Challenges Facing the U.S. Flag

Revitalizing the U.S. Merchant Fleet Through a Shift in National Focus

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Abstract

Despite the history of a strong and prosperous U.S. maritime industry, today's U.S. merchant fleet is characterized by inadequacy. Through dwindling numbers as a result of mismanaged legislation as well as shifting global politics, U.S. maritime policy has failed to maintain adequate means of supporting a national fleet. Even with the obvious benefits to the national economy, international political power, and national security, the U.S. government is seemingly unable to overcome internal politics and provide the nation with a strong merchant marine. Ultimately, when the question about what became of the U.S. merchant marine is posed, the answer is that it was essentially turned over to the rest of the world. Without any meaningful change, the U.S. fleet will at best retain its current 2nd rate position in the international maritime community, while at worst it will be left to continue to slowly become irrelevant to the same community that it once ruled.

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Revitalizing the U.S. Merchant Fleet Through a Shift in National Focus

The significance of a strong merchant marine has long been understood and recognized as an important tool for the prosperity of states (Long, 1994; UNCTAD, 2018). Its importance in forwarding globalization and trade makes it an essential part of the world economy. For the United States, a geographically inclined maritime power, the significance of a strong merchant marine is even greater (USCG, 2018). The U.S. relies on the merchant fleet in two major ways, as a tool to advance its economy and global power (Stopford, 2009) and the second as a means of acting as a military sealift during times of war and national emergency (CSBA, 2017; Houser, 1991; NACOA, 1985).

Even with the significance of the U.S. merchant fleet understood by so many, it has been declining since the end of World War II (Carlisle, 2017; NTS, 2019; MARAD, 2019). Over time, the U.S. flag came to represent the honor of its state, and by extension, the U.S. flagged merchant fleet was seen as a continuation of national sovereignty abroad. Though, with changes in national policy, many saw the U.S. flag as a hindrance to the business of shipping instead of an asset and began to flee (Carlisle, 2017; MARAD, 2019). The downturn of the fleet itself has rippled out to affect many other industries surrounding it. Shipyards, a vital part of maritime commerce and national defense, rely on a healthy fleet. Thus, a decline in active shipyards has followed the downturn of the U.S. fleet (NACOA, 1985; Klein, 2015).

Today the U.S. merchant fleet is in poor condition and faces many challenges to its growth and continued viability in terms of foreign commerce (Buzby, 2018; Matsuda, 2010). Chiefly among these challenges is a lack of effective policy (Lawrence, 1968; Dickison, 1968; Varney, 2013), though other threats to the maintenance of a merchant fleet are present as well.

The majority of these include mismanaged protectionist policies that have failed to achieve meaningful development of a U.S. fleet, specifically the Merchant Marine Act of 1920 (Varney, 2013; Dickison, 1968). The results of these mismanaged policies have led to an increase in the operating costs of U.S. flag vessels compared to foreign services (MARAD, 2011). This forced many U.S. companies to turn to foreign flags of convenience in order to avoid domestic policies that negatively impacted their bottom line (Carlisle, 2017). Some argue that these policies were not mishandled, but purposefully created as a way to placate U.S. shipping companies by allowing them the ability to seek more lenient labor, tax and import laws from abroad. This would satisfy the business concerns of U.S. shippers, while still allowing the U.S. government access to a merchant fleet during times of national emergency by drawing on the support of a politically aligned state that also offered a flag of convenience for U.S. shipping companies (Carlisle, 2017). In comparison, government sources such as the Maritime Administration and Department of Transportation promote these policies as being vital to the sustainment of the U.S. merchant fleet (MARAD, 2019). Carlisle's statements, if correct, shows that the U.S. government creates a dangerous precedent of relying on foreign states, even politically aligned ones, while the Maritime Administration's seems to fail to acknowledge the massive decline in the U.S. merchant fleet's role in foreign commerce.

Others have pointed out many of these problems and have created recommendations aimed to right the errors of national policy (Houser, 1991; Lawrence, 1968; Long, 1994; NACOA, 1985; Varney, 2013). Among those attempting to solve these problems are the government organizations directly responsible for the merchant marine. Recognizing the drastic difference in cost, the Maritime Administration implemented the Maritime Security Program, a vessel operating subsidy program. This program issues retainer payments from the government

to U.S. carriers to help bring down daily operating costs, and in return is promised access to vital U.S. merchant vessels for government cargo in times of need (MARAD, 2011). This, combined with government available cargos that have higher rates than commercial cargoes, has reduced this gap, though not entirely. Many proposed modifications to policy revolve around altering the Merchant Marine Act of 1920 in ways that would reduce operating costs of U.S. flagged vessels further. This would make the U.S. flag more attractive to shipping companies and see the U.S. fleet grow. These include removing the requirement for Jones Act vessels to be built domestically, altering the required amount of crew or percentage of required U.S. crew and many more. Though none have yet to be implemented in a way that has reduced overall operational costs (Houser, 1991; Long, 1994; NACOA, 1985; Varney, 2013). The goal of this thesis will be to review the changes of the U.S. merchant fleet over time, analyze the problems holding back and contributing to its development and create effective and feasible policy recommendations to ensure its growth.

Overview

> *"Any nation which relies on another nation for its supply of ships loses in time of peace its commercial independence, and in time of war places its very existence at the mercy of the powers which command the ocean."*
> - U.S. Secretary of the Navy, William E. Chandler in an 1882 annual report to Congress

The United States is one of the leading powers of the world, both economically and militarily. With the largest GDP, maintaining nearly a quarter of the global economy (*fig.1)*, and one of the highest purchasing powers (Silver, 2019) combined with its significant military strength has long since established its place as a world power. The U.S. remains today a major source of trade in the global economy. Despite this, as recently as 2012, waterborne trade in the U.S. fell by 2.3 percent from 2011 (MARAD, 2013). This, combined with the long-standing decline in the United States' presence in the global fleet from 16.9 percent in 1960 to a meager

0.4 percent in 2016 (*table 2)*(DOT, 2019), shows the poor state of the U.S. merchant fleet. The United States has a long history of being a seafaring nation. Both its geography, with its unrestricted access to the Pacific and Atlantic Oceans, Great Lakes, Western Rivers, Gulf of Mexico and the Arctic region, and its historical roots tie the United States firmly to being a maritime state. Even prior to the founding of the nation, maritime trade served to foster economic growth in profound ways (Roland, 2008). Despite this long tradition and history, the decline of the U.S. merchant marine has continued, and will continue until a viable national maritime policy is put into place to aid in its recovery.

A large portion of the world's merchant fleet is financially supported by their respective states, and historically American shipowners have been afforded the same opportunities. The U.S. government, via the U.S. Merchant Marine Act of 1936, section 605(c) grants the federal government the ability to issue 'operating-differential subsidies' to qualified ocean carriers (McCalley, 1978). These subsidies, as noted by the Los Angeles Times in 1995, were costing U.S. taxpayers $1 billion annually, and have only risen since (Stolberg, 1995). Yet even these large government subsidies are only helping to support a small, aging U.S. merchant fleet. A major hindrance to a strong U.S. merchant fleet is the significant cost of maintaining a U.S. flagged vessel. While these subsidies offer some aid, between the high cost of producing the vessel in the U.S., the cost of a U.S. crew, the considerable U.S. tax burden and the complication of operating with major maritime unions, the difficulty in maintaining an economically viable position in the U.S. flagged fleet is difficult for many maritime companies. The steady decline of the U.S. flagged fleet has had a greater impact than simply a loss of income for ship-owners. U.S. shipyards have also suffered under poor domestic maritime policies and the subsequent shrinking of the U.S. merchant fleet. From its days as the original thirteen colonies, American

shipbuilders provided some of the best coastwise vessels afloat (Roland, 2008) to its involvement in World War II and a huge surge in the merchant marines, America has had a strong history in commercial shipbuilding. In 1975, the U.S. was building more than 70 commercial vessels annually. Shortly after, the shipbuilding industry suffered from a lack of new orders. Today, the U.S. falls in at 19th in the world for commercial vessel construction, maintaining a meager 0.35 percent of new construction globally. This decline in shipbuilding has forced many shipyards to cease operations, resulting in a significant loss of available jobs (Klein, 2015). Yet even with this decline, we remain one of the strongest economies worldwide. While other rival economies, such as China, Japan, and South Korea, have made significant investments in their own merchant marines and shipbuilding programs, today they are accountable for a sizeable portion of their respective economies. The link between a healthy maritime transportation system and a prosperous state has been shown by the aforementioned nations. Yet the U.S. has stood apart in maintaining a strong presence as might otherwise be expected of a state with a powerful economy. Instead, it has allowed its own fleet to diminish in numbers and ability.

Though the most recent and obvious sign of the decline of the U.S. merchant fleet was the entirety of the military sealift operation during the Gulf War. Among these problems was the slow activation of the Ready Reserve Fleet (RRF). This was partly due to a small maintenance budget resulting in the impoverished overall state of the RRF. This resulted in RRF ships being late to arrive at their respective ports and take on cargo. Hindering the fleet further was the difficulty in finding trained crews. To fully man the activated RRF vessels the U.S. Maritime Administration (MARAD) had to scavenge from union halls and retirement rolls around the country. Though by far the most worrying issue was the fact that the Military Sealift Command (MSC) had to charter foreign-flagged vessels to meet the logistical demands of the U.S. Armed

Forces. The U.S. fleet simply did not have enough vessels of the right kind to support a large deployment overseas (Long, 1994). This was a stain on the U.S.' ability to ensure its own national defense by reducing the effectiveness of its armed forces.

Despite the rise in fuel prices and the high capital costs of maintaining a merchant fleet made up of civilian vessels, maritime transportation remains the most economically efficient way of shipping large volumes of goods at a low unit cost. The U.S. Maritime Transportation System (MTS) supports over $4.6 trillion in economic activity annually and is responsible for employing 23 million American citizens. As the MTS is tied into the global economy, it is the largest and most effective route for the American economy to connect to the rest of the world. The MTS also is critical to the national defense of the U.S. by supplying vital sealift capabilities to the U.S. Armed Forces and their logistical needs. Any failure on the part of the U.S. MTS would have the potential to disrupt the U.S. economy and threaten its national defense (USCG, 2018). Given the use of a merchant fleet as both a tool for the economic development of a nation as well as a means of ensuring its own national defense, it is in the best interest of the United States to do whatever it can to redevelop and maintain a strong U.S. fleet that spans the world's trade routes.

The Downfall of Global Prestige

The flag of a state is a powerful representation of the ideals held closest by her people. It is a symbol of the pride of a nation, and so the protection and proliferation of that flag is a significant consideration for any government that takes part in the international political arena. So, when the authority of the flag is challenged, the state responds. Thus, a natural worry for every state is the reputation of its flagged merchant fleet; a major representative element of its interactions overseas. In this way, the U.S. is no different than any other major actor in terms of the expectation that merchant vessels flying its flag be respected by foreign nations. Early on in

its history, the U.S. found itself in a world where in order to effectively declare its sovereignty, it had to ensure the respect of its merchant flag abroad. If the sovereignty of the flag was not properly recognized, it was, by extension, a show of disrespect towards the immerging U.S. In this way, foreign recognition of the flag was not limited to business or legal status but was also a matter of national honor and prestige. The early principle of the freedom of the seas, *Mare Liberum*, held that "ships of all nations had equal rights to travel on the high seas" (Carlisle, 2017, p. 1). American politicians, as well as the people they served, were very aware of this standard early on and understood that a failure by a foreign power to recognize the rights of a vessel flying a U.S. flag was a failure to recognize the U.S. as a sovereign nation.

From the very beginning of the American republic, the treatment of a U.S. flagged vessel by foreign states was a matter of honor. In fact, this strongly held belief was the start of many military incidents through the 18th and 19th centuries. The situation with the U.S. fleet today remains the same. Whereas the matter of national honor and prestige historically surrounded sovereignty, today it is a problem of proliferation. Where once the U.S. merchant fleet spanned the globe in numbers that rivaled the combined fleets of other major powers, today it makes up less than one percent of the global fleet (DOT, 2019). A radical change regardless of the length of time, and one that should be reversed.

For the purposes of this thesis, the history of the modern U.S. merchant fleet begins in the early 20th century. As before, merchant ships flying the U.S. flag during legitimate business would pull the U.S. into conflict with other states. Sometimes this would lead to war, but often it would be described as a maritime 'incident', requiring the U.S. to fly the flag as a display of power. While the ideas about preserving honor amongst gentlemen were fading away with the Civil War, the sense of national honor still widely influenced the public and their views regarding

the treatment of the national flag. Though at the height of World War I (WWI) when German U-boats were sinking U.S. flagged merchantmen, the issue took on far greater significance in the eyes of the public. Thus, the United States was drawn into WWI (Carlisle, 2017). Shipbuilding immediately became a major wartime industry and the size of the U.S. flagged fleet grew immensely. Within the first ten days, the United States Shipping Board (USSB) created the Emergency Fleet Corporation (EFC) that managed a massive maritime construction program. By the time the war ended in 1918, the EFC had taken delivery of 470 merchant vessels, constructed across 19 months (*fig 2*). This would be recognized as the largest U.S. industrial operation of the entire war backed by a quote from Edward N. Hurley, the chairman of the USSB during WWI, "I am convinced that the country never has realized to what extent the war was won at home by the Shipping Board and the Fleet Corporation, by taking the most desperate changes conceivable". Following the end of the war, the planners at the EFC were forced to make a decision. It was assumed that the war would last years beyond the armistice. But now there were no ongoing military operations to sustain, meanwhile the program had not even reached peak production. Despite this, the USSB decided to continue its efforts, and when the program finally completed in 1922, the EFC had finished 2,312 merchant vessels. This made the U.S. merchant fleet one of the largest and newest in the world (MARAD, 2019).

Before the end of the program, Congress passed a major piece of legislation aimed at capitalizing on the newly constructed fleet, the Merchant Marine Act of 1920. Among other things, this act restricted coastwise trade to U.S. vessels and encourage the USSB to sell its surplus ships to U.S. companies. Though, a slowdown in the global economy following the war as well as a massive oversaturation of the shipping market led to a decline. The U.S. Congress was, in part, content to see a portion of the U.S. fleet moved to foreign flags. In this way, vessels

could be operated at a much-reduced cost and not draw the U.S. into another conflict in defense of its flag all while ultimately staying under the control of U.S. companies (Carlisle, 2017). To ensure that most vessels remained in the U.S. fleet, Congress passed both the Merchant Marine Act of 1928 and the Merchant Marine Act of 1936. These new acts offered various incentives for U.S. companies to keep their vessels in the U.S. fleet, with the more significant being the latter. The 1936 act was intended to "revitalize merchant shipping and strengthen the Nation's national defense" (MARAD, 2019). The act was essentially a means to ease the cost of vessel operation and construction by helping the industry compete against foreign fleets. It did this by offering two major subsidy programs, the construction, and operation differential subsidies. The construction differential subsidy intended to offset costs by paying up to half of the difference between U.S. and non-U.S. vessel construction with the difference going to U.S. shipyards. On the other hand, the operating differential subsidy was paid directly to companies employing U.S. flag vessels to lower the cost of U.S. flag vessels when compared to foreign-flagged ones (MARAD, 2019).

The act's timing was perfect in regard to U.S. national defense. In 1936, growing concerns over the tension in Europe and Asia supported the fear of another world war. With a portion of the original U.S. merchant fleet transferred to foreign flags, the U.S. was able to prevent itself from being drawn in as it was in World War I (Carlisle, 2017). Though, while the reduction in U.S. shipping allowed for more time to prepare, it also directly hindered the wartime environment that would eventually come. Recognizing this, Congress wished to avoid a similar shipping crisis as in World War I and decided to imbue the Maritime Commission with a new mission. This would expand the U.S. Merchant fleet once again. The Maritime Commission would design new cargo ships, seek bids and eventually award their construction and distribution

to U.S. companies. To do this, the Maritime Commission created the 'Long-Range Shipbuilding Program' in 1938. This program intended to grow the fleet while at the same time, replace the older vessels amongst the U.S. merchant fleet by pledging the construction of 500 new vessels within the first ten years. By the time Germany had invaded Poland in 1939 and began World War II, the Commission was mandated to accelerate its timetables. By 1941 the Commission's yearly output was around 400 vessels. Adding to this, President Roosevelt announced a plan to build another 200 vessels that would later be known as 'Liberty' ships (*fig. 3*). These new ships were not as advanced as those planned by the Maritime Commission, but they were cheap and quick to construct. Despite concerns from the Commission over their post-war usefulness, the President's program moved forward. This production increase was one of several during the war and would be known as 'The Emergency Shipbuilding Program' (MARAD, 2019).

With another surge in sealift capacity, there had to be a surge in trained crews to oversee their operation. After entering the war, President Roosevelt created the War Shipping Administration in 1942. This Administration would be allowed to oversee the operation, purchase, appropriation and the general use of all oceangoing merchant vessels under the U.S. flag, including mariner training programs for their crew. The groundwork for this training was due, again, to the Merchant Marine Act of 1936 which created the United States Maritime Service (USMS). This organization expanded its training regime as the war grew. By midway through, a major training facility in Sheepshead Bay, New York, the Kings Point Merchant Marine Academy and many other training facilities across the country had been established. By the war's completion, the U.S. Merchant Marines had been a crucial factor in the Allied victory. It enabled the amphibious invasions of France, Italy and North Africa in the Atlantic while serving a similar role in the Pacific as well as supporting post-war garrison forces. This was all

facilitated by the 5,171 ships produced and 262,474 mariners trained between 1938 and 1945. By 1946, U.S. shipowners operated more than two-thirds of the remaining world shipping (MARAD, 1019).

Along with the impressive role played by the U.S. Merchant Marines in both wars, U.S. Ship-owning corporations had realized that, aside from military and diplomatic concerns, the straightforward profit and loss lessons learned led to a flight from the U.S. flag in the 1950s and 1960s. These flags, most notably Panama and Liberia early on, would be pretexts to the growth of what would be known as flags of convenience. Operating a foreign ship with a foreign crew was simply cheaper, even considering the subsidies offered by the U.S. government. This flight from the flag was also upheld legally in U.S. courts. The U.S. courts ruled that U.S. law did not apply to American owned, foreign-flagged vessels[1]. Instead, the law of the flag state presided. Given a legal incentive to flee both the expensive U.S. flag and labor laws, U.S. companies sought quick ways to switch their flags (Carlisle, 2017).

The decision to flag out came down to a desire to operate in a jurisdiction that was free of "threats of confiscation, restrictive legislation, high labor costs, or high taxes" (Carlisle, 2017, p. 107). As early as 1919, it became clear that Panama supplied ship-owners protection from all these concerns for vessels flagged by its state. In addition to satisfying the business interests of U.S. corporations, in a study conducted by the law firm Sullivan and Cromwell on behalf of the

[1] An early U.S. court case referencing an obscure ruling in 1905 made by the Permanent Court of Arbitration at The Hague in regards to cases where the French flag was granted to Arab traders on the East African Coast engaged in slave trading. Of particular concern was the privilege against searches of French flagged vessels. The Tribunal ruled that each sovereign nation was free to determine whom to give the right to fly its flag and to issue rules governing its grant. (Permanent Court of Arbitration, 1905)

Harriman firm, it was pointed out that they also could be acceptable to the political interests of the United States in a letter issued in 1922,

> "We have made a study of the laws of various countries which have no national aspirations to compete with the United States in the development of its merchant marine and its naval power… The Panama flag will probably be the one most suited to our own necessities, and we believe, most acceptable to the interests of the United States in the development of its trade and as regards availability in time of military necessity." (Carlisle, 2017, p.119)

These concerns, those of the state and the owning corporation, are held to be the two factors that must align for a foreign flag of convenience to develop. Other relevant factors in determining flags of convenience that developed over time include,

- The evasion of flag-state laws. These concerns focus mostly around regulations that reduce the competitiveness of a ship in the service of international trade. Such as labor and laws governing a vessel's operation and upkeep.
- The benefits of having an offshore monetary environment. This concern largely focuses around finding a favorable jurisdiction. For example, registering ships abroad in order to avoid double taxation practices or lesser taxes in general.
- Political or diplomatic concerns. For example, vessels switched registries to the Panama flag during the Spanish civil war in order to freely ship weapons and supplies to the Spanish government to avoid any obvious political ties with their parent state. (Carlisle, 2017).
- Avoiding import restriction laws of the destination state. Such as rum-running vessels during the prohibition laws in the U.S. or the smuggling of other illegal commodities

- Strategic and concerns of national honor. For example, the flagging out of U.S. vessels to Panama, a country that, presumably, would align with U.S. strategic interests during times of crisis or need so long as it remained dependent on the U.S.

The proliferation of flags of convenience would continue on, and likely through, to the modern day. Other flag states would develop as political, business and legal interests shifted to include states such as the Marshall Islands and Liberia (*Table 3*). This combined with downsizing efforts such as the Merchant Ship Sales Act of 1946, and others that followed would only serve to reduce the operating U.S merchant fleet further (MARAD, 2019).

The Modern U.S. Merchant Marine

Today's U.S. flagged fleet has drastically fallen in number. The U.S. coastal and intercoastal fleet currently maintains around 40,000 vessels, though the large majority of these are non-self-propelled barges. Out of these 40,000 vessels, only 100 are large self-propelled oceangoing vessels of 1,000 gross tons or more, down from the 221 vessels reported as recently as 1992 (Buzby, 2018). The difference between these two numbers can largely be attributed to older vessels that were retired. The significance here is that very few were ever replaced, further exacerbating the rate of decline in the U.S. fleet. The portion of the U.S. fleet engaged in international trade today has fared no better. Over the 23 years between 1992 and 2015, the number of U.S. flagged vessels serving in international trade has dropped from 183 to 82 (*fig.5*) as well as the share of total cargo taken on by U.S. flagged vessels (*fig.6*) which changed from 4% in 1992 to around 1.5% in 2018 (Buzby, 2018). While the rate of decrease in loaded tonnage is not as high as the loss in U.S. vessels and might be viewed as a positive because it suggests vessels of larger capacities and higher quality, it also results in fewer available jobs to U.S. mariners. Beyond the obvious concern of contributing to unemployment, the larger issue is that

there would be fewer current qualified mariners, impacting the readiness of reserve fleets, like the RRF, in times of national emergency.

Factors Preventing Growth

There are many factors, resultant from U.S. legislation and policy and the current state of the world economy, that are preventing the growth of the U.S. merchant fleet. The largest challenge for U.S. carriers competing with foreign carriers is operating costs. The cost for U.S. vessels has been determined to be around three times higher than that of foreign competitors (Matsuda, 2010). Of the various costs associated with the operation of a vessel, labor costs are the largest. Other than vessel operating costs, there are many others that make it difficult to operate under the U.S. flag. One example is the exposure to legal liability costs. U.S. flagged carriers have identified liability costs as an area where they face higher costs than foreign competitors. The potential for such claims is recognized as being much higher in the U.S. than other major maritime nations because of the rights of injured victims as well as the level of expected overall environmental responsibility and reparation payments. Other notable costs include U.S. taxes, insurance rates, and other various duties owed (Matsuda, 2010). Another contributing factor to the cost differences between U.S. and non-U.S. flagged vessels is complex U.S. domestic legislation. The Jones Act is one of the most significant pieces of U.S. maritime legislation. Part of the act governs U.S. cabotage law by requiring U.S. vessels engaged in coastwise trade to be built in the U.S., owned and operated by a U.S. company and crewed by a 75% majority of U.S. citizens. All requirements, while attempting to protect U.S. jobs and shipbuilding, another vital part of the MTS, drastically increase the costs for U.S. carriers.

Maritime Policy

Shipping has long since moved away from an independent owner-operated, free trading and unregulated industry to that of a largely institutionalized and deeply regulated service and transportation industry. Historically speaking, shipping held a long tradition of self-regulation. The only real restraints came from insurers and investors who would regularly involve themselves in the business by placing restrictions or certain conditions on the construction of vessels. In fact, the only time that a state would directly involve itself in shipping would be during times of war or national emergency. The most extreme involvement by a state outside of a war was the act of reserving commercial tonnage for its own uses. However, this was during times where the major difference between merchantmen, which were often armed before the time of international maritime policies like the United Nations Convention on the Law of the Sea, and naval vessels was purpose rather than armament. The shift towards government regulation only really emerged at the end of the 19th century when clippers and steamships competed for supremacy. It was at this time that the role of shipping changed. Until this point, ship operators, who were also usually the owners, played the roles of traders, colonizers and in general, entrepreneurs. Now they serve almost exclusively as a transport and service industry, typically only facilitating the transport of cargo rather than the entire process of trade. This shift brought about the development of regulations to ensure the quality of the transportation service. Regulatory bodies would grow from what was known as Liner Conferences (the associations of multiple shipping companies) to direct involvement by states in the form of legislation. Finally, international regulatory bodies such as the UN Conference for Trade and Development would grow to govern international maritime affairs (Frankel, 1987).

For maritime nations, such as the U.S., that actively seek to participate in international trade, maritime policy is a significant factor that guides these interactions. Governments create their maritime policies to accomplish various goals. Typically, these goals include supporting state maritime industries, chiefly shipping and shipyards, safety and environmental interests, national defense and the overall economic prosperity of the state. Often, these goals are contradictory in terms of policy, and policymakers are forced to choose which serve the greatest interest of the state. For example, while bolstering shipyards through protectionist policies that would force a certain minimum amount of business might increase their income and economic security, it would also make shipbuilding potentially more costly for buyers. So, while there is a potential problem with promoting one aspect of the maritime trade network at the risk of another, there are actions that can be taken to balance these concerns. This is done by weighing diverse political and national objectives against each other and finding commonalities (Frankel, 1987). Often the greatest clash is between ensuring economic prosperity through trade and the health of their own maritime industry. The balance usually comes in the form of protectionist legislation or discriminatory policies such as subsidies, reserving certain classifications of goods for national shipping, tax rebates, or ensuring government goods are moved by national shipping. Today, with the development of globalization and interdependencies, many states have claimed a desire to foster free competition in shipping. Though these claims seem to be made in earnest, more are adopting or expanding restrictive shipping practices aimed at developing their own best interests (Frankel, 1987).

Policy Development Considerations

When developing their own maritime policies, states should consider which issues they intend to control. In his book, *The World Shipping Industry*, shipping expert Ernst Frankel identifies six essential issues that should be addressed when developing maritime policy.

- Policing. A government's pursuit of goals on behalf of public interest.
- Rationalization. Attempt to ensure the efficient use of resources.
- Standard Setting. Maintaining rules that standardize service, quality, safety, environmental security, and other standards.
- Interest Representation. Regulations monitoring the participation of suppliers of shipping capacities and their users.
- Economic. Policy intended to maximize the benefit of economic gain against the perceived need of the state.
- Defense. The effect on the availability and control of state shipping capacity and its use in meeting the needs of national defense.

The policies developed from these considerations go on to affect who may and who desires to register ships in that country. When choosing a flag, ship owners, in turn, consider four factors. The first is how taxes, business, and finance laws might impact the economics of their business. Second, the costs involved in complying with the state's maritime safety standards. Third, crewing requirements, labor laws and other legislation affecting terms of employment. Finally, the extent of naval and political protection offered by the state (Stopford, 2009). Between the concerns of the state and the concerns of shipowners, a policy is created.

Another major determinate is whether the state's registry is national or open. This relates heavily to the previously discussed flags of convenience. In a national registry, the shipping

company is considered to be like any other business registered with a state. While national registries vary state by state, some national registries only allow citizens to be the registered owners of a ship associated with its flag. While a more lenient national registry might allow ownership to be taken on by a permanent resident, or others of similar circumstances, that may not be full citizens of that state. For corporate ownership, the requirement tends to be that the business is registered under the laws of the flag state and its principal place of business be within the flag state. Strict national registries tend to require that all individuals, or a high majority, involved with the operation of the business and vessel be citizens of the state. Also, the state may require that vessels be built in a national shipyard, that its authority be the one to issue licenses and certifications and the vessel is classified by its national classification society (Rogers, 2010). Open registries are ones where the ability of a ship-owner to register a vessel with a particular state does not hinge on nationality as a factor. Typically, open registry flag states have such loose requirements for reasons related to commerce. Often these flag states are characterized by low taxes, lowered crewing costs, less regulatory control and relative anonymity.

20th Century U.S. Maritime Policy

U.S. maritime policy offers a national registry system aimed at ensuring the national, economic and military security of the U.S. These policies created by the U.S. in the early 20th century were in part designed to try to minimize the typical boom-bust cycles that characterized history while trying to diminish the difficulties inherent of flying a U.S. flag. These policies can be categorized into three distinct areas: protectionism, subsidies, and regulation (Williams, 2000). The primary way that the U.S. creates and maintains its maritime policy is through legislation. The maritime policies of the U.S. today are rooted in legislation enacted largely in the early 1900s. A full list of laws and legislation in addition to the ones outlined below can be

found in figure 10 below as well as an illustration detailing the number of U.S. vessels between 1946 and 2009 with the date of each piece of legislation noted.

Merchant Marine Act of 1920

This act was one of the first major pieces of U.S. maritime legislation that established government support for and the construction of a U.S. flagged fleet to improve the U.S. shipping industry as well as support national defense. Among other functions, this legislation regulates maritime commerce in U.S. waters and between U.S. ports. Section 27, known as the Jones Act, deals with cabotage law and requires specifically that all goods transported by water between U.S. ports be carried on U.S. flagged vessels that were constructed in the United States, owned by U.S. citizens and crewed by a 75% majority of U.S. citizens. The Jones Act effectively prevents foreign-flagged vessels from carrying goods between contiguous and some noncontiguous ports, such as Puerto Rico, Hawaii, Alaska, and Guam. While foreign vessels are restricted from carrying U.S. goods from one port to another, they can offload goods in one U.S. port and proceed to another without picking up any cargo intended for the next U.S. port (MARAD, 2011). Supporters of this protectionist-based legislation maintain that it is of strategic and economic interest to the U.S. It is claimed that the act effectively ensures the nation's military sealift capacity, the maintenance of its strategically significant shipyards and the continuation of a viable workforce of trained merchant mariners. Though, as before, often by ensuring the safety of one section of an industry, another suffers. Critics often point out the huge estimated savings for the U.S. economy that would come from the repeal of the Jones Act (U.S. International Trade Commission, 2002). With the repeal of the Jones Act, prices for consumer goods would fall as shipping costs go down with the expected influx of foreign-built and operated vessels. The act provides shippers with incentives for maintaining significantly older

U.S. vessels rather than constructing new ones that would better conform to safety and environmental standards. As a result, shipyards receive less orders for new vessels and have learned to conform to the needs of the U.S. fleet by raising prices that match the high cost of labor and materials that a vessel constructed in the U.S. confer. This steep increase in pricing from U.S. shipyards means that they have effectively priced themselves out of the international market for merchant ships. Meaning that the only companies that place orders for U.S. ships are those that have no choice but to do so.

Merchant Marine Act of 1928

Following World War I, the U.S. flagged fleet was in a vulnerable position. With the oversaturation of the shipping market and a drastic decline in numbers prompted by the fall in demand of a wartime sized fleet, Congress faced a problem. On one side, Congress and the shipping board did not want to risk the possibility of the U.S. fleet being forced out of international trade again as cost differences reemerged, but on the other, it was highly unlikely that unified Congressional support could be obtained for direct subsidies of construction or operation costs. Finally, in 1928, an apparent solution was put forward. Congress would simply enact legislation that conveyed a hidden subsidy for U.S. shipping lines by issuing mail contracts from the U.S. Postal Service. The terms of such contracts were worded liberally, allowing U.S. flag lines to meet their costs and earn capital that would allow them to compete with foreign-flagged shipping. Ultimately, this hidden subsidy would offer sufficiently modest amounts of capital under ambiguous terms while at the same time hiding the intention from Congressional opposition to direct shipping subsidies (Lawrence, 1968).

Despite the apparent success of having passed a hidden subsidy act, the very nature of its vaguely worded guidelines caused it to be extremely ineffective. One significant problem was

that the act lacked any form of useful standard for administering the desired aid. For example, there was no determining scale of which the proper amount of subsidy payments for each contract could be measured against. Instead of the competitive bidding that was called for, "the statutory preferences granted to established companies precluded any real competition" (Lawrence, 1968 p.44). Also, while the initial goal was to support the growth and development of the fleet via capital earned from mail contracts, carriers were not required to pledge or prove new vessel construction in any way. As a result, the Shipping Board failed to administer the legislation effectively. Instead of regulating contracts and funds as intended, it gave out contracts at the maximum rate allowed to every single potentially eligible company with a vessel (Lawrence, 1968). By the time these problems were recognized, a large majority of the funding had already been distributed.

Ultimately the legislation would be severely reigned in as the great depression came about and anti-subsidy Congressional support grew. The strongest voice opposed to the subsidy act was Senator Black. He stated that,

> "Private ownership of merchant and aerial transportation with government subsidy has resulted in a saturnalia of waste, inefficiency, unearned and exorbitant salaries, and bonuses other so-called compensation, corrupting expense accounts, exploitation of the public by sale and manipulation of stocks….Measured by results, the subsidy system, as operated, has been a sad, miserable, and corrupting failure."

While Black and many others called for the outright repeal of the law, it was instead reformed and given new administration. The goal of the act, the promotion of a more effective U.S. flag fleet, was recognized as still being vital to the nation. Although, the means of its implementation were poorly carried out.

Merchant Marine Act of 1936

With the need for promoting a merchant fleet in mind, President Roosevelt unequivocally sent his support in a message to Congress (*fig.7)*. As a result, Congress made another attempt at passing an effective maritime policy. It again took on the form of disagreement and opposing viewpoints. The debate over the new legislation surrounded the issue of government versus private ownership and management. Questions remained as to what extent the government should intervene in private management to secure public objectives. This debate overshadowed the need for establishing sound policy objectives, like which characteristics the merchant marine should be formed to or how the new law might secure the maximum benefit for shippers and the need for defense. A year passed and debate dragged on until a compromise was reached in February 1936, allowing the bill to pass in both the House and the Senate. Though the final product seemed to satisfy neither side, while also being so thoroughly compromised in its means, that it failed to give clear intent on many key questions (Lawrence, 1968).

Despite these failings, the act was successful in becoming the cornerstone of U.S. maritime policy. It adopted the nationalist and protectionist-based solution to the national shipping problem similarly to the act of 1920. In section 101(f*ig.8)*, the act recognizes that, aside from issues of national defense, the entirety of the U.S. economy would benefit greatly from the maintenance of a healthy merchant marine (Morse, 1960). To that end, Congress accepted the premise that all the nation's domestic commerce and a "substantial portion" of its foreign commerce should and would be carried by American vessels as previously laid out in the Merchant Marine Act of 1920. Furthermore, as a means of sustaining the U.S. merchant marine through supporting industries, these vessels would continue to be constructed solely in American shipyards, crewed by American citizens and shipyard operators were required to use exclusively

U.S. manufactured materials (Lawrence, 1968). This focus on a national registry-based fleet backed by the protectionist legislation of the 1936 act also brought on substantial cost to U.S. shipowners. Recognizing the burden of the higher costs of U.S. labor and supplies, the primary purpose of the 1936 act was to issue subsidies to qualified U.S. companies engaged in foreign trade as a way to take economic pressure off shipping companies. The subsidies were provided for both the operating and construction cost of vessels (Lawrence, 1968). This was done by creating the Operational Differential Subsidy (ODS) program and the Construction Differential Subsidy (CDS) program, though the programs expired in the mid-1990s and were not continued (MARAD, 2011). Instead, the Maritime Security Program was enacted through the Maritime Security Act of 1997, discussed below, to replace the ODS program. It allowed for operational subsidies to be issued to vessels meeting the requirements of the Maritime Security Program.

The Maritime Security Act of 1996

On October 8, 1996, President Clinton signed the Maritime Security Act into law. This act helped to establish the U.S. Maritime Security Program (MSP). The Maritime Security Program ensures military access to a fleet of government and privately-owned U.S. flagged vessels during times of war or national emergency to support the efforts of the U.S. government and armed forces. The MSP also requires that the Secretary of Transportation encourage the establishment of a fleet of active, privately owned and military useful vessels able to meet national defense requirements while at the same time maintaining the American presence in international shipping. In this regard, the MSP reflects the goals of the Merchant Marine Acts which recognize in one form or another the necessity of a merchant marine capable of serving as a military auxiliary in times of national emergency.

The MSP provides a financial stipend to U.S. flagged vessels in exchange for their availability when called upon by the Secretary of Defense during times of extreme emergency. There is a set number of allowed participant vessels, currently 60, that rely on congressional funding to pay out what is essentially a retainer payment to selected U.S. flagged vessels. Because this is an application-based program and not a voluntary one, vessels selected cannot withdraw without prior Congressional approval. Though, if there ever is a vacancy or the number of allowable contracts increase, the Maritime Administration is responsible for managing the application of new vessels (MARAD, 2019). The Maritime Security Program ultimately incurred half of the annual cost of the original ODS program. The ODS program originally provided for $4 million per year per approved U.S. vessel, while the MSP program gives out $2.1 million per year per approved ship. While the reductions in retainer costs were recognized as a negative, the new program also removed certain regulations. According to the U.S. Maritime Administration, the new subsidy program provides carriers the necessary flexibility to operate in the competitive international market. The prior trade route and service restrictions under the ODS program were removed as well as regulations pertaining to new overseas service contracts (MARAD, 1996). Under MSP, shipping companies could now operate a limited number of line-haul[2] foreign flag vessels and an unlimited number of foreign flag feeder vessels[3]. Foreign flag feeder vessels would also be eligible to carry preference cargoes in conjunction with U.S. flagged line haul vessels, provided that both vessels were owned by the participating company. In addition, the

[2] A vessel which is on a regularly defined, semi-permanent, schedule between ports.

[3] Feeder vessels are smaller vessels that transport cargo to and from major hub ports and smaller ports that tend to have less vessel traffic. This allows larger merchant vessels to reduce the number of ports they must service and allows for a more distributed flow of cargo. Feeder vessels are a major reason larger shipping lines can service a large amount of destinations globally without requiring a large number of major ocean-going vessels or extending the routes of their in-service ocean-going vessels.

subsidy payments would be issued to companies as a lump sum, without any stipulations as to its use, except that it cannot be used for government lobbying. This allowed businesses to apply the money in whatever way they believed to be most beneficial. In exchange, participating shipowners are required to enroll in an Emergency Preparedness Agreement, which forces the owner to participate in the Voluntary Intermodal Sealift Agreement (VISA) program. Participants enrolled in VISA agree to make their vessels, non-vessel resources, terminals, shoreside facilities, intermodal systems and management services available to the Department of Defense in times of national emergency. The agreement mandates that shipping companies provide complete transportation services from the origin to the destination. To be eligible for application, companies must meet certain requirements related to intermodal capacity minimums, vessel sizes, and overall military utility (Daniels, 1999). A current list of vessels and companies enrolled in MSP can be seen in figure 11 below.

The Cargo Preference Acts of 1904 and 1954

Generally, cargo preference is a shipping strategy that is intended to help maintain a state's presence in the international shipping market. It does this by ensuring a certain percentage of various types of cargos that are supported by federal funding are reserved for vessels registered with the state. These kinds of cargoes are known as 'government-impelled cargoes' and are typically moved because of either a direct result of government involvement in the procurement and shipping of the cargo or indirectly through a government sponsorship of various federal programs. Many states running a national registry type fleet view cargo preference laws as necessary for the sustainment of a portion of their fleets. This is due to the widespread use of flags of convenience, as discussed previously. In using a flag of convenience, a vessel is owned and operated by one country and registered with another. This allows the vessel

owners to take advantage of favorable taxes, regulation practices and operating standards and costs all based off of the country the vessel is registered with. Without the presence of cargo preference laws, shipping companies would be able to import and export all cargoes using foreign-registered vessels, while undercutting the maritime economy of their host nation. With the operating costs being so high for U.S. registered vessels, these kinds of laws ensure that companies must use U.S. merchant vessels for a portion of the cargoes being imported and exported. In this way, U.S. cargo preference laws are designed to ensure that certain economic activities benefit the U.S. economy rather than the economy of a foreign state. Cargo preference laws also ensure that a minimum revenue will be available for privately owned and operated U.S. flagged vessels to ensure their continued operation (MARAD, 2019).

U.S. cargo preference laws today ensure that a large amount of cargoes are reserved for the U.S. flagged fleet. This includes:

- 100% of all military cargoes
- At least 50% of all civilian government agencies cargo's
- At least 50% of U.S. agricultural cargoes
- 100% of U.S. Export-Import Bank cargoes[4]

These cargoes are ensured through the Military Cargo Preference Act of 1904 and the Cargo Preference Act of 1954. The Military Cargo Preference Act dictates that all items procured for or

[4] The Export-Import Bank of the United States (EXIM) is the official export credit agency of the United States government. It provides a range of economic tools intended to help with the export of American goods and services. The mission of EXIM is to support American jobs by ensuring the export of U.S. goods and services to international buyers. As recently as 2017, EXIM authorized more than $3.4 billion in short term export credit as well as supporting the export of $7.4 billion in U.S. goods (EXIM, 2017).

owned by U.S. military and defense agencies are to be carried exclusively by U.S. flagged vessels. The Cargo Procurement Act of 1954 can be found in Section 901(b) of the Merchant Marine Act of 1936. This law requires that at least half of all "Cargoes procured, furnished, or financed by the United States Government" be transported by privately owned U.S. flagged commercial vessels. The 'at least' requirement meaning to the extent that vessels of sufficient capacity and type are available to carry these goods (MARAD, 2019).

Cost Differential and Government Subsidies

The U.S. Maritime Administration recognizes the presence of three major cost categories for vessels serving in merchant fleets. In order of precedence, these are operating costs, voyage costs, and capital costs. It is put in this order because in general, voyage costs, that of fuel and port charges, and capital costs are usually not affected by which flag state a vessel is registered with. With the exception of vessels serving exclusively to domestic U.S. shipping, which has no choice but to purchase from U.S. shipyards, thus further raising the cost difference in regard to capital costs. While many Domestic U.S. vessels do not typically serve foreign trade, today there are 100 ocean-going Jones Act vessels that would be capable of doing so (Buzby, 2018). However, putting aside these vessels, the most prohibitive cost for U.S. companies in foreign trade is operating costs (MARAD, 2011).

In general, operating costs refer to the costs related to the daily running of the vessel. This includes the crew, stores and lubes, maintenance and repair, insurance costs and general overhead costs. The differences between U.S. and foreign-flagged vessel operating costs will vary in each of these specific categories by vessel type, age, and route. Data collected by the U.S. Maritime Administration, submitted by carriers, shows the average operating costs between 2010 and 2011 was $20,914 per day. In comparison, the operating costs for foreign-flagged vessels

during those same years was placed at $7,432 per day (*Table 3).* This puts the average operating cost of U.S. vessels at 2.7 times higher than that of their foreign-flagged competitors, putting U.S. carriers in a position of serious disadvantage. Breaking the costs down further by vessel type, container ships and roll-on/roll-off (RO/RO) ships, which make up the overwhelming majority of U.S. vessels engaged in foreign trade, report operating costs between 2.2 and 3.3 times higher than other foreign-flagged vessels (MARAD, 2011).

While in some categories, U.S. flagged carriers have costs comparable to or even less than foreign-flagged vessels, these few categories generally are not affected by the registry flag and only represent a small fraction of the overall operating costs. While the most significant costs still retain a large disparity. Figure 9 below illustrates the cost comparison broken down by category for U.S. and foreign-flagged vessels.

Crew Costs

Crew costs heavily relate to the size of the crew, labor and employment policies enacted by the carrier and imposed by the flag state. Based on surveys returned to the Maritime Administration, carriers identified the two greatest sources of U.S. crew costs as the requirement to employ a citizen crew (based on the high cost of U.S. labor), and labor and manning laws imposed by U.S. maritime policies (MARAD, 2011).

While U.S. vessels are required by law to hire a majority U.S. citizen crew, foreign carriers are typically under no such restriction and gain the benefit of hiring inexpensive crews, so long as they meet the licensing requirements imposed by their flag state. This allows foreign-flagged vessel operators to exert greater control over setting their own crewing costs than U.S. shipowners have. In a survey performed by the Maritime Administration, 67% of shipping companies agreed that the requirement of a majority citizen crew strongly discouraged them

from registering under the U.S. flag. These same carriers noted that the high standard of living and associated social benefits of living in the U.S. contributed to U.S. flag wages being significantly higher than foreign-flag wages. Other contributing factors for the difference in wages is the high cost of mariner education and training as well as associated union fees (MARAD, 2011).

Carriers also noted that work rules and manning requirements in the U.S strongly affect productivity and overall crewing flexibility. Specifically mentioned were the restrictions on the number of hours a mariner can work and the type of work allowed to be performed. The combination of the above requirements resulted in an increase anywhere from $12,000 to $15,000 per ship per day above foreign competitors. Figure 12 breaks down average crewing cost by type of vessel compared to its foreign-flag competitors. U.S. flagged containerships and RO/RO ships averaged 5.5 and 5.2 times above their foreign-flagged competitors, respectively. While the difference in crewing costs for bulk carriers averaged around 5.7 times as much. Of note, the largest budget difference between foreign-flagged and U.S. flagged container vessels was the crewing costs. Crewing costs represent around 70% of U.S. container carrier operating costs while accounting for only 28% of foreign-flagged operating costs. Many factors identified above by U.S. carriers are reflective of the state of the U.S. economy. Though interestingly, despite these large costs, carriers outright oppose changes in the Citizen Crew Requirements. While it would reduce costs, it would result in an international type registry[5], like those found in

[5] International Registries, also referred to as secondary registries, are created by countries that want to maintain a national flagged fleet for certain important strategic reasons, while also offering fiscal and labor benefits like open registry fleets. This would allow a nation to maintain a nationally flagged fleet for their use while also providing some of the lower costs associated with open registry fleets.

Denmark, Norway, and Germany (MARAD, 2011). The reason behind such opposition was not made clear in the report.

Maintenance and Repair Costs

Maintenance and repair costs (M&R) generally include drydocking, special surveys and the routine repairs required to maintain a vessel to standards set forth by the company and the classification society. It should be noted that all elements associated with maintenance and repair costs increase significantly as a vessel ages, already putting the general U.S. fleet (average age 31 years) at a disadvantage when compared to foreign-flagged fleets (average age 11 years) (Mouawad, 2015). Also of note is the 50% ad valorem duty imposed on U.S. flagged vessels by the Tariff Act of 1930 for all non-emergency repairs of a U.S. vessel conducted in foreign shipyards (United States Code, 2007).

Carriers participating in a Maritime Administration study rated the maintenance, repair and shipyard costs as the second-largest in U.S. flag operating costs. With a total of 89% of carriers noting the ad valorem duty as a significant impediment to flagging with the U.S. In fact, every single participating carrier noted that even considering the cost of the duty charged for overseas shipyard work, it was still cheaper to send vessels to overseas shipyards rather than to U.S. shipyards. In 2010, M&R costs accounted for around 15% of the total U.S. flagged operating costs while M&R costs for foreign vessels accounted for 32% of their total operating costs. Though, because of the significantly higher U.S. crewing costs, this percentage is somewhat misleading. This only compares relative portions of budgets, while in fact, U.S. M&R costs averaged 1.3 times higher than foreign costs (MARAD, 2011)(*fig 13)*.

Insurance Costs

Insurance costs for shipping companies are normally split into two groups. Hull and Machinery insurance (H&M) and Protection and Indemnity insurance (P&I). H&M protects owners from physical loss or damage to the vessel itself while P&I insurance protects against numerous liabilities such as injury or death of crew members and passengers, pilferage or other damage to cargoes, and damage due to collision or pollution. Depending on the route and state of political affairs, war risk insurance and kidnapping and ransom coverage have been on the rise.

Typical insurance costs for U.S. flagged vessels average 1.5 times higher than that of foreign competitors in a 2010 report issued by the Maritime Administration. Though insurance costs for ship types seem to vary even more as seen in figure 14 below. In the opinion of a poll of U.S. carriers, high carrier insurance premiums compared to their foreign competitors are due to substantially increased liability costs associated with mariner personal injury. As with crew costs and maintenance and repair above, this increase in cost is due to the nature of the U.S. economy and the standard of living for the country (MARAD, 2011).

Mismanaged Policies and A fleet on the Brink

When considering the development of the whole of U.S. maritime policy, the chief argument present is not the question of the necessity of a fleet, but rather the method most appropriate to its establishment. The focus of developing U.S. maritime policy is a history of political controversy. First came the issue of maritime tariffs, then attempts at establishing economic regulation, debates surrounding direct public assistance to private companies, government versus private ownership of fleets, and management versus labor. It ended up requiring the pressure of multiple world wars and economic strife to bring together a semblance of maritime legislation. Though still, ideological differences remained evident in its creation.

Even the Merchant Marine Act of 1936, a cornerstone of U.S. domestic maritime policy, combined the arguments of private versus public ownership, but failed to settle them. It instead treated the maritime industry as an "instrument of public policy", one that was neither completely public nor private (Lawrence, 1968). The maritime industry maintains a special relationship with the government, one so different from any other industry that it needed to be defined with specific legislation and supported with special subsidies. This is because the interests in maintaining a fleet are so significant to the welfare of the public, that the government was forced to commit itself to the success of a U.S. fleet regardless of any other position it might have desired to take.

Today, the maintenance of the U.S. fleet relies completely on the continuation of major subsidy and protectionist policies that stem from the legislation mentioned above. Of specific significance is cargo preference laws and the Maritime Security Program. Based on a report by the Maritime Administration, the U.S. fleet averages a total cost 2.7 times higher than foreign-flagged vessels (*fig.15)*. As depicted in figure 15, U.S. vessels spend on average $12,600 per day more than their foreign-flag competitors, while only covering roughly a third of their total costs by commercial cargo operations. To cover the remainder of their costs, U.S. shippers heavily rely on cargo preference and the MSP. For those 60 vessels enrolled in the MSP, retainer payments, which amounts to $8,500 per day, cover anywhere from half to two-thirds of the operating cost differential with foreign-flagged vessels. On average, the unfunded gap for vessels remains at roughly $4,100 each day. This is where preference cargoes come in. Carriers rely on these government cargoes that are set to significantly higher rates than normal commercial cargoes to cover the remainder of the gap. Though more recently, commercial carriers have voiced concerns over the future tonnage levels of preference cargoes. In addition, carriers have also raised

concerns over the continued effectiveness of the MSP, as "scheduled adjustments to the retainer payments do not reflect fluctuations in the operating costs for U.S.-flag vessels" (MARAD, 2011). Carriers have suggested alterations of the program, as well as the possibility of creating economic incentives for U.S. firms to contract cargoes with U.S. flagged vessels instead of foreign-flagged vessels, as currently there are no such incentives in place.

Significance of a Strong Merchant Fleet

> "*It is necessary for the national defense and for the proper growth of its foreign and domestic commerce that the United States shall have a merchant marine…"*
> - Title 46 of the U.S. Code. Sec. 1. Purpose and Policy of United States

The significance of a merchant fleet for any single state can best be shown through its effect on the globe. International shipping today is made up of a sophisticated network of scheduled routes over which goods are transported from and to anywhere in the world. It is the most cost-effective mode of transportation and can carry tens of thousands of containers, vehicles or other goods along routes that would otherwise take hundreds of aircraft, miles of rail cars and thousands of trucks to accomplish. Merchant fleets link countries, businesses, and people in a way that allows them to buy or sell goods on an unrivaled scale all while fostering a sense of globalization. Today, the international merchant fleet is responsible for the transport of goods that represent about two-thirds of the total value of global trade, totaling more than $4 trillion in goods annually. Also, as a significant industry itself, it is responsible for maintaining 13.5 million direct and indirect jobs as well as contributing $183 billion to the world's gross domestic product alone (World Shipping Council, 2009). By maintaining a significant portion of the world's trade, it is deeply connected to a global structure that supports the world economy, contributing heavily to international security and stability. Furthermore, if global security and stability ever fall to a point that prompts the intervention of states, it aids them in effectively

ensuring both their own national security and ability to spread their influence through wars abroad.

Economic Power

The U.S. maritime industry of today employs over 260,000 Americans and provides nearly $29 billion in wages each year. There are more than 40,000 U.S. flagged vessels, the vast majority of which are engaged in domestic trade only, transporting 100 million passengers and $400 billion in cargo between ports annually. Combined with the value of the industry itself, the U.S. maritime industry provides nearly $100 billion in total economic output annually (House Subcommittee on Coast Guard and Maritime Transportation, 2014). More significantly, these numbers are representative of the U.S.' less than 1% share of the international fleet and a 0.6% share of the world's deadweight tonnage (United Nations Conference on Trade and Development, 2019). Even with such a small share, the economic support and contributions made by the U.S. maritime industry are significant. Though with the fleet continuing on a slow decline, these contributions will only continue to drop. With the realization of the contributions made by today's fleet in mind, the potential benefits provided by even a small amount of growth, rather than a continued decline, are huge. A strong example of a major maritime power benefiting from the expansion of national shipping is Japan. With the 11th largest flagged fleet by total deadweight tonnage, Japan accounts for 1.85% of global deadweight tonnage and 5.6% of the international fleet. While maintaining a larger fleet by both number and carrying capacity, Japan has also recently been maintaining a steady 6.6% growth rate since 2016 (United Nations Conference on Trade and Development, 2019). This greater share of the market allows Japan to transport $1.08 trillion in goods annually, a value that makes up about 96% of the total value of goods moved (Habara, 2011). It is expected that this steady growth rate will increase as Japanese

shipping companies plan on more than doubling the numbers of vessels in their nationally registered fleets, stipulating that 90% of these vessels will come from domestic builders. This would have the effect of significantly growing the value of trade goods moved by their maritime industry as well as providing more jobs and a stronger overall economy for the nation. The major developments and national focus on the Japanese maritime industry are largely responsible for Japan becoming a major industrial power today (Maine International Trade Center, 2015).

The economic benefits of a strong merchant marine extend past the monetary value of the industry and the national economy. By increasing the value of the economy generated from the U.S. merchant marines, the U.S. gains further economic power over other foreign states. This, in turn, has the potential to further U.S. interests overseas. This economic power would be split between hard and soft power. In this case, economic hard power involves the use of overall economic power to influence or control another state's behavior. So, the state with a strong economic capacity would be able to extend their control over states with a weaker capacity. This power is typically exerted using incentives or threats. For example, a reduction in trade barriers to incentivize economic cooperation or imposing economic sanctions or trade restrictions might be one mean. Thus, the underlying theme of economic hard power is coercion. Though, what might be considered more important in today's political landscape is the growth of a country's soft power. Economic soft power is built off of more subtle and persuasive means. States utilize soft power in an attempt to attract other states into desiring the same thing that they themselves want (Nye, 2004). This might be done by expanding a state's involvement in the market of another state, such as increasing trade volume or simply through a larger cultural presence in a foreign state. This results in essentially a greater visible presence among the target state's population and could be used to influence a state as a whole. In terms of merchant shipping, this

might be done through an increased presence of a national fleet in another state. The very nature of large, oceangoing vessels necessitates that they travel to major trade hubs. Because of the amount of commercial business conducted around the area, a large local population is expected. This means that any vessel moving through such an area would have greater visibility in the eyes of the public. Potentially shaping their perspective of the strength of the systems and culture that govern that state.

National Security and the Ability to Wage Wars Abroad

Beyond the well-defined economic contributions, the U.S. merchant marine also plays a vital role in national security. The U.S. international fleet along with government-funded fleets, such as MARAD's National Defense Ready Reserve Fleet (RRF) and Maritime Sealift Command's Fast Sealift Ships (FSS), are crucial in reducing the Department of Defense's reliance on foreign vessels and crews in supplying U.S. forces in times of crisis. Currently, the U.S. Transportation Command relies on maritime networks to move over 90% of its cargo. In addition to the two components mentioned above, various fleets participate in this network. These include the Large Medium-Speed Roll-on/Roll-off Ships (LMSR), U.S. flagged vessels in the MSP, and other chartered U.S. and foreign-flagged vessels (Center for Strategic and Budgetary Assessments, 2017).

In today's modern political climate, the likelihood of any large-scale general conventional war by multiple major powers is very slim. This is because, the majority of the nations capable of engaging the U.S. in a large scale general war are also nuclear powers, or capable of being nuclear powers. It would seem that the pressure on the side that finds itself loosing such a conflict would be forced to escalate into a nuclear war. It would take a series of unlikely circumstances to allow a conflict between such adversaries to remain at the non-nuclear level for

long enough to permit mobilizing a large conventional force. Even if such a war were to occur, it would likely involve major alliances, allowing the U.S. to take advantage of allied merchant fleets until a time as a retooling of its own economy was accomplished. With the possibility of such a war very unlikely, this leaves only a brushfire war or a war of a limited nature as legitimate areas of concern for transporting military forces in the modern-day. Therefore, the availability of sealift forces should match such concerns. Some examples of a brushfire sized conflict include small scale interventions such as the U.S. intervention in the Congo in 1964 and with the Dominican Republic in 1965. Because of their small scale, such interventionist actions were accomplished with forces on hand, without requiring the redeployment of other forces or from the strategic reserve. These kinds of actions have generally been adequately supported through the use of military auxiliary vessels and U.S. flagged vessels already serving the affected areas. Though not always. During the 1958 Lebanon crisis, The U.S. government commandeered two U.S. flagged merchantmen in the Mediterranean to support the military. These two vessels were still not enough to adequately support military operations, but there were no other satisfactory U.S. flagged vessels in the region. This forced the government to charter additional foreign-flagged vessels. Ultimately leading many to point out that, while the U.S. merchant fleet is of adequate size to support such small intervention operations, its disposition has not always been able to allow it to take part in such a support role (McCleave, 1969).

While small scale intervention operations have occasionally put pressure on military auxiliaries and U.S. merchantmen, it is the ability to support a limited war, such as in Korea, Vietnam, and the Gulf War that the U.S. faces the greatest difficulty in regards to overall shipping capacity. In this kind of war, a large force would have to be transported over a significant distance and be able to be sustained over an extended period of time. Ultimately, the

usual constraints of this type of war require the U.S. to “Go it alone with what is on hand while maintaining a business as usual posture in its civilian economy” (McCleave, 1969, p.7). Early on, the Korean and Vietnam conflicts displayed some serious deficiencies in the U.S. merchant marine capability. More significant of the two was the Vietnam conflict. This conflict required the deployment of a large force for an extended period all with the absence of any maritime allies and using a fleet of substantial age to provide the sealift capacity. These two conflicts taught the Department of Defense four major lessons in terms of their merchant sealift requirements. The first was that these kinds of conflicts often required the delivery of field-ready units and their equipment to areas lacking in modern port facilities that some civilian merchantmen were accustomed to. The second was that the probable locations for these limited wars are underdeveloped nations where normal shipping density may be lacking. Third, the likely peak in shipping demands would be early on in the conflict as fast expeditionary forces are deployed. Most likely settling out into a sustainment operation afterward. Fourth, the overall general needs of the U.S. military in terms of sealift capacity are steadily increasing. Such increasing needs would best be met by increasing the overall capacity of the U.S. fleet, but one comprised of numerous midsized vessels able to operate without sophisticated infrastructure or support (McCleave, 1969). This would allow the overall capacity of the military to be met while maintaining a large amount of flexibility by preserving numerous medium-sized vessels as opposed to large commercial vessels that take advantage of the principle of economies of scale.

More recently in 2016, there were only 100 U.S. flagged oceangoing vessels over 1,000 gross tons sailing (U.S Department of Transportation, 2016). While the overall capacity of such ships may seem impressive, such a fleet was unable to support the military in its entirety during the prior Persian Gulf conflict. The Military Sealift Command was forced to ship approximately

a fifth of military cargoes on foreign chartered vessels (Hill, 2013). More specifically, during Operation Desert Storm the U.S. relied largely on chartered foreign vessels. During these sealift operations, the crews of 13 foreign-flagged vessels outright refused to go into an active war zone in order to deliver military cargo. At the same time, none of the U.S. flagged vessels refused. This highlights the importance of military cargo being moved exclusively by U.S. flagged vessels. For example, in the event of a conventional war with another major power, particularly both a major economic and military power like China, a significant portion of foreign-flagged vessels could potentially refuse to carry U.S. military cargoes. Placing U.S. military operations overseas in potential danger of dwindling supply lines (Center for Strategic and Budgetary Assessments, 2017).

Back to the general sealift operations related to the Persian Gulf conflict, the entirety of the military cargo moved by U.S. and foreign-flagged vessels were used to maintain just 700,000 deployed U.S service members. As a comparison, during the peak of the U.S. merchant fleet's numbers in World War II, a total of 16 million U.S service members were able to be maintained through the efforts of the U.S merchant marines alone (Military Sealift Command, n.d.). This demonstrates that since the peak of the U.S. flagged fleet, the abilities of each individual vessel may have increased, but the total ability and military usefulness of the fleet has declined. This inability of a portion of an already small fleet to be useful militarily only further diminishes the ability of U.S. vessels to adequately support the Department of Defense in operations during times of national emergency and crisis. The Department of Defense often will lease out foreign-flagged vessels for its operations that require more sealift ability. While U.S government policy is to reserve a sizeable portion of goods for exclusive transport by U.S. flagged vessels, specifically 100% of all military cargoes, there are cases when there are simply not enough

vessels of the correct type to facilitate the transport of these military cargoes. This forces the Department of Defense to contract their cargoes out to foreign-flagged vessels and go against the intentions of cargo preference laws. Their statement concerning this break in cargo preference law requirements reads as follows:

> "Unfortunately, very few commercial ships with high military utility have been constructed in U.S. shipyards in the past 20 years. Consequently, when MSC has a requirement to charter a vessel, nearly all of the offers are for foreign-built ships. In cases where the need is immediate or subject to change, due to the operational environment or other factors, a commercial charter is the only practical way to obtain the capability"

Many proponents of protectionist U.S. maritime policies like the Merchant Marine Acts and the Jones Act continue to argue in favor of policies that have only been proven to hamper the U.S. fleet. These proponents point out that the two top vessel producing countries, South Korea and China who produce the majority of the world commercial vessels, are too unstable in terms of geopolitics to be relied on in a significant way like supplying the U.S. with commercial vessels. Thus, protectionist policies that restrict the production and maintenance of a portion of the U.S. flagged fleet are necessary to promote an entirely U.S. based maritime industry and ensure its reliability. While this argument may be valid in the long run, the immediate concern in terms of national security should be the ability to supply U.S servicemen and women abroad (Hill, 2013). So, since historically the U.S. fleet has been unable to meet the call of the military during some small interventions and many limited wars, the U.S fleet cannot be relied on to provide this needed support. This leaves the Department of Defense with no choice but to outsource, potentially compromising supply lines in current and future operations, especially if they were to escalate into a larger general war.

Policy Recommendations

As demonstrated above, the need for an effective national merchant fleet that is both militarily useful and privately owned is important to the health of a state's economy and the strength of its national defense. With its small presence in the global economy and it's not always effective contributions to national defense, the U.S. flagged fleet requires changes to national policy to help promote growth and overall effectiveness. The first point, and one that was stressed by shipping companies in particular, is the continuing need for government subsidies and cargo preference laws. Considering the large difference in operating costs, the subsidies afforded to shippers by programs like the U.S. Maritime Security Program are vital for the continuation of the current U.S fleet. The large financial contribution of U.S. government retainer payments, as well as above-average contract rates from government cargoes, are responsible for more than half of the operating costs of many U.S. vessels. These and other similar government programs must be maintained and even expanded if the U.S. fleet is expected to develop. In addition to these policies already funded and in place, MARAD should continue to develop government coalitions to ensure further funding aimed at supporting the U.S. merchant fleet financially.

As a final means of financial support, the vessel construction subsidy program should be considered for reinstatement. This program, canceled in 1981, was a direct subsidy program provided by MARAD that covered up to half of the additional cost to build ships in a U.S. shipyard instead of a foreign one. Just prior to the cancellation of the program, subsidized U.S. shipyards were responsible for constructing 77 commercial ships annually. All of which were of 1,000 gross tons or above and pledged by the company to take part in international trade under a U.S. flag. Though following its cancellation, this number dropped to just 11 new vessels. All

while foreign states continued to subsidize shipyard programs, particularly South Korea, Japan, and China. When foreign shipyards gained the advantage of government subsidization and the U.S. shipyards had no similar advantage, it was impossible for American shipyards to seriously compete. Reestablishing the same or a similar program, as many states still maintain today, would help reduce the capital costs of purchasing new U.S. constructed vessels. This would aid U.S. shipyards with competing against major ship construction states such as South Korea and China and could ultimately lead to a rise in orders, allowing for the growth of a U.S. flagged international fleet.

While a combination of cargo preference laws, MSP expansion, and shipyard subsidies appear to be enough to begin rebuilding the American merchant marines, other possible avenues exist if any of the above prove to be overly difficult in the current political landscape. It is true that a large portion of the initial cost can be reduced through subsidized shipyards, it would also be possible to mitigate the existing cost of U.S. vessels and operations by otherwise rewarding companies that flay under the U.S. With the prevalence of flags of convenience, ships can fly the flag of a state that is in no way related to its owner, cargo, crew, route or other factors. This allows shipping companies to reduce the financial impact of crew cost, taxes and other fees, all of which make up a sizeable portion of operating costs. Creating tax incentives for companies flagging with the U.S. has the potential to motivate shipping companies to reflag prior U.S. vessels or begin the process of expanding their current fleet with new orders.

Proposed changes to legislation have all been made in the past. In particular are proposed changes to the Jones Act and the U.S.' protectionist policies, many of which are argued over year after year with no resulting effect. It is arguable that reducing, maintaining or expanding certain laws under the Jones Act, particularly the requirement that U.S. vessels be built manned and

flagged in the U.S., all could be beneficial to the national security and economy in different supposed ways. Though by this point, this protectionist legislation is so deeply rooted in the foundation of the U.S. merchant marines that there is little chance of any significant change occurring, regardless of in which direction. While not necessarily permanent solutions for the myriad of problems plaguing the industry today, the solutions discussed in the prior paragraphs avoid the political capital required to change these laws that built today's modern merchant marine. The proposed changes would ultimately allow the U.S. fleet to grow by establishing economic incentives for shipping companies of today. In turn, this would allow the U.S. to gain what essentially comes down to an increase in its political power as a country. Allowing it to both expand its abilities to effectively fight wars abroad without the aid of foreign states and grow its economic power provides a greater sense of national security.

Through a history of controversial and poorly governed policies over the past several decades, the U.S. has allowed its maritime industry to greatly diminish. Ultimately, when the question about what happened to the U.S. merchant marine is asked, the answer is that it was essentially turned over to the rest of the world. Without some kind of meaningful change, the U.S. fleet will at best retain its current position in the international maritime community, while at worst it will be left to continue to slowly erode.

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Figures

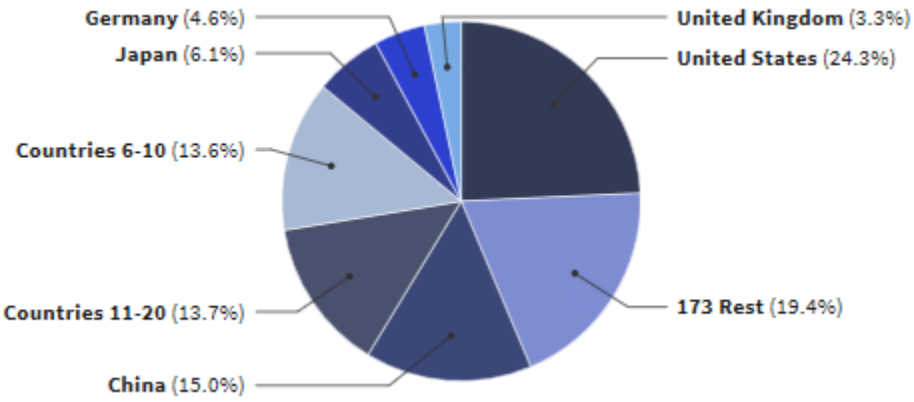


Figure 1. Percent share of the global economy based on data from the International Monetary Fund for 2019 (Silver, 2019).

Figure 2. A 1918 U.S. Shipping Board poster advertising some of the number of new vessels launched during World War I.

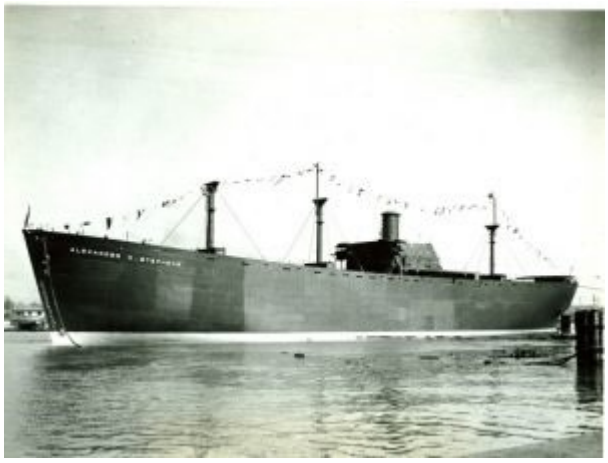
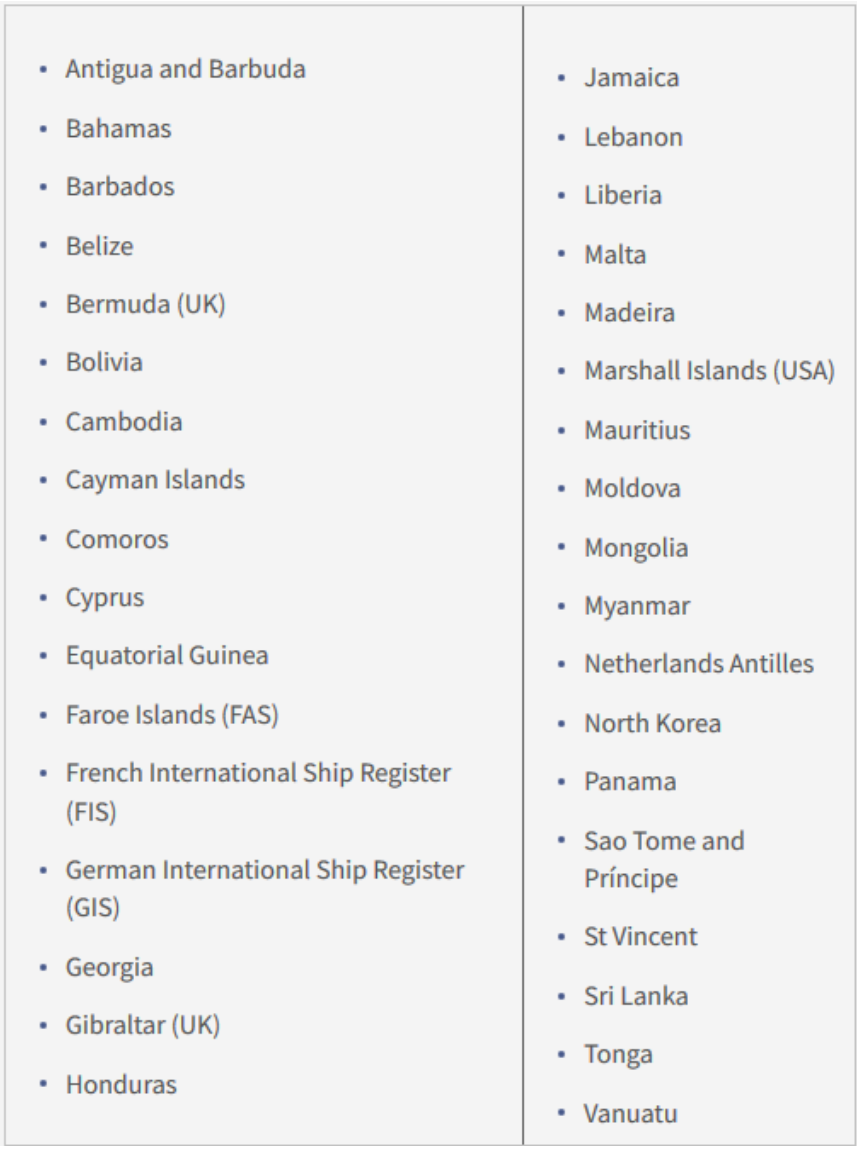


Figure 3. The liberty ship SS Alexander H. Stephens right after being launched in July 1942.



- Antigua and Barbuda
- Bahamas
- Barbados
- Belize
- Bermuda (UK)
- Bolivia
- Cambodia
- Cayman Islands
- Comoros
- Cyprus
- Equatorial Guinea
- Faroe Islands (FAS)
- French International Ship Register (FIS)
- German International Ship Register (GIS)
- Georgia
- Gibraltar (UK)
- Honduras
- Jamaica
- Lebanon
- Liberia
- Malta
- Madeira
- Marshall Islands (USA)
- Mauritius
- Moldova
- Mongolia
- Myanmar
- Netherlands Antilles
- North Korea
- Panama
- Sao Tome and Príncipe
- St Vincent
- Sri Lanka
- Tonga
- Vanuatu

Figure 4. Countries designated as flag of convenience states by the International Transport Workers Federation's Fair Practice Committee.

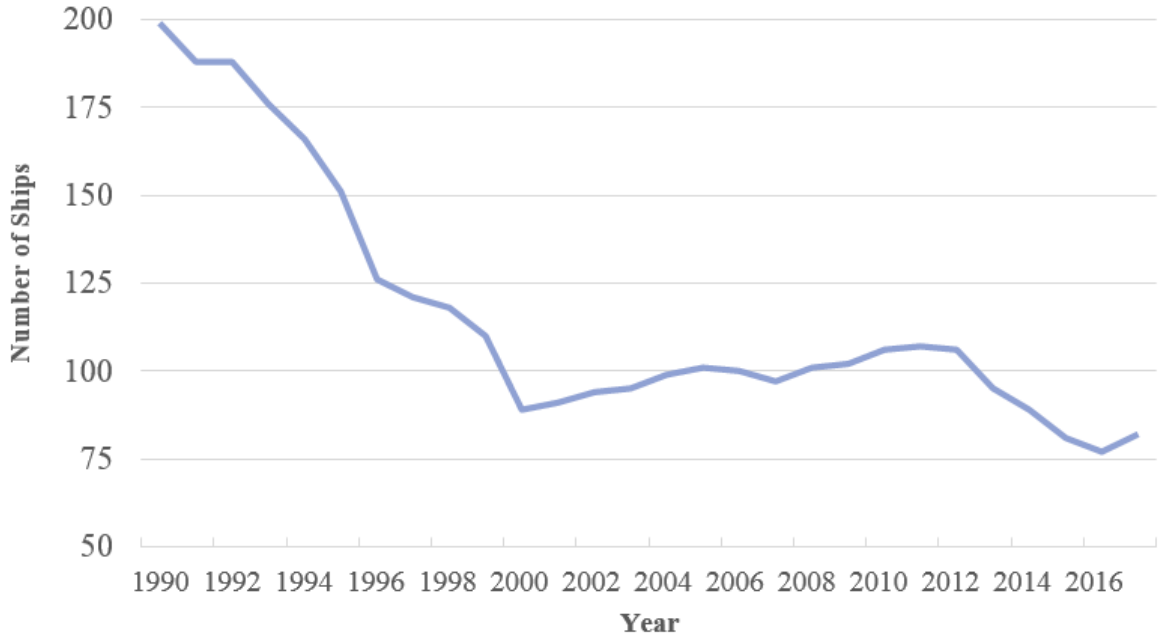


Figure 5. Number of U.S. flagged, ocean-going carriers of 1,000 gross tons or above between 1990 and 2016 (Buzby, 2018).

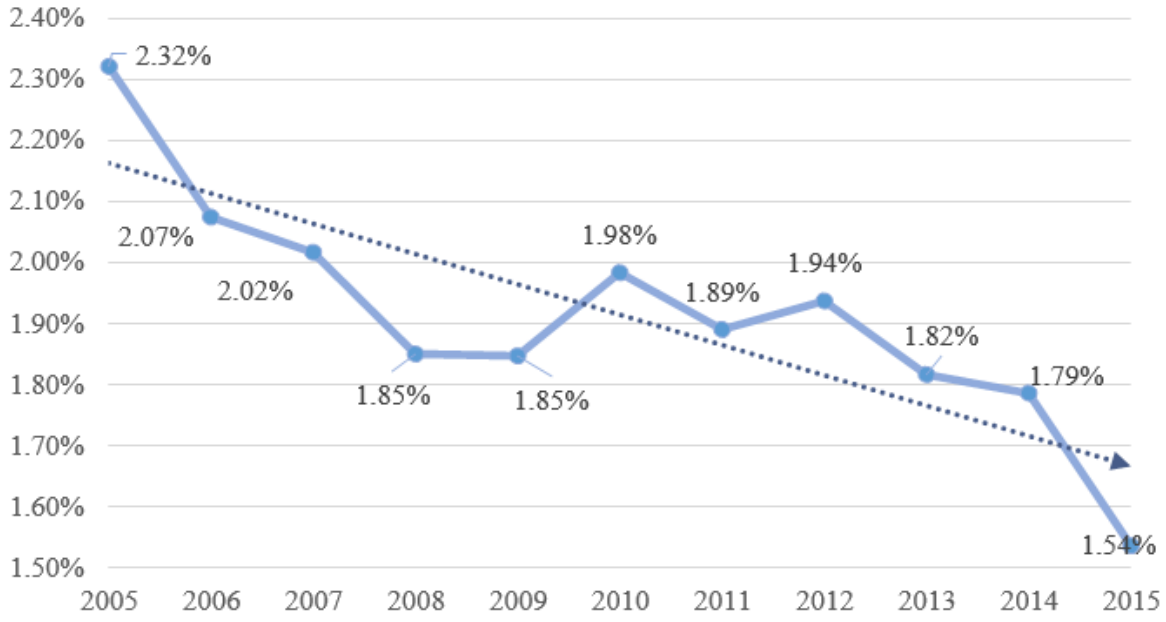


Figure 6. The U.S. flagged share of foreign trade between 2005 and 2015. The ‘shares’ are based on cargo weight rather than the number of operating vessels. (Buzby, 2018)

> “I present to the Congress the question of whether or not the United States should have an adequate merchant marine. To me there are three reasons for answering this question in the affirmative. The first is that in time of peace subsidies granted by other nations, shipping combines, and other restrictive, or rebating methods may well be used to the detriment of American shippers. The maintenance of fair competition alone calls for American flagships of sufficient tonnage to carry a reasonable portion of our foreign commerce.
>
> Second, in the event of a major war in which the United States is not involved, our commerce, in the absence of an adequate American merchant marine, might find itself seriously crippled because of its inability to secure bottoms for neutral peaceful foreign trade.
>
> Third, in the event of a war in which the United States itself might be engaged, American flagships are obviously needed not only for naval auxiliaries, but also for the maintenance of reasonable and necessary commercial intercourse with other nations. We should remember lessons learned in the last war.
>
> In many instances in our history the Congress has provided for various kinds of disguised subsidies to American shipping. In recent years the Congress has provided this aid in the form of lending money at low rates of interest to American shipping companies for the purpose of building new ships for foreign trade. It has, in addition, appropriated large annual sums under the guise of payments for ocean-mail contracts.

This lending of money for shipbuilding has in practice been a failure. Few ships have been built and many difficulties have arisen over the repayment of the loans. Similar difficulties have attended the granting of ocean-mail contracts. The Government today is paying annually about $30,000,000 for the carrying of mils which would cost, under normal ocean rates, only $3,000,000. The difference, $27,060,000, is a subsidy, and nothing but a subsidy. But given under this disguised form it is an. unsatisfactory and not an honest way of providing the aid the Government ought to give to shipping.

I propose that we end this subterfuge. If the Congress decides that it will maintain a reasonably adequate American merchant marine, I believe that it can well afford honestly to call a subsidy by its right name.

Approached in this way a subsidy amounts to a comparatively simple thing. It must be based upon providing for American Shipping government aid to make up the differential between American and foreign shipping costs. It should cover first the difference in the cost of building ships; second, the difference in the cost of operating ships; and finally, it should take into consideration the liberal subsidies that many foreign governments provide for their shipping. Only by meeting this threefold differential can we expect to maintain a reasonable place in ocean commerce for ships flying the American flag, and at the same time maintain American standards...

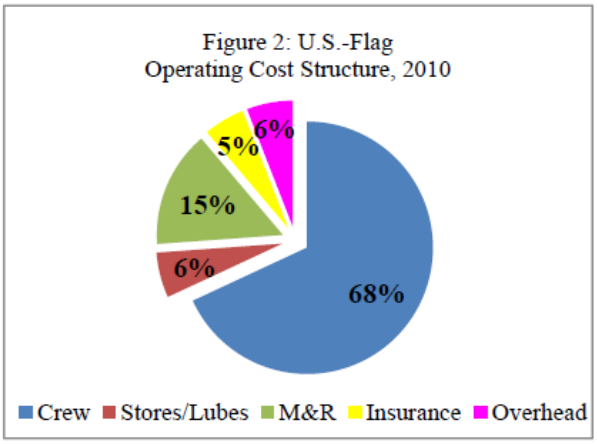
An American merchant marine is one of our most firmly established traditions. It was, during the first half of our national existence, a great and growing asset. Since then it has declined in value and importance. The time has come to square this traditional ideal with effective performance.

> Free competition among the nations in the building of modern shipping facilities is a manifestation of wholly desirable and wholesome national ambition. In such free competition the American people want us to be properly represented. The American people want to use American ships. Their Government owes it to them to make certain that such ships are in keeping with our national pride and national needs."

Figure 7. On March 4th, 1935, President Roosevelt sent Congress a message promoting his belief that a strong Merchant Marine was an imperative for the U.S.

> "It is necessary for the national defense and for the proper growth of its foreign and domestic commerce that the United States shall have a merchant marine of the best equipped and most suitable types of vessels sufficient to carry the greater portion of its commerce and serve as a naval or military auxiliary in time of war or national emergency, ultimately to be owned and operated privately by citizens of the United States; and it is declared to be the policy of the United States to do whatever may be necessary to develop and encourage the maintenance of such a merchant marine, and, insofar as may not be inconsistent with the express provisions of this Act, the Secretary of Transportation shall, in the disposition of vessels and shipping property as hereinafter provided, in the making of rules and regulations, and in the administration of the shipping laws keep always in view this purpose and object as the primary end to be attained."

Figure 8. Title 46 "Shipping", USC App 861: Purpose and Policy of United States. Retrieved from Office of the Law Revision Counsel, U.S. House of Representatives, United States Code.



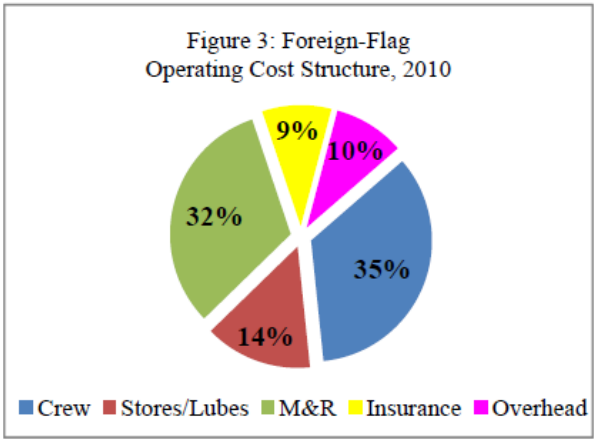
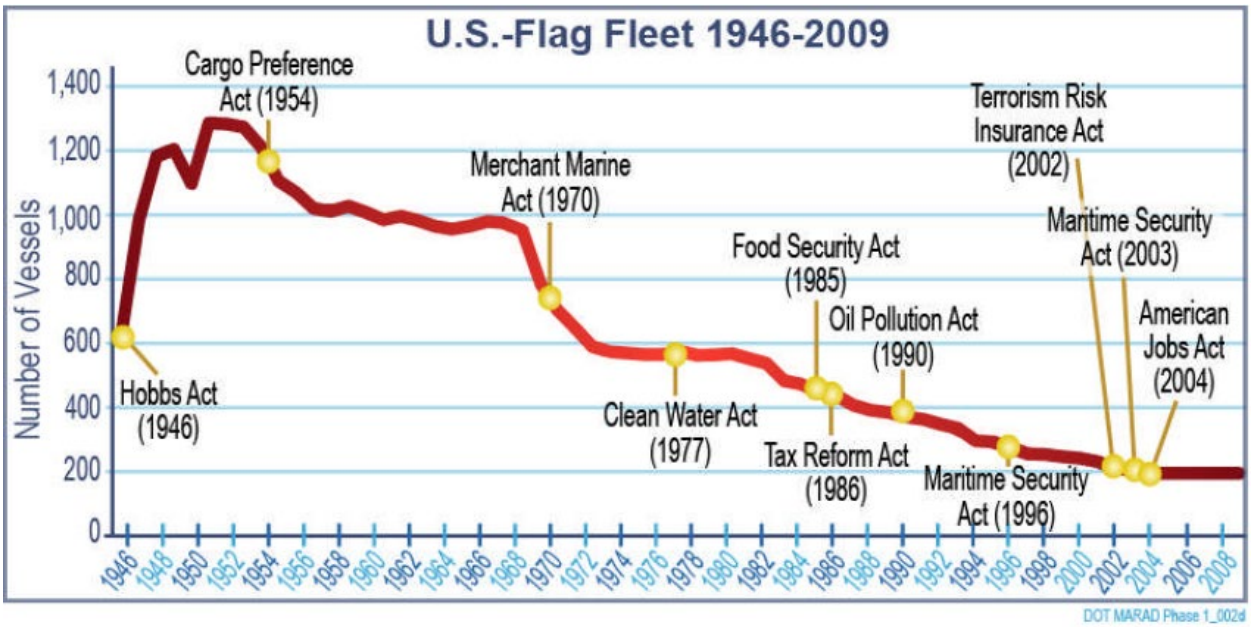


Figure 9. Overall cost comparison broken down by category for U.S. flagged and foreign-flagged vessels (MARAD, 2011)



- Shipping Act of 1916
- Merchant Marine Act of 1920
- Tariff Act of 1930 (Smoot-Hawley Act)
- Hobbs Act of 1946
- Agricultural Trade Development and Assistance Act of 1954 (Food for Peace Act)
- Merchant Marine Act of 1970
- Clean Water Act (CWA) of 1977
- Shipping Act of 1984
- The Food Security Act of 1985
- Tax Reform Act of 1986
- Oil Pollution Act of 1990
- Ocean Shipping Reform Act of 1998
- Terrorism Risk Insurance Act (TRIA) of 2002
- Maritime Security Act of 2003
- American Jobs Act of 2004

Figure 10. U.S. Flagged Oceangoing vessels measuring at 1,000 gross tons or more between 1946 and 2009 with legislation governing the U.S. fleet highlighted.

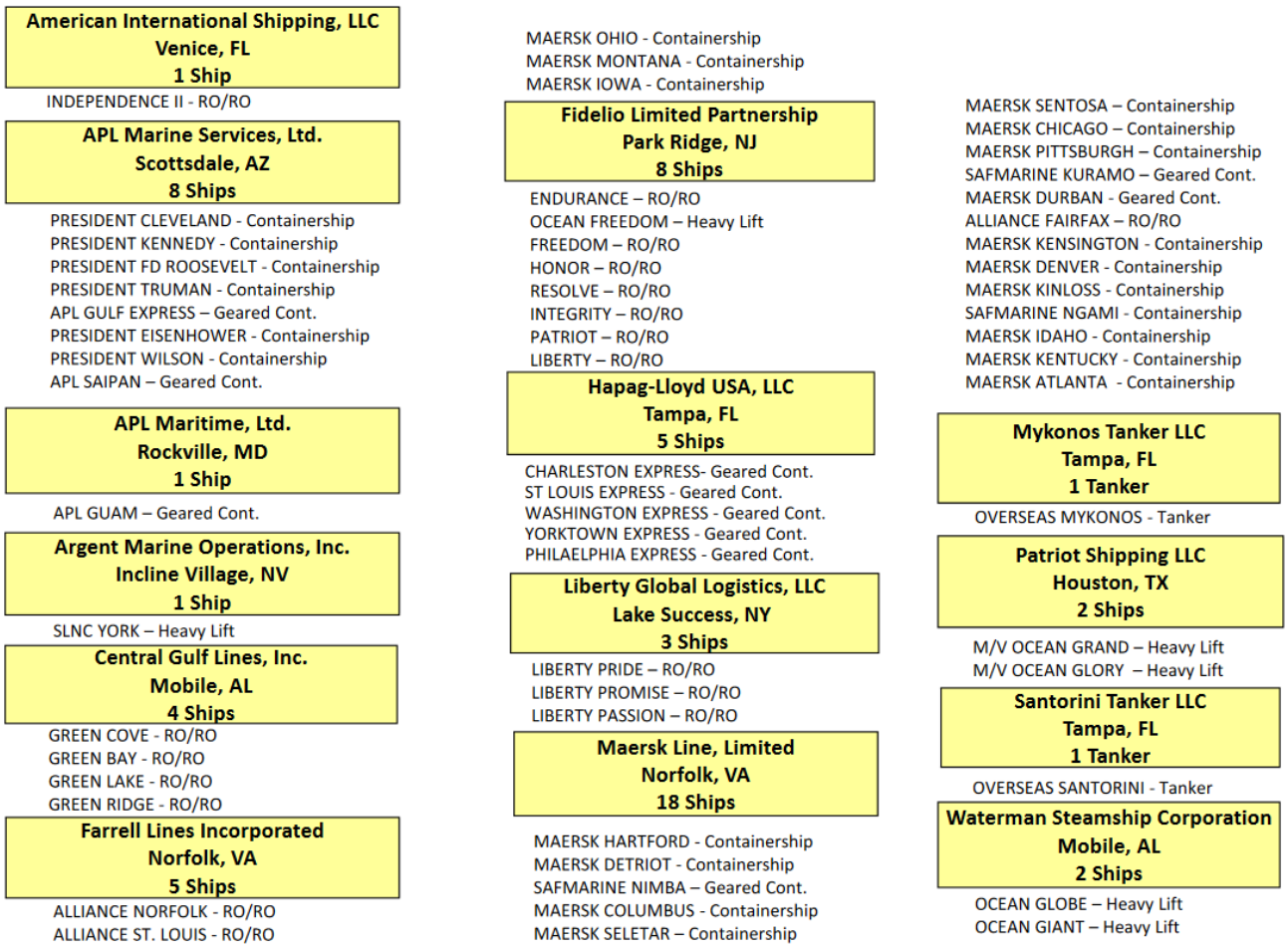


Figure 11. Current participants in the Maritime Security Program Fleet as of March 2019. (U.S. Department of Transportation, Maritime Administration, 2019)

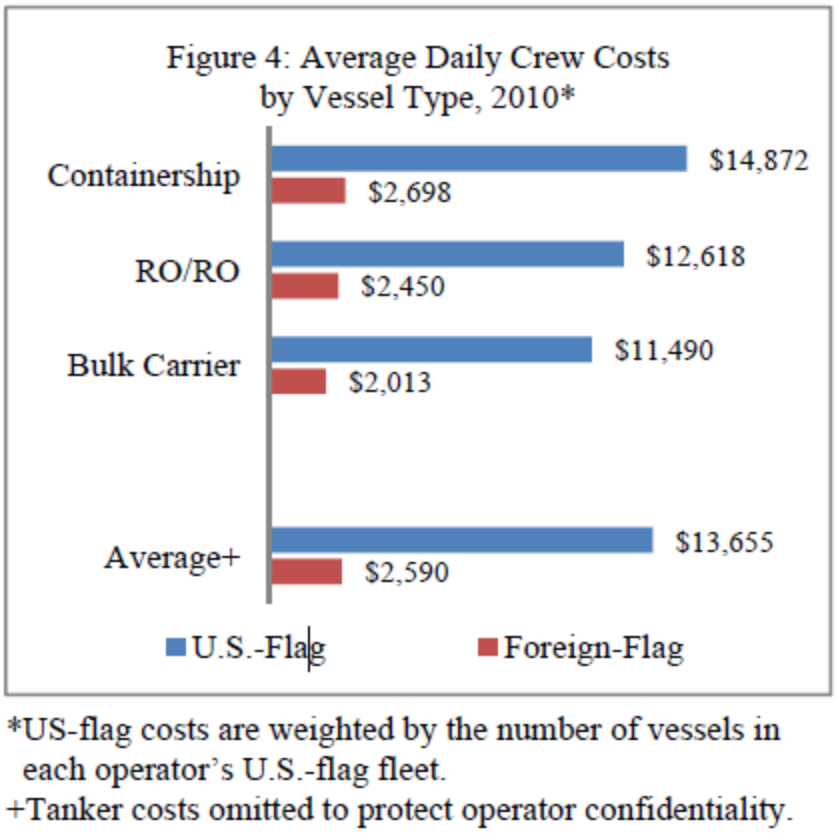


Figure 12. Average Daily Crew Costs by vessel type. Retrieved from a 2011 Maritime Administration report on the cost difference between U.S. and foreign-flagged vessels

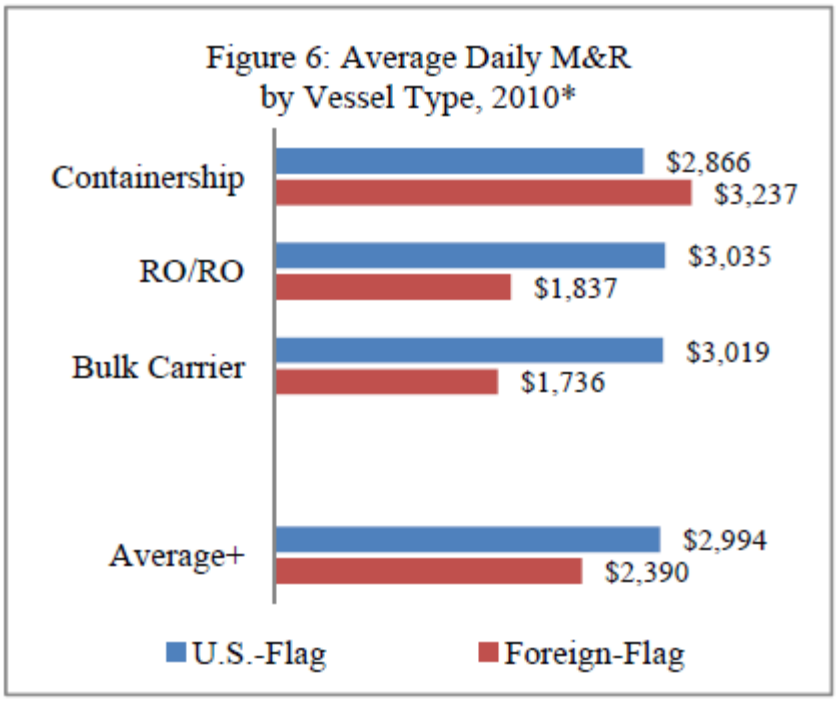


Figure 13. Average Daily Maintenance and Repair costs sorted by vessel. Retrieved from a 2011 Maritime Administration report on the cost difference between U.S. and foreign-flagged vessels.

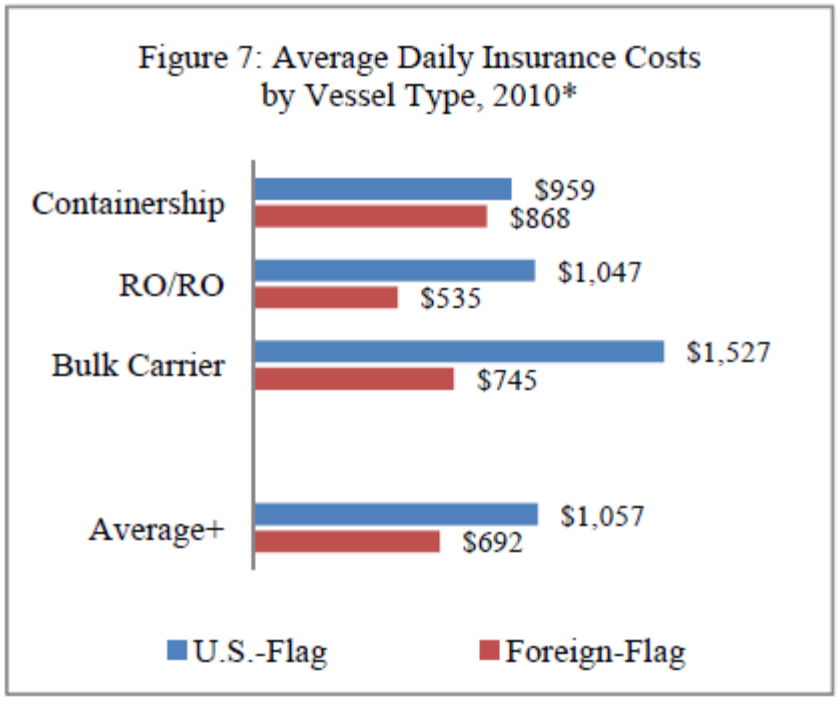


Figure 14. Average daily insurance costs of U.S. flagged carriers compared to foreign competitors. Retrieved from a 2011 Maritime Administration report on the cost difference between U.S. and foreign-flagged vessels.

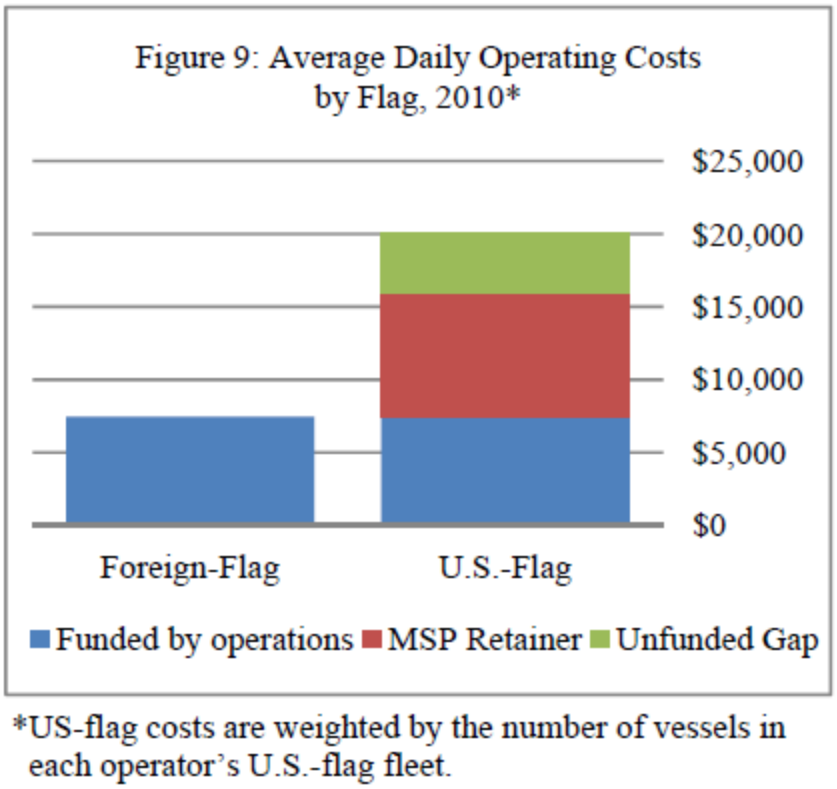


Figure 15. Comparison of total average daily operating costs of U.S. and foreign-flagged vessels. Retrieved from a 2011 Maritime Administration report on the cost difference between U.S. and foreign-flagged vessels.

Tables

Year	Tonnage Foreign Trade	US Flag Tonnage	% Total
1840	762,838	632,392	82.9
1845	904,476	738,956	81.7
1850	1,439,694	1,043,778	72.5
1855	2,348,358	1,775,358	75.6
1860	2,379,396	1,581,633	66.5
1865	1,518,350	420,583	27.7
1870	1,448,846	515,789	35.6
1875	1,515,998	391,127	25.8
1880	1,314,402	228,705	17.4
1881	1,297,035	207,525	16.0
1882	1,259,492	195,221	15.5

Source: J.D. Jerrold Kelley, The Question of Ships: The Navy and the Merchant Marine. (New York: Charles Scribner's Sons, 1884), 189.

Table 1. U.S. ocean-borne trade compared to total foreign trade between 1840 and 1882.

Number and Size of the U.S. Flag Merchant Fleet and Its Share of the World Fleet (Oceangoing Self-Propelled, Cargo-Carrying Vessels of 1,000 Gross Tons and Above			
Year	**World Fleet**	**U.S. Fleet**	**U.S. Percentage of the World Fleet**
1960	17,317	2,926	16.9%
1965	18,329	2,376	13.0%
1970	19,980	1,579	7.9%
1975	22,872	857	3.7%
1980	24,867	864	3.5%
1985	25,555	737	2.9%
1990	23,596	636	2.7%

1991	23,943	619	2.6%
1992	23,753	603	2.5%
1993	24,331	565	2.3%
1994	25,092	543	2.2%
1995	25,608	509	2.0%
1996	26,858	495	1.8%
1997	27,557	477	1.7%
1998	27,828	470	1.7%
1999	28,259	463	1.6%
2000	28,318	282	1.0%
2001	25,847	274	1.1%
2002	26,782	261	1.0%
2003	27,694	246	0.9%
2004	28,988	233	0.8%
2005	30,071	231	0.8%
2006	31,507	229	0.7%
2007	33,035	220	0.7%
2008	34,750	225	0.6%
2009	34,966	217	0.6%
2010	33,586	221	0.7%
2011	34,987	214	0.6%
2012	36,000	198	0.6%
2013	36,307	187	0.5%

2014	38,496	179	0.5%
2015	40,931	170	0.4%
2016	41,674	169	0.4%
2017	Unknown	167	Unknown
2018	Unknown	176	Unknown
2019	Unknown	182	Unknown

Table 2. Adapted from the U.S. Department of Transportation, Bureau of Transportation Statistics, "Number and Size of the U.S. Flag Merchant Fleet and Its Share of the World Fleet"

	Containership				Ro/Ro			
	U.S.		Foreign		U.S.		Foreign	
Cost Categories	2009	2010	2009	2010	2009	2010	2009	2010
Daily Wages*	$14,620	$14,872	$2,671	$2,698	$12,288	$12,618	$2,426	$2,450
% of Total	63.7%	70.2%	28.2%	28.2%	61.7%	65.7%	41.5%	41.4%
Magnitude	5.47	5.51			5.07	5.15		
Daily Stores/Lubes	$1,328	$1,053	$2,143	$2,200	$1,065	$1,251	$493	$513
% of Total	5.8%	5.0%	22.6%	23.0%	5.3%	6.5%	8.4%	8.7%
Magnitude	0.62	0.48			2.16	2.44		
Daily M&R	$3,529	$2,866	$3,118	$3,237	$4,294	$3,035	$1,778	$1,837
% of Total	15.4%	13.5%	33.0%	33.8%	21.6%	15.8%	30.4%	31.1%
Magnitude	1.13	0.89			2.41	1.65		
Daily Insurance	$1,024	$959	$960	$868	$1,250	$1,047	$582	$535
% of Total	4.5%	4.5%	10.1%	9.1%	6.3%	5.5%	10.0%	9.0%
Magnitude	1.07	1.11			2.15	1.96		
Daily Overhead	$2,446	$1,444	$571	$581	$1,012	$1,249	$569	$580
% of Total	10.7%	6.8%	6.0%	6.1%	5.1%	6.5%	9.7%	9.8%
Magnitude	4.29	2.49			1.78	2.15		
Daily Operating Costs	**$22,947**	**$21,194**	**$9,462**	**$9,583**	**$19,909**	**$19,200**	**$5,848**	**$5,915**
% Change		**-7.6%**		**1.3%**		**-3.6%**		**1.1%**
Magnitude	**2.43**	**2.21**			**3.40**	**3.25**		

	Bulk Carrier+				Average - All Vessel Types^			
	U.S.		Foreign		U.S.		Foreign	
Cost Categories	2009	2010	2009	2010	2009	2010	2009	2010
Daily Wages*	$11,962	$11,490	$1,993	$2,013	$13,616	$13,655	$2,565	$2,590
% of Total	58.3%	65.1%	34.8%	34.7%	62.5%	68.1%	34.6%	34.8%
Magnitude	6.00	5.71			5.31	5.27		
Daily Stores/Lubes	$1,681	$1,362	$620	$638	$1,303	$1,158	$1,041	$1,073
% of Total	8.2%	7.7%	10.8%	11.0%	6.0%	5.8%	14.1%	14.4%
Magnitude	2.71	2.14			1.25	1.08		
Daily M&R	$5,049	$3,019	$1,680	$1,736	$3,976	$2,994	$2,294	$2,390
% of Total	24.6%	17.1%	29.4%	29.9%	18.3%	14.9%	31.0%	32.1%
Magnitude	3.01	1.74			1.73	1.25		
Daily Insurance	$1,643	$1,527	$765	$745	$1,158	$1,057	$817	$692
% of Total	8.0%	8.6%	13.4%	12.8%	5.3%	5.3%	11.0%	9.3%
Magnitude	2.15	2.05			1.42	1.53		
Daily Overhead	$198	$257	$663	$676	$1,722	$1,189	$693	$709
% of Total	1.0%	1.5%	11.6%	11.6%	7.9%	5.9%	9.4%	9.5%
Magnitude	0.30	0.38			2.48	1.68		
Daily Operating Costs	**$20,532**	**$17,656**	**$5,721**	**$5,807**	**$21,774**	**$20,053**	**$7,410**	**$7,454**
% Change		**-14.0%**		**1.5%**		**-7.9%**		**0.6%**
Magnitude	**3.59**	**3.04**			**2.94**	**2.69**		

*Crew costs generally include basic wages, subsistence, overtime, travel costs, training, pensions, and union fees.

+Includes Handymax and Supramax sized vessels (25,000 - 65,000 DWT).

^While costs specific to U.S.-flag tankers were omitted to protect carrier confidentiality, tankers were included in average costs for all U.S.-flag vessels.

Table 3. Detailed Comparison of U.S. and Foreign-Flag Operating Costs compiled by a U.S. Maritime Administration report issued in 2011.