

MERCHANT MARINE ACT OF 1920: THE IMPACT ON AMERICAN MARITIME LABOR

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The Merchant Marine Act of 1920¹, popularly known as the Jones Act², provides that vessels engaged in United States intra-coastal trade—to wit, vessels going from one U.S. port directly to another U.S. port (including Alaska, Hawaiian Islands, and dependencies such as Puerto Rico)—must be constructed in the United States, have American corporate owners, and the U.S.-flagged.³ In addition, all licensed shipboard personnel (i.e., watch-standers) were required to be U.S. citizens.⁴ Furthermore, the act established procedural requirements for the treatment of injured crewmembers⁵ and the related right to institute civil proceedings against employers⁶ for injuries sustained as a result of negligence on the part of owner, captain or crew.

During the 1940-1955 period; the United States Navy and the nation's Merchant Marine dominated the seas, carrying goods largely, but not entirely, of American manufacture to every part of the world. This predominance grew out of both the massive shipbuilding effort of the Second World War and the collapse of such production by many of the world's industrial nations during that same period. This accomplishment stands as a monument to the supreme effort of hundreds of thousands of dedicated American workers.

This report examines the manner in which the Jones Act affected—both positively and negatively—the shipbuilding and merchant marine industries and employees. It considers abnormalities in ship production and employment—functions of American participation in World War II and dislocations accompanying the return to peacetime production and employment levels. Finally, the report, to the extent possible, evaluates the contribution that provisions of the Jones Act have made in furthering the interests of the shipbuilding and merchant marine industries and their employees.⁷

BACKGROUND

Shipbuilding

The fate of American shipbuilding is arguably the first historical example of how globalization has affected an American industry. While it was for many decades a vital domestic industry, during the period between the world wars and, especially, in the years following World War II the industry's production levels suffered, as ships of comparable quality were built in greater numbers in foreign yards, where both skilled labor and resources were both cheaper and more abundant. Indeed, shipbuilding serves as a paradigmatic model—both as to causes and effects—when an industrial segment relocates from a high labor cost (and high legacy cost⁸) western industrial nation to another not so encumbered.

¹ 41 Stat. 988 *et seq.*; 46 USC 688a and 46 USC 861 *et seq.*

² After Wesley L. Jones, a Republican senator from Washington and chairman, Committee on Commerce, which conducted hearings (1919-1920) on various prospective provisions of the act.

³ These requirements were established in nascent form in the Shipping Act of 1916 and recodified in the 1920 act. Shipping Act provisions contributed to the unexampled expansion of American shipbuilding beginning in 1917, a matter discussed below.

⁴ “The 1936 Merchant Marine Act extended that requirement to all officers [i.e., those not actually watch-standers—e.g., ship's physician] and to 75 percent of the ‘unlicensed’ (i.e., non-officer) crew. Although the ship owners could legally employ 25 percent foreign seamen on non-subsidized vessels, the companies effectively surrendered this right when they entered into hiring hall agreements with unions.” Donn, U.S. public policy and the disappearance of the U.S. seafaring labor force, p 15.

⁵ This portion of the act was adapted from the Federal railway statutes of the era. It requires that injured crewmen be provided adequate medical treatment and paid wages while incapacitated. They must be provided transportation to a homeport.

⁶ While crew protection provisions have been welcome benefit for crewmen injured in the course of their work and, for that matter, represent a positive contribution to American maritime law and the assurance of equitable treatment, those same provisions have been the source of sometimes questionable litigation, extending to such matters as determination of what constitutes a crewmember and the definition of an oceangoing vessel. For a review of such litigation, see Smith, Recent developments in admiralty law in the United States Supreme Court, the Fifth Circuit and the Eleventh Circuit, *Houston journal of international law*, Vol. 21, No. 3, 1999, pp 367 *et seq.*

⁷ Although dockworkers and longshoremen comprise a third group of laborers associated with the shipping industry, they are not considered in this report, as they are not covered by provisions of the Jones Act. Dockworkers are covered by the Longshoremen's and Harbor Workers' Compensation Act of 1927 (33 USC 901 *et seq.*).

⁸ Legacy costs are mandatory, out-year, labor-associated outlays (e.g., medical benefits, company-funded retirement pensions) that are continuing obligations on a company and payable to individuals (or their survivors, in some cases) who do not actually contribute to current production. These costs must be factored into current production cost equations, although many competitors—especially foreign ones—may not be comparably constrained. The most prominent American industries experiencing major legacy cost problems are automotive and steel production.

Inherent characteristics of large ship construction lent themselves to significant industry expatriation. In simplest terms, shipbuilding does not lend itself to mass production—a specialty of American manufacturing, indeed one invented and perfected in the United States in the early years of the 20th century. Building a modern ship, be it warship or commercial vessel, may be compared to building a 30- or 40-storey building lying on its side. Despite modern shipyard production facility appearances⁹, ships remain essentially one-off projects¹⁰. Even the advent of such production aids as digitally controlled plate cutting machines and computer-aided design has not changed that basic fact. In sum, despite appearances, ships are still essentially hand-built by artisans and the industry remains a labor-intensive one.

The Economics of Merchant Shipping

Oceanic shipping has been an efficient means of bulk transport since time immemorial. Industry economics—considered independent of artificially imposed constraints¹¹—are quite straightforward: it costs very little more to sail a vessel loaded to maximum capacity from Point A to Point B than it does to sail the same vessel along the same route with less cargo. Load factor—a percentage figure reflecting actual cargo tonnage¹² transportation experience, over a defined period of time, as a function of optimum cargo loading¹³—is a major determinant of profitability. Since extra cargo (or passengers, for that matter) can usually be transported at very little added cost, even modest improvements in load factor translate into significant increases in profitability, since operating costs remain, to all intents and purposes, fixed. Simply stated, as long as a vessel is sailing with a full (or almost full) cargo hold, it should earn a healthy return on investment.

Aside from fuel, perhaps the greatest operational cost is labor. Lifetime vessel fuel consumption can be constrained to some extent through more efficient ship design, although these limits have likely been almost met absent some radical hull redesign. Nonetheless, actual fuel costs remain uncontrollable factors, at least from the perspective of the ship owner/operator. As for labor, nothing can be accomplished in the absence of a competent crew of able seamen. Again, improvements in ship design may effect modest reductions in preexisting crew size minima. But the fact remains that skilled merchant marine sailors are now, and will remain for the foreseeable future, an essential component of commercial shipping.

A Rationale for Enactment of the Merchant Marine Act [Jones Act]

To some historians, the Jones Act represented an “attempt to introduce the mercantilist¹⁴ principles of the seventeenth century into the task of creating and maintaining a strong U.S.-flag fleet in the twentieth

⁹ Shipyards such as Northrup-Grumman (Pascagoula, MS) often build entire classes of ships. The hulls are laid out in parallel, with regularly decreasing evidence of construction progress (reflecting commensurately regular secular construction starting dates). This, in turn, gives the impression of an assembly, although the appearance is deceiving.

¹⁰ During World War II, Kaiser and some other producers did attempt a form of mass production, first with Liberty ships and, later, with Victory ships. However, as a practical matter, their production methods functioned more as a combination of prefabrication and job-shop production, rather than true mass production. See Bunker, Liberty ships: the ugly ducklings of World War II, 5.

¹¹ These include such considerations as upper limits on cargo tonnage imposed by insurance underwriters, increased crew requirements when transporting certain cargoes (e.g., explosives, volatiles), ship staffing requirements as a function of underlying crew size (e.g., added medical personnel).

¹² There are, of course, other standards of measurement, e.g., dollar value, number of passengers.

¹³ In certain circumstances, achieving a theoretically optimum load factor may actually involve unwanted added costs (e.g., increasing passenger numbers on cargo vessels to the extent that additional crew support must be secured).

¹⁴ Mercantilism was an economic doctrine based on the dubious principle that a nation’s wealth consisted primarily in the amount of specie—money in the form of precious metal—in its treasury. Accordingly, mercantilist governments imposed extensive restrictions on their economies to ensure a surplus of exports over imports. Since such economic autarchy cannot be sustained across an entire trading network—to wit, not every participating nation can enjoy a surplus of exports over imports, at least in any defined time period—mercantilism at the very least strongly implied the necessity of maintaining a large merchant fleet. A further product of mercantile economic theory was a quest for colonial holdings—in effect, bringing foreign sourced products under the aegis of domestic production and taxable under those terms. As such, they could only be transported on nationally flagged vessels. (This, however, created another prospective problem in the absence of genuine two-way trade within the mercantile model. A ship might have to ‘dead-head’ [return empty]. However, this problem could be obviated by continuous expansion in colonial holdings. England adopted such a policy, which led to the Anglo-Dutch naval wars of the last decades of the 17th century.) The

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century.”¹⁵ At the time of its passage (1920) the shipbuilding industry was enjoying abnormally high production levels, although there appeared to be a few clouds on the distant economic horizon.

During the 1914-1916 period, U.S. shipyards delivered 114 merchant ships (minimum 2,000+ tons displacement) and 51 naval ships.¹⁶ By contrast, during the war years, 1917-1919¹⁷, 1,186 merchant ships¹⁸ (minimum 2,000+ tons displacement) and 242 naval ships¹⁹ were delivered.²⁰ However, it was evident by late 1919 that these production levels were unlikely to sustain into the foreseeable future.²¹ And that ultimately proved to be the case.

In 1920, American yards delivered 450 merchant vessels and 92 warships.²² The following year the respective figures were 138 and 40.²³ While some of this reduction must be attributed to lessened demand incident to the Armistice, at least some of it must be accounted an indirect consequence of worsening economic conditions in post-war Europe. Every European combatant nation was mired into debt (largely to U.S. lenders) and simply lacked the foreign exchange—and, in the immediate post-war period, the capacity to earn such exchange—to purchase American products.²⁴ Under these circumstances it would have appeared prudent to reserve as much of a prospectively declining market to American-flagged vessels.

There were other factors at work, as well. Foreign demand for American commodities expanded with the outbreak of hostilities in 1914. Initially, most carriage was accomplished by British- and Empire-flagged ships, which, in the course of operations, suffered enormous losses to German U-boats. British shipbuilders were hard pressed to construct replacement bottoms in sufficient quantity. Under these conditions, American shipbuilders were in a position to gain significant market share. The 1916 Shipping Act provided for antitrust exemptions to American shipping conferences, allowing for the equivalent of rate fixing on American-built and flagged ships. This, in turn, encouraged the construction of merchant hulls in American yards. To at least some extent, the 1916 Act contributed to the wartime expansion of the shipbuilding industry, a factor that would have been evident to the legislators who crafted the Jones Act in 1920. Despite the postwar economic turmoil in Europe—or perhaps because it was not yet so patent—the designers of the Jones Act believed that American commodity—notably grain—exports to Europe would continue at the base levels enjoyed during the first decade of the century. Establishing a requirement that

transatlantic tobacco trade in the seventeenth century is a case in point. Virginia, an English colony, was a major exporter of the commodity. They were required to ship their product to England on English-flagged vessels (usually at higher shipping rates than those of Portugal, Holland or France). Upon arrival, English tax collectors collected an excise that reached 30 percent in some years. For the Royal Exchequer this amounted to a continuous windfall. In some years the tobacco excise amounted to 25 percent of royal revenues. Ships transporting tobacco to England returned to Virginia with finished products, themselves protected from foreign competition—much the consternation of colonial settlers—and, like tobacco, subject to royal taxation. Given the outcome, mercantilism appeared to make perfect sense, at least to government authorities.

¹⁵ De La Pedraja, A historical dictionary of the U.S. merchant marine and shipping industry since the introduction of steam, p 286

¹⁶ SNAME, Deliveries from U.S. Shipyards, 1914-1945 [chart]

¹⁷ While the Armistice ended hostilities in November 1918, wartime production levels sustained through the following year.

¹⁸ While the surge in wartime merchant ship production had been predicated on the requirement to deliver American commodities and munitions to the Allies, most of the ships constructed during this period (680) were delivered in 1919.

¹⁹ Interestingly, over half of these (134) were delivered in 1919, after hostilities had been concluded.

²⁰ SNAME, *Loc. Cit.*

²¹ Interestingly, in his testimony before Senate Commerce Committee, Harrison Robinson, an attorney representing a number of West Coast shipbuilders, stated that industry members assumed—perhaps incident to government assurances, real or implied—that ship construction would continue at wartime levels, even with the end of hostilities. [See Hearings relative to the establishment of an American merchant marine, 1919-1920] However, any such assurance, if such there were, could only have applied to warship construction. There was no legislative mechanism in place that would have permitted the Administration to subsidize continued construction of merchant ships at wartime levels.

²² *Ibid.*

²³ *Ibid.* While naval ship deliveries were less than half of those of 1920, gross tonnage was about the same. This appears to be attributable to longer construction time periods required to complete the largest combatants (e.g., heavy cruisers and battleships).

²⁴ During the decade leading up to the outbreak of the World War I (1914), America exported upwards of 20 percent of its grain production to Europe. This, of course, had an enormous positive impact on both the farm and automotive (farm equipment) sectors of the national economy.

would encourage reliance on American bottoms²⁵ would likely facilitate a continuing merchant ship construction, albeit perhaps at a less energetic pace than that experienced during the war years.

Whatever the expectations of the authors of the Jones Act, beginning in 1922 annual merchant ship deliveries from American yards dropped precipitously, not to exceed the 1914 level (24) until 1938. To rescue what was left of the American merchant fleet, Congress enacted the Merchant Marine Act [MMA] of 1936, which established a program of cost-equalizing subsidies for ship construction and operation. The act authorized construction and operations subsidies for up to 500 ships and committed the United States to a conscious policy of government support²⁶ for that fleet. However, MMA was designed to maintain U.S.-flag general-cargo liner service. “No similar assistance was available to bulkers and tankers, and so U.S.-flag ships have almost disappeared from such service, apart from certain protected trades.”²⁷ Naval ship construction remained minimal—usually one to three warships annually—through much of this period²⁸, only rising to a modest average annual delivery base (ca. 25 warships) in 1936.²⁹ Furthermore, under the terms of the Act, operating subsidies varied with certain national interest criteria. Only “operators of American ships on routes that were designated as essential to American commerce or national defense [were] given subsidies sufficiently large to make up the difference between construction costs of their ships and the construction costs of comparable and competing foreign ships.”³⁰

CABOTAGE

A Brief Excursus

Cabotage³¹ is properly defined as navigation and trade along a coast, specifically between ports within a country.³² Most nations establish cabotage restrictions to benefit domestic carriers and the United States is no exception. “The domestic trade of the United States has been largely restricted to U.S.-built vessels since 1817³³ and the Merchant Marine Act of 1920 extended this restriction to noncontiguous trades (e.g., Alaska

²⁵ This is closely related to the mechanics of grain shipment in the early years of the 20th century. Cargo ships usually loaded grain at elevators in navigable upper reaches of the Mississippi River (e.g., Saint Louis), sometimes going from grain elevator to grain elevator and, thereby, implicating existing cabotage restrictions. By placing a domestic construction requirement (in addition to the national flagging one), American market share of exported grain carriage could be expected to rise.

²⁶ American operating cost disparities relative to those of foreign fleets maintained across the board. “American seamen got higher wages than British other European seamen; American clerks in the shipping offices got higher wages than European clerks. American executives got higher salaries than European executives. Even the very rent of a steamship office and the cost of the manifold details connected with the operation of seagoing vessels were proportionately higher than [those] abroad.” GI Roundtable, What shall be done with our merchant fleet?

²⁷ Everett *et al.*, Optimization of a fleet of large tankers and bulkers: a linear programming approach, Marine technology, October 1972

²⁸ Much of this, however, must be attributed to the Washington Naval Conference agreement (February 1922), which established ratio limitations on large combatants belonging to the fleets of the great naval powers. (The ratios were 10-10-6-1.67-1.67, respectively, for Britain, the United States, Japan, France and Italy. Design constraints led to a modification of the ratios in 1930, allowing the Japanese figure to rise to 7.) For details of the agreement, see Conference on the limitation of armament, Washington, November 1921-February 1922, Papers relating to the foreign relations of the United States: 1922, Vol. 1, pp 247-266

²⁹ The Second London Naval Conference agreement provided gross tonnage and main battery escalator clauses amending the 1922 and 1930 agreements. However, as a practical matter, the conference participants were all tacitly in breach of the established limitations. In the case of the United States it was more a matter of technology upsetting international equilibrium. For example, the Saint Louis-class heavy cruisers were 5,000 tons over limit. When Japan in 1936 opted out of abiding by any naval treaty constraints, American naval planners upgraded the main battery of the North Carolina- and South Dakota-class to 16-inch rifles (from the previously planned 14-inch). This, in turn, led to increases beyond established tonnage displacement levels for both of these classes of battleships.

³⁰ GI Roundtable, Loc. Cit.

³¹ Evidently derived from the French verb, *caboter*, meaning ‘to sail along a coast.’

³² Cabotage is not unique to the maritime industry. The concept exists in the airline industry as well where the carriage of goods or passengers between domestic locations may be restricted to airlines based in that country. The application of the concept differs significantly between the maritime and air transport industries but the concept itself is similar.

³³ The Navigation Act of 1817 provided, *inter alia*, “That no goods, wares, or merchandise, shall be imported, under penalty of forfeiture thereof, from one port of the United States to another port of the United States, in a vessel belonging wholly or in part to a subject of any foreign power; but this clause shall not be construed to prohibit the sailing of any foreign vessel from one to another port of the United States, provided no goods, wares or merchandise, other than those imported in such vessel from some foreign port, and which shall not have been unladen, shall be carried from one port or place to another in the United States.” 3 Stat. 351, March 1, 1817. Note that the import of 1817 act extended to ownership, rather than flagging or crewing. While it is usually not the subject of historical discussion, a major objective of the 1817 act was—at least tacitly—to restrict British-flagged merchantmen from access to U.S. ports. (Britain, of course, at the time had the largest commercial fleet—and the largest navy, for that matter—in the world.) Section 1 of the act provided that no goods, wares or merchandise “shall be imported into the United States from any foreign port or place, except in vessels of the United States, or in such foreign vessels as truly and wholly belong to the citizens or subjects of that country of which the goods are the growth, production, or manufacture; or from such [items] ...can only be, or

and Hawaii). Section 27 of the Merchant Marine Act of 1920³⁴ ... has effectively restricted movement of the cargo between U.S. ports to U.S.-built, U.S.-flagged, U.S.-crewed vessels.”³⁵

As a practical matter, the United States issues very few waivers of cabotage requirements, the only grounds for such waivers being the exigencies of national defense. “At the same time the United States is virtually unique in imposing a cabotage requirement and then further requiring that vessels in the domestic trades be domestically built. This has added significantly to the capital costs of domestic trades operators, helped to produce higher costs for shippers, and made the coastal trade vessel operators [less competitive] with land-based transportation alternatives.”³⁶

U.S. SHIPYARD DELIVERIES AND EMPLOYMENT DURING WORLD WAR II

Despite the outbreak of war in Europe in 1939—and the consequent increased Allied demand for American goods and commodities to support the war effort—the annual rate of new merchant ship deliveries did not show its first significant increase until 1941, when 95 vessels were delivered (almost twice the 1940 number). To at least some extent this may be attributable to the subsidy limitations inherent in MMA 1936. The most popular hull design was the C-series, which combined high speed (for a commercial vessel), increased cargo capacity, and advanced propulsion technology that contributed to more economical operation. These ships were well constructed and required time to build. Another factor may have been the American neutrality legislation enacted in early 1940, which precluded the construction of vessels for sale to belligerents.

Conversely, naval ship deliveries showed no significant increase until 1942. A total of 35 warships were delivered in 1941, only 4 more than the previous year. This restraint in the face of a war raging on three continents appears remarkable, to say the least. Perhaps American naval planners—or, more likely, congressional isolationists—in 1939 and 1940 were still thinking—at least to some extent—in terms of the limitations imposed by the various naval armaments agreements of the preceding two decades.

Merchant vessel production

Annual wartime (calendar years 1942-1945) ship deliveries were enormous.³⁷ Of large (over 2,000 GWT) merchant ships, 4,915 (amounting to almost 37 million GWT) were delivered. A closer examination of the annual numbers reveals some interesting trends, some of which appear to track with certain developments in the war at sea. Average commercial vessel displacement remained remarkably stable throughout the war, varying between 7,200 and 7,800 GWT.³⁸ Understood simply in terms of total ships and total tonnage, annual deliveries peaked in 1943, with an average monthly delivery rate of 138.4 ships and total monthly production of 13.0 million tons. The comparable figures for 1944 and 1945³⁹ are 121.9 ships/11.8 million tons and 133.4 ships/7.9 million tons, respectively.⁴⁰

The modest draw down in monthly ship/tonnage numbers does not, by any means, represent any slackening of effort. Rather, it reflects changed—and, arguably, more ambitious—shipbuilding objectives flowing from

most usually are, first shipped for transportation.” To the extent that this provision affected Spanish-flagged vessels, it may also point to an American foreign policy objective of supporting independence movements in Latin America.

³⁴ An equivalent policy, established under the terms of the Passenger Vessel Services Act of 1886, governs the movement of passengers in intra-coastal trade.

³⁵ Donn, *Op. cit.*, pp 4-5

³⁶ *Ibid.*, p 5

³⁷ Traditionally, the shipbuilding and, to a lesser extent, shipping, are what Gorter calls ‘feast or famine’ industries, passing through ‘boom and bust’ cycles that, in the twentieth century, have occurred during the two world wars. During peacetime, shipbuilding is almost moribund and shipping interests rely, to a significant extent, on vessels constructed during the war effort. The nine years clustered around World Wars I and II account for nearly 90 percent of the U.S. shipbuilding industry’s total output for the first 65 years of the century.

³⁸ These figures are derived from data contained in SNAME, *Loc. Cit.*

³⁹ For comparative purposes, the 1945 figures are considered in terms of an 8-month year, to account for the end of hostilities in early September 1945.

⁴⁰ Again, these figures are derived from data contained in SNAME, *Loc. Cit.*

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Allied successes in containing the U-boat menace in the North Atlantic. By early 1943, improvements in allied antisubmarine warfare technology and tactical applications began to manifest themselves in increasing rates of U-boat loss by the Kriegsmarine, losses in terms of both men and equipment that Germany was increasingly hard pressed to replace. This success prompted a shift away from the rapidly produced (but only modestly performing and, sad to say, easily targeted) Liberty-class merchant ships to the more labor-intensive, better-constructed (and better operating) Victory-class.⁴¹

Naval ship production

As was the case with commercial vessels, annual wartime production of combat and support vessels was monumental. Almost 1,500 such ships (amounting to almost 4.5 million GWT) were delivered to the Navy between 1942 and 1945.⁴² The wartime monthly production number curve replicated that of merchant shipping. Average monthly naval ship deliveries were 12.1, 50.7, 45.0 and 25.4 for years 1942, 1943, and 1944, and 1945, respectively.⁴³ (Again, the peak year was 1943, with 1944 close behind.) However, average warship displacement tonnage appears to track with changing wartime conditions, as was the case the maritime production. In 1942, that figure was 3,800, reflecting the completion and delivery of very large combatants authorized before the United States became a formal belligerent. As large numbers of destroyers and destroyer escorts entered service, that average figure dropped to 2,600 and 2,800 in calendar years 1943 and 1944, respectively. However, as the U-boat menace receded and much of the naval effort shifted to the Pacific, larger surface combatants and amphibious support ships were required. Average displacement of 1945 deliveries was 4,100 tons.

Shipyard employment

This interpretation of the data appears validated by an examination of shipbuilding employment numbers during the war years. According to the Bureau of Labor Statistics (BLS), shipbuilding employment numbers for the war years were 0.8 million, 1.3 million, 1.2 million and 0.7 million respectively during calendar years 1942 through 1945.⁴⁴ The peak year was 1943, with 1944 showing an approximate draw down of 90,000 from the peak year. Employment levels correlate with actual numbers of ships delivered.

Interestingly, analysis of the data points to a diminution of shipyard skill levels after 1942. Understood in terms of average individual worker production—what percentage of an average ship a yard worker constructed—that figure in 1942 was 0.114 percent. (In effect, it took 877 workers to build the average ship delivered during that year.) Comparable percentage figures in calendar years 1943 through 1945 remained stable at approximately one half the 1942 value. In sum, during the last three years of the war, vessel construction required the services of an average 1,695 shipyard workers. This, in turn, points to the inherent value of a highly skilled workforce, irrespective the dedication of newly employed counterparts.

⁴¹ As in other aspects of World War II, the fortunes of war greatly influence production decisions. In 1941 and 1942, the merchant marine sustained catastrophic losses to submarine attack. Approximately ten thousand merchant seamen killed in action during course of the war. Allied merchant ship losses for the early war period were 1050, 1270, and 1650 for, respectively, 1940, 1941 and 1942. For 1942 through the end of the war, those same figures were 600, 200 and 80. One in 26 mariners serving aboard merchant ships in World War II died in the line of duty, suffering a greater percentage of war-related deaths than all other U.S. services. Casualties were kept secret during the war to keep information about their success from the enemy and to attract and keep mariners at sea. In any event, as ship losses receded on a secular basis, it was possible to shift construction efforts to better-designed and more sea-worthy vessels.

⁴² SNAME, Loc. Cit.

⁴³ Ibid.

⁴⁴ MARAD, Employment in shipbuilding and repairing, 1923-2003 [MARAD is the author of the document. However, BLS provided the statistical data.] Numbers alone do not capture the intensity of the effort. Shipyards in Oakland, Richmond, San Francisco, Sausalito and Vallejo alone employed 240,000 union workers around the clock—and that was only in California. In some cases, getting a job at a shipyard was as easy as showing up, although experienced skilled labor was especially valued. Some California historians refer to this period as ‘the second gold rush,’ because opportunity to succeed in the wartime industries—especially shipbuilding—brought so many people to the Golden State. For details of various facets of industrial experience during the war, see Brickman, L. *et al.*, Asbestos kills: and more than just people—jobs, ethics, and elementary justice, National review, January 31, 2005; Miller, S. M. *et al.*, American labor in the era of World War II, Westport [CT]: Praeger, 1995; and Walters, W. D., American naval shipbuilding 1890-1989, The geographical review, Vol. 90, No. 3.

U.S. SHIPYARD DELIVERIES AND EMPLOYMENT DURING THE 1947-1955 PERIOD⁴⁵

As the hostilities of World War II drew to a close, so did the demand for merchant and naval vessels to support that effort. As with other defense production facilities, U.S. shipyards returned to peacetime production status. Yards activated for the emergency often disappeared altogether. By 1946, business at surviving yards had plunged over ninety percent. In 1945, American yards had delivered 8.5 million tons of shipping.⁴⁶ A year later that figure declined to a mere 700 thousand tons.⁴⁷ In 1945, American shipbuilders produced roughly 80 percent of the world's vessel construction. A year later that figure stood at 25 percent.⁴⁸ A decade later even that modest amount had collapsed. In 1955, American shipbuilders accounted for 4.7 percent of global output—a mere 251,000 GWT⁴⁹ of the 5.3 million GWT⁵⁰ worldwide. Shipyard employment figures declined in pace with the draw down in ship production. In 1945, America's shipbuilders employed 742 thousand yard workers. In 1955, that number stood at 101 thousand.⁵¹

Merchant vessel production

Annual merchant ship deliveries were quite modest during the period in question. During the 1947-1950 period, 139 vessels (1,405,000 GWT) were delivered, most (or possibly all) constructed under MMA 1936 subsidy provisions, in support of the Marshall Plan European recovery program.⁵² A second modest spurt in merchant shipbuilding occurred during the 1952-1954 period, when a total of 114 vessels (1,531,000 GWT) were delivered.⁵³ This may well have been a function of changed political conditions in the Far East. The successful communist revolution in China (1949), war in Korea (1950), and an ongoing insurgency in the Philippines may well have encouraged Congress and the Administration to authorize MMA subsidies for merchant vessels in the Pacific trade. However, even that modest delivery level fell to only eight in 1955⁵⁴ and would not show any signs of recovery until 1957.

Naval ship production

Naval ship deliveries during the 1947-1952 time frame were almost nil—indeed, in 1950 they were nil, as not a single Navy ship was delivered. A total of 24 vessels (186,000 GWT) were delivered during the period⁵⁵. A modest measure of recovery occurred during the 1953-1955 time frame, when 43 vessels (245,000 GWT) were delivered.⁵⁶

Shipyard employment

Average annual shipyard employment was 111,000 during the period in question, with a high of 137,000 (1947) and a low of 72,000 (1950). Individual shipyard worker efficiency—what fraction of an average ship a yard worker constructed—fluctuated considerably during the period, from a low in 1951 (0.00011) to a very

⁴⁵ According to the Maritime Administration, precise statistical data reflecting shipyard employment and ship deliveries for calendar year 1946 are not available.

⁴⁶ SNAME, *Loc. Cit.*

⁴⁷ Gorter, United States shipping policy, p 5

⁴⁸ *Ibid.*

⁴⁹ MARAD, Deliveries from U.S. shipyards, 1947-1976

⁵⁰ Gorter, *Op. cit.*

⁵¹ MARAD, *Loc. Cit.*

⁵² As described *supra*, MMA subsidy provisions were restricted to break-bulk ships. Aside from grain deliveries, almost all Marshall Plan aid was in the form of credits for the purchase of American manufactured goods that, in turn, were intended to restart Europe's shattered economy. Some of these ships may even have been constructed with Marshall Plan funds for delivery to European operators. (A comparable situation existed in November 1941 with American destroyer production. The first Fletcher-class destroyer deliveries were intended for transfer to the Royal Navy—indeed, a total of 6 actually were. However, with American entry into the war, the transfer program was terminated and new warship production was restricted to U.S. Navy delivery.)

⁵³ MARAD, *Loc. Cit.*

⁵⁴ *Ibid.*

⁵⁵ *Ibid.*

⁵⁶ *Ibid.* The 1955 data indicate unusually large displacement values for the naval ships delivered that year, confirmed by independent investigation. The first of the *Forrestal*-class aircraft carriers were delivered in that year.

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respectable 0.00047 in calendar years 1949, 1953 and 1954. In each of these latter years, shipyards were in the midst of both commercial- and naval-ship class production programs. This, in turn, allows for a few reasonable suppositions. First, career shipyard workers manifest greatest professional efficiency when the same workers are engaged in building a class of ships over a number of years—in effect, they learn ‘how to build the ship.’ Second, insufficient ship orders generate inefficiencies that worker skill simply cannot overcome.

Whatever the merits of maintaining a respectably sized merchant marine, it appears from the data that considerations of national defense—whether openly expressed or only tacitly considered—constituted the primary desideratum in most shipyard construction during the 1947-1955 time frame.

MERCHANT MARINE EMPLOYMENT LEVELS: 1946-1955⁵⁷

Not unexpectedly, the numbers of active merchant marine sailors, like those of shipyard workers, declined radically with the return to peace. While on paper the United States had a huge number of vessels, almost immediately after cessation of hostilities large numbers merchant ships were laid up (placed in an inactive status). For example, in 1946 the total U.S. merchant fleet amounted to 4,422 vessels, of which only 2,332 were actually plying trade routes.⁵⁸ Furthermore, during the first postwar years (1946-1947) government-owned vessels outnumbered privately owned ones by a substantial margin.⁵⁹

Relying on data relating to active commercial shipping and derived from MARAD sources, implied merchant mariner numbers point to relatively high levels of employment in 1946 and 1947 (152,000 and 137,000, respectively) and very low numbers in 1954 and 1955 (69,000 and 72,000). There was a modest increase in seamen occupation numbers during the Korean War, with an average of 95,000 merchant mariners employed during the period.

Taken as a whole, active merchant vessel numbers during the period in question rose and fell with the national security interests of the United States rather than commercial interests independent of that consideration. In addition, the data also point to an underlying form of competition (or, more accurately, constraint) posed by the availability of government-owned ships. During the Korean War, the number of government-owned vessels in active service averaged well over two hundred. However, the number of privately owned active vessels remained fairly constant at levels that prevailed in 1949-1950. It thus appears that, however indirectly, civilian merchant ship operators act on the presumption that the availability of government-owned ships in reserve—which of course can be maintained at a relatively high state of activation readiness with little or no consideration of cost ramifications—make it unwise to procure new construction vessels in significant numbers.⁶⁰

⁵⁷ Extensive research into statistical data maintained by the Bureau of Labor Statistics (BLS), the Maritime Administration (MARAD), and online records of the National Archives and Records Administration (NARA) shed little light on the number of ‘unlicensed’ merchant marine crewmen were employed during the period in question. Evidently, from the record-keeping perspective of the Department of Labor, waterborne employment is regularly combined with all other transportation employment, the bulk of it, of course, being rail transport. MARAD publishes statistical data in terms of vessel numbers and tonnages, rather than in numbers of industry employees. The sole exception was a subset found in the 1951 *Statistical Abstract of the United States*. In that year, 102,000 merchant marine sailors were regularly employed. In that same year, the active American merchant marine fleet amounted to 1,536 vessels, or approximately 66 merchant mariners per ship. To avoid possible confusion, it should be borne in mind that each shipboard job (or, properly, ‘berth’) represents 1.5 to 2 actual merchant mariners, since many such employees regularly depart a ship upon return to home port and only report to a union hiring hall when they wish to return to sea. Understood in these terms, a merchant vessel with, say, 40 berths would support employment for approximately 70 merchant mariners on an annual basis. (See Donn, U.S. public policy and the disappearance of the U.S. seafaring labor force, p 2n, for a fuller discussion.) For the purposes of this report, each active merchant ship in the annual inventory is accounted as providing employment to 65 merchant mariners, except when other, more precise, data are available.

⁵⁸ MARAD, U.S.-flag merchant fleet [statistical data chart]

⁵⁹ This may well have been a function of Marshall Plan aid for European recovery. The statistical data demonstrate that as commercial vessel numbers increased government-owned ones were withdrawn from service, reaching a low of 49 in 1950. However, with the outbreak of the Korean War, many government-owned vessels were reactivated (or, perhaps, purchased) and the number of such remained at approximately 200 ships through 1953.

⁶⁰ This consideration is treated further below.

IMPLICATIONS OF JONES ACT CONSTRAINTS ON MERCHANT SHIPPING AND SHIPBUILDING

As described *supra*, Jones Act cabotage requirements (as amended and expanded by subsequent legislation) restrict such trades to American built, flagged and manned vessels, with very few exemptions granted. The goal of these restrictions was to reserve to American merchant mariners and ship operators some segment of the waterborne shipping industry during a projected period of decline. Likewise, the limitation restricting cabotage to American-built ships was intended to protect that sector of the American economy⁶¹ and to preserve such a capability as a contingency in the event of surge ship construction demand in wartime.

Insofar as purely economic considerations are concerned—and, as it happens, it is unlikely that such considerations can be completely divorced from the national security ones⁶²—it is possible to make a reasonable case for such restrictions. However, it is questionable whether those same criteria apply in a period of prosperity. A major argument in favor of Jones Act constraints has been the international character of shipping. Some foreign countries (like the United States, to some extent) subsidize their state-controlled carriers, granting them transport price-setting options not available to those entirely dependent on the vagaries of the free market.⁶³

Jones Act and MMA 1936 restrictions⁶⁴ certainly do not appear to have contributed to vibrant merchant marine and shipbuilding industries in the decade following World War II. Insofar as the Jones Act is concerned, this may have been the result of factors likely given little consideration during the period of its enactment.

Holmes et al. have developed a complex algorithm⁶⁵ allowing for cost comparisons of coastal shipping with other transportation modes. The authors found that the high labor costs⁶⁶ associated with coastal shipping encouraged reliance on railroads, even for certain bulk shipments⁶⁷, and, perhaps more important, discouraged the construction of innovative-design ships (e.g., containers) that might compete effectively with rail transport. Break-bulk cargoes that are not particularly delivery time-sensitive, could be delivered by container ship. However, American shipyards build very few, if any containers, if only because there is little or no domestic market for them. Holmes et al. argue that by “lowering tariffs between areas, which is equivalent to lowering the price of transportation, competition is increased in other sectors. [The authors

⁶¹ Holmes *et al.* state, “For a long time, ships flying the American flag have faced construction and operating costs higher than those of most of their competitors. The gap has widened and, in recent years, shipbuilding in the USA has cost about twice—and wages for American crews four times—the figures for representative foreign equivalents.” Competition at work: railroads v. monopoly in the U.S. shipping industry, p 1.

⁶² According to Donn, “Critics of cargo preference policies in the United States argue that they are costly and that they force shipper (rather than the general taxpayers) to bear the expense of U.S. national security. That argue [further] that the history of cargo preference shows no record of success in developing and maintaining a strategic U.S. fleet available in time of national emergency.” U.S. public policy and the disappearance of the U.S. seafaring labor force, p 8. However, from the evidence presented *supra*, in the Korean War shipping demand surge, government-owned vessels were available to take up the slack. Of course, this may simply make Donn’s point. Government-owned vessels were necessary for this purpose precisely because commercial operators lacked any inherent surge capacity.

⁶³ According to Charles A. James, assistant attorney general/antitrust division, Department of Justice, “This was a significant concern to U.S.-flag carriers in the 1970s, but Congress had already dealt with that. The Shipping Act of 1984 gave the [Maritime] Commission power to disapprove rates of such carriers that were below a just and reasonable level.” Committee on the judiciary, The free market antitrust immunity reform act of 2001, Hearing, Prepared testimony, p 7.

⁶⁴ In some respects they appear to have been inherently counterproductive. According to Donn, “the regulatory and bureaucratic burden inherent in accepting a subsidy under the Merchant Marine Act was considerable. It was so considerable that one of the larger liner operators, Sea-Land Services, never did participate in the program, deciding that the subsidies, quite considerable though they were, were not worth the inflexibility and bureaucratic problems involved.” *Op cit.*, p 11

⁶⁵ The algorithm is based on the one developed Nobel Prize-winning economist Thomas Fogel to quantify the contribution of railroads to the development of the United States economy. While the underlying equations are tweaked to some extent, the principle remains the same.

⁶⁶ In fairness, government bureaucracy can also be a villain in this respect. As Donn explains it, “the U.S. Coast Guard has long maintained standards with regard to crew complements and work rules that have been significantly more conservative than standards followed by other countries. In terms of requirements for ‘watch-standing’ and for ‘attended’ engine rooms, Coast Guard requirements effectively mandated larger crew numbers than was the case for many competing fleets. Higher staffing levels were also required by certain work rules. For example the Coast Guard has traditionally required that seafarers sign onto a vessel in only one department, [despite the fact that the crewmember had a license or certificate for either one]. *Op cit.*, p 16

⁶⁷ It is perhaps telling that Jones Act-qualified shipping includes only 19 bulk carriers, all of them in the Great Lakes trades.

continue that] this increased competition can lead to productivity gains in other sectors as for example, inefficient work practices are abandoned.”⁶⁸

This, of course, has major implications for both shipping and shipbuilding⁶⁹. It should be noted that while the merchant mariner working population is now quite small, actual wages remain quite respectable. “The principal cause of the reduction in seafaring jobs has been technological change. This involves two factors. First, a given ship now carries much more cargo because the vessel is larger and it spends less time in port—it gets loaded and unloaded more quickly—than was the case in 1945. Second, each vessel now has a much smaller crew than was the case in the 1940s, contemporary crew levels often being less than one-third of what they were.”⁷⁰

In the case of shipping, Jones Act regulations have had the effect of reducing reliance on shipping in the domestic transportation market while, at the same time, failing to take advantage of technological advances that would encourage greater reliance on shipping in that same market. This, in turn, has had a deleterious effect on shipyards. As the data developed *supra* clearly indicate, low ship construction levels generate inefficiencies, if only because shipyard equipment cannot be utilized at optimum levels. By the same token, such low ship order levels contribute to workforce instability, leading to the loss of experienced personnel and, prospectively more ominous in the event of a future demand for rapid industrial expansion (as happened in the two world wars), the inability to adequately train new personnel.

FINAL THOUGHTS

Few correctives in life are completely painless. It is possible to retain Jones Act requirements for the foreseeable future. To be a more contributing component of the nation’s transportation system, however, will require design innovation, favorable government legislation and administrative procedures, and changes in crew structure. Simply stated, it almost certainly must come at the expense of ‘unlicensed’ (or ‘certificate’ crewmembers) rather than licensed ones (officers and mates). This is not necessarily an unmitigated evil. Over the years, many industries have modernized and reduced consumer costs while, at the same time, reducing workforce requirements. There is no reason for the shipping industry to be any different.

It is in the shipbuilding industry, ironically enough, that the Jones Act could make the greatest contribution. By maintaining cabotage restrictions pertaining to domestic hull construction, favorable shipping innovations would likely lead to increase ship construction designed for the coastal trade. At present, American shipyards not actually building naval vessels are pretty much restricted by economic realities to the construction of items not often associated with the shipping industry (e.g., offshore oil rigs, river barges) and, of course, cruise vessels engaged in the Hawaii/Alaska trades. Facilitating the application of container vessels to the coastal trade would change that equation altogether.

⁶⁸ *Op. cit.*, p 15

⁶⁹ It could even have implications for other industries as well. For example, increased reliance on containers in domestic waterborne transportation would likely encourage improvements in port throughput capacity.

⁷⁰ Donn, *Op. cit.*, p 3 Of course, these observations nonetheless implicate existing Coast Guard requirements—described *supra*—pertaining to crew level minima. However, technology may resolve what bureaucratic inertia will not. If safe crew levels are a function of specific shipboard jobs to be performed, then it becomes an attractive option to replace crewmembers altogether with innovative technology (in much the same manner that the automobile industry replaced assembly line workers with robots).

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