resulting in one of the largest internationally coordinated relief efforts to date. Much of the aid – both initially and months after the event – arrived by airfreight. While the use of air is imperative in initial days after a disaster, as it provides the fastest response, efforts are usually made to switch to road and sea transport as soon as possible to reduce costs. An important study has shown that more aid could have reached the victims of the Pakistan earthquake without a significant sacrifice of time, and at a significantly lower cost, had relief supplies been forward-positioned in strategic areas at sea prior to the event (Tatham, POMS). The authors go on to argue the importance of *sea-basing* of humanitarian relief supplies around the world, near the most disaster-prone regions, as a means of ensuring faster response times, and more lives saved.

Cyclone Nargis (2008)

The powerful storm struck the Irrawaddy Delta of Myanmar in May 2008 with 240 kph winds and a 3.5 meter storm surge. 138,000 were killed or missing, and over two million severely affected in the aftermath. 42 % of food stocks were destroyed, and some 60 % of the rice paddies in the affected area were flooded with seawater. India was one of the first countries given permission by the Myanmar government to provide assistance; Indian Air Force planes provided eight tons of relief supplies, and two vessels from the Indian Navy provided more than 100 tons of relief materials. Tragically, despite global protests, other international aid workers were not allowed into the country until nearly three weeks after

the cyclone hit. The World Food Programme and many foreign countries were eventually allowed to deliver food and medical aid by air, but Myanmar's military rulers refused to allow one French and three US naval vessels carrying aid to enter the country (the French vessel alone was carrying over 1,500 tons of supplies). Great Britain dispatched the HMS *Westminster* to provide assistance, but was also refused permission for its aid to be delivered. In addition to carrying water and much-needed supplies, the military vessels also had helicopters that could have been used to deliver assistance to the more remote areas. Nearly three weeks after the hurricane struck, the military junta granted permission for commercial ships to deliver aid (it is not known how many actually did so), but was unrelenting in its refusal to allow the US, French and British military vessels to enter its waters.

Somalia

At the height of its relief efforts, the United Nation's World Food Programme carried 32,000 tons of food each month into Somalia where civil war, combined with a series of devastating droughts, have created a humanitarian crisis worse, by some estimates, than that occurring in Darfur. Between 80 % and 90 % of WFP food aid for Somalia arrives by sea and more than 2.6 million people in Somalia were dependent on food aid in 2008 alone. Land-based alternatives are problematic; it can take three weeks for a truckload of food to arrive in Mogadishu from Mombasa and drivers are often attacked. The security situation for humanitarian work is critical: In 2005 the World Food Programme had to suspend all deliveries of food assistance by sea to Somalia for several weeks due to vessel hijackings by pirates operating in the country. While many WFP vessels now receive military escort, vessels carrying non-WFP humanitarian assistance do not, and hijackings and pirate attacks have continued to impede relief efforts. Humanitarian agencies have said they are increasingly unable to help millions of Somalis due to piracy and other dangers, and they continue to warn of an "impending humanitarian catastrophe" in the country.

United States

After the 9/11 attack on the World Trade Center (2001), up to 1 million people were evacuated from Lower Manhattan by water in a spontaneous response of privately and publicly owned watercraft. Additionally, immediately following the 1989 Loma Prieta earthquake in California, ferry service between San Francisco and Oakland, which had ended decades before, was restored. Crowley Maritime (a private corporation), largely acting alone, provided the ferry capability as an emergency response service within three hours of the earthquake, due to the collapse of a section of the critical San Francisco-Oakland Bay Bridge, thereby saving those stranded by the loss of the bridge hours of transit time. The service was offered free of charge for a day and a half, with substantially reduced, state-subsidized fares implemented after that. (Nincic, 2007).

THE ROLE OF THE MARITIME UNIVERSITIES

"Contemporary maritime education seems to place excessive emphasis on cramming students with inadequate knowledge and skills required to operate ships. What this does is to produce seafarers who lack pride in their work, and do not posses a true seaman's spirit."

Dr. Yohei Sasakawa
Dalian, China

Collectively, those of us involved in Maritime Education and Training (MET) around the world should feel inspired and challenged by such a strong statement. While it might be easy to blame this lack of *spirit* on our students, our culture and society, increasing technology, STCW standards or "the other professor in the next classroom," in reality we all share the responsibility to produce appropriately prepared seafarers and maritime professionals. But before we can discuss changes to MET, we must first define what we mean by the *seaman's spirit.*

Educating the whole mariner: Instilling the *seaman's spirit*

It can be argued that one of the strongest bonds shared by seafarers is a deeply felt commitment to help a fellow seafarer in need or distress. We recognize the inherent dangers in our profession, and we have always been prepared to go out of the way to help our fellow seafarers in times of crisis or emergency. Navigators are trained and educated to choose the most efficient routes between ports, and engineers to run the engines at optimal speeds and efficiencies to help the shipping company fine tune systems and keep operating costs as low as possible. However, immediately upon getting a distress call, the engines are placed at full ahead, traffic patterns altered, weather warnings ignored and the ship is headed in the direction of the call. Whether this behavior to help others in distress at sea is instilled or inherited, this selflessness is a reflection of the true *seaman's spirit.*

Maritime universities across the globe appropriately are expanding their traditional roles of "training" navigators and engineers for ships to include more comprehensive maritime studies, including the business and policy of shipping, maritime law and economics and environmental issues relating to the sea and to climate, and the increased importance of inter-cultural communications – these are all vital to keep up with a rapidly changing maritime world. But perhaps it is also time to take advantage of the natural inclination of mariners to help others to expand the nature of the *seaman's sprit* by including an increased study of ethics and humanitarian efforts in our curricula. As mentioned earlier in this paper, humanitarian and disaster relief efforts are accomplished to a significant degree by ships and other sea-borne traffic; it is expected that this will continue and even expand into the future. While these efforts are carried out by seafarers trained and educated by the world's maritime universities, how many seafarers truly understand their unique role in responding to the ever-growing numbers of humanitarian crises in the world and seek professions in the fields that plan and implement these relief efforts?

The concept of humanitarian relief is certainly not new to maritime training programs. For example, in 1948 cadets from the California Maritime Academy participated in "CALIFORNIA FRIENDSHIP," a 4-month, 21,000 mile training cruise that loaded milk, food and clothing at California ports and delivered them to cities in Europe and the Mediterranean that had been devastated by World War II (Appendix A). To this day, a training cruise just does not seem complete without the students organizing a toy and clothing drive to one or more orphanages in the ports they will visit on their annual training cruise.

Educating for humanitarian relief

The American Association of Colleges and Universities (AACU) recently developed a program called "Liberal Education and America's Promise" (LEAP) outlining the essential learning outcomes of any educated person. One of the four essential outcomes categories is:

"Personal and Social Responsibility which includes; civic knowledge and engagement, intercultural knowledge and competence, and ethical reasoning and action; anchored through active involvement with diverse communities and real-world challenges" ("Liberal education").

Each of our existing departments and programs in our respective maritime universities can contribute to this outcome in very real ways; ways which will develop and foster pride and a strong work ethic in our students – and instill a new spirit of responsibility and sense of place in the maritime world in our graduates.

Today's modern maritime universities have all the pieces in place for preparing professionals for sea-going and shore-side positions with many options and opportunities. We have the programs, the infrastructure, the technology, the experience and the know-how. We should feel obligated to take MET to the next level, to restore the *seaman's spirit*, because we also share traditions of social responsibility and we share the oceans. We owe it to those who came before us and to those who will come after us to

expand this spirit and desire to assist not only those in distress on the seas, but those on the shorelines and those inland who can best be helped by the efforts of the maritime community.

Suggestions have been made about how academic institutions can expand their role in humanitarian relief efforts. For example, in 2003 the Fritz Institute, one of the world's leaders in humanitarian logistics, and Georgetown University laid out a series of guidelines to prepare professionals for humanitarian work and to instill a greater sense of awareness of the roles the academic community can play in alleviating the impact of natural and human disasters (Appendix B). Two important suggestions included the development of "multi-disciplinary curricula to prepare students for careers in humanitarian work" and the need to "increase awareness in the university community of the benefits of providing programs focusing on humanitarian fields, especially in the social sciences."

It has been said that the life of a mariner is hours of boredom interrupted by minutes of sheer panic where decisions have to be made instantaneously that could have significant safety and fiscal implications. Maritime Universities have always implemented this kind of understanding. Mariners thrive in an environment where situational awareness is the key. Training for and understanding the evolution of emergencies, coupled with an acute awareness of what is happening at the time and knowing the tools available, are what allows a decision maker to act swiftly, firmly and effectively. When the tools available include - in addition to the technical and social-political tools mentioned above - strong ethical reasoning and social responsibility, the results can be expected to bring higher rates of success. Due to the uncertainties of timing, severity, and location of humanitarian disasters, humanitarian logistics and relief chain management are skill-sets that require quick thinking, immediate action and fast paced decision making.

The following explains briefly how faculty in MET institutions and programs can and should incorporate some of the practical applications of humanitarian relief concepts into either new or existing coursework for their majors.

Marine transportation (Navigation)

The faculty of Navigation or Maritime Transportation teach most of the aspects of ship and cargo handling. Examples of containerized or bulk cargo for relief missions such as are needed for humanitarian efforts can be included in courses of stability, cargo handling and port and terminal management. Many Maritime Universities also teach courses in the business of shipping and logistics through their programs of Navigation Studies, but for this paper, these topics will be covered under the Programs of Business. In addition, discussion of career opportunities with maritime international aid organizations such as Mercy Ships, or OM Ships International will provide the impetus for teaching about the important role that maritime organizations have with humanitarian efforts.

Engineering (Logistics; technological innovations)

Logistics and Supply Chain Management (SCM) are the terms usually introduced to teach about efficiencies and the effectiveness of moving goods and services from the beginning of an operation through its conclusion, regardless of whether that operation is production, sale and distribution, or product waste removal. While Logistics and SCM are often taught from the schools of Business, there are many programs where these courses are taught from the Engineering Schools, as in many ways, the theories and tools are similar to those studied in programs such as Industrial Engineering. Industrial Engineering courses cover a broad base of studies such as Operations Research, Engineering Management, Queuing Theory and Optimization. Issues and breakthroughs in the development of Humanitarian Logistics and Relief Chain Management are offshoots of traditional Logistics and SCM studies and in the United States are growing from Engineering Schools in such Universities as the Massachusetts Institute of Technology (MIT), the Georgia Institute of Technology (Georgia Tech) and

Stanford University. For those institutions, such as Princeton University for example, that do not have Business Schools or do not offer undergraduate Business degrees, they prepare many future business leaders through programs leading to a Bachelor of Science in Engineering.

Additionally, Engineering Schools can address other critical issues when responding to humanitarian disasters. This could include power generation, water purification, communications, port and harbor infrastructure development and repair, and a wide assortment of environmental issues such as clean-up and sanitation systems.

Business Administration

Whether taught through the programs of Navigation, Engineering or Business Administration; Logistics and SCM are the key elements in the development of successful and timely responses to humanitarian disasters. Issues such as time to delivery, inventory, warehousing, permits, traffic patterns, points of entry, legal issues such as customs and immigration, and economies of scale are critical to the mission. To save lives and reduce the complications of disease, it is imperative that decisions of the movement of these goods and services are made efficiently and effectively and to ensure minimum waste.

Computer Science

There are numerous issues involving technology and computer science that are important to the delivery of humanitarian goods and services. Effective wireless communications, Geographic Information Systems (GIS), Global Positioning Systems (GPS) satellite tracking and surveillance, and inventory control are all tools that will be critically important to the decision makers and on scene personnel in areas hit by natural or man-made disaster. Conditions change rapidly at these times and effective, timely and accurate information sharing is crucial. Computer Simulations can be developed beforehand to test the effectiveness of response plans; additionally appropriate simulation systems can be used during an emergency to predict outcomes.

Maritime Policy

Effective humanitarian disaster relief is not possible without an understanding of corporate, local, national and international policy. Many organizations including relief agencies, police, fire, military and other government agencies will respond to a natural disaster, and only a coordination of efforts will ensure an effective response. From the maritime response perspective, bringing supplies stored around the world and delivered to a single point of entry will cause major logistical issues, and how these issues are dealt with during an emergency will be integral to the success rate. To avoid making costly and embarrassing mistakes, a strong understanding and appreciation of the area's political, economic, cultural, religious and historical perspectives will be among the most important resources a responder can bring to a crisis situation.

CONCLUSION

As Dr. Sasakawa noted in his opening remarks to IAMU AGA 7 in Dalian, China:

"It is said that without the contribution of seafarers, half of the world would freeze and the other half would starve. This underscores the important role of these people who work on the frontlines of maritime transportation."

Those of us at the forefront of Maritime Education and Training play a critical role in ensuring that all of our students are not only prepared to undertake their jobs in a professional and efficient manner, but that they also bring to their work a true sense of the *seaman's spirit*, pride in what they do, and an awareness

of the vital role they play not only in the economic life of the world, but in the relief and assistance they can bring to those less fortunate, and in the times of their greatest need.

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Appendix A

STATE OF CALIFORNIA
UNITED STATES OF AMERICA

CALIFORNIA MARITIME ACADEMY
OPERATING
TRAINING SHIP GOLDEN BEAR
ON
OPERATION "CALIFORNIA FRIENDSHIP"

SHIPPER: *The People of the State of California, U.S.A.*

CONSIGNED TO: PEOPLE OF FRANCE

NOTIFY: AMERICAN AID TO FRANCE

PORT OF LOADING: STOCKTON, CALIFORNIA

PORT OF DISCHARGE: MARSEILLES, FRANCE

STRAIGHT BILL OF LADING—NOT NEGOTIABLE
FOR SHIPMENT ON TRAINING SHIP GOLDEN BEAR
ON ANNUAL TRAINING CRUISE—1948—B/L No. 5

MARKS	CONTENTS	CUBIC FEET	FREIGHT AND CHARGES
AMERICAN AID TO FRANCE	FOOD CLOTHING	692	FREE

In witness whereof the Governor of the State of California has signed four bills of lading, one of which being accomplished the others stand void.

Governor of the State of California

Dated at STOCKTON *California, U. S. A.,* 15 JANUARY *,* 1948.

Appendix B

Georgetown University and Fritz Institute:

Challenges of Disaster Management Education

Suggestions for Universities

Work with agencies to design educational and training programs that meet the needs of the agencies.

Develop multi-disciplinary curricula to prepare students for careers in humanitarian work.

Seek faculty within the various disciplines who want to teach and research humanitarian issues.

Increase awareness in the university community of the benefits of providing programs focusing on humanitarian fields, especially in the social sciences.

Make available adjunct faculty and short-term sabbatical research opportunities for operational agency staff.

Encourage faculty who are embarking on field research to contact and gain the assistance of humanitarian and development agency staff operating programs in the research areas.

Facilitate cooperation and communication among university programs devoted to aspects of humanitarian studies and research.

Create partnerships with developing country institutions

Devote resources to capacity building as appropriate

Encourage faculty and student exchanges

Consider establishing an academic association of humanitarian studies and/or a dedicated journal.