

The Story of the Liberty Ships

Marijan Žuvić

THEY MARK OUR PASSAGE AS A RACE OF MEN, EARTH WILL NOT SEE SUCH SHIPS AS THOSE AGAIN

Although John Edward Masefield wrote his poem 'Ships' back in 1917, these verses are the best homage to the Liberty ships built a quarter of a century later, describing their very special place in history, not only in the chronicles of shipbuilding and shipping but in the history of mankind. Today it's not easy to describe the enormous effort and achievement it took to build 18 new shipyards on the fields and marshes across America and then construct 2711 ocean-going steamers. Believe it or not, this gigantic fleet was built in only four years, between December 1941 and October 1945!

Seven decades later, the story of the Liberty ships has long been forgotten. The new generations of shipbuilders and seafarers are completely unaware of the ships that saved the world. Since back in 1978 this author was the youngest ever contributor to the eight-volume Croatian Maritime Encyclopaedia with the article on the Liberty ships, it is a great pleasure to introduce these glorious steamers to the readership of ToMS.

Although the best proof of the American industrial might, Liberty ships in fact have deep British roots, with their origin dating back to the 19th century. By American standards they were completely obsolete. Even so, the Liberties became not only a mighty weapon, but a crucial factor in the Battle of the Atlantic. German Blitzkrieg proved disastrous to the Allies not only on the battlefields throughout Europe but also on the sea routes. From the very beginning of World War II Admiral Dönitz's submarines were destroying Allied merchant ships in horrifying numbers. Sailing without escort, these poor merchantmen were just sitting ducks for the U-boats. The most disastrous month in the Battle of the Atlantic was May 1941 when U-boats sunk 125 merchant ships.

For British shipyards naval vessels were of the highest



Figure 1.
The first Liberty 'Patrick Henry' on trials in December 1941.

importance and cargo ships were built at such a low rate that their losses by the hundreds couldn't be replaced. In September 1940, the United Kingdom asked for American assistance in building replacements. The British mission arrived to Washington with the blueprints of general cargo vessel 'Dorington Court' built a year earlier by the Sunderland shipyard of J.L. Thompson & Sons Ltd. It was a standard British steamer, based on a design dating back to 1879, 134.5 meters in length overall, 17.4 meters in breadth, with cargo capacity of 10,500 tons and powered by a triple-expansion steam reciprocating coal-fired engine of only 2500 HP. So her maximum speed was under 11 knots.

The Chairman of the United States Maritime Commission, Admiral Emory Scott Land, was disappointed with British proposal: 'Dorington Court' was just a ship of a bygone era. Reciprocating steam engines, coal firing, extremely slow ship... All long forgotten in America. But that was only part of the problem. A much bigger headache was the fact that America had no shipyards in 1940! After the mass production of emergency cargo ships during World War I, mainly the Hog Island type standard

Maritime journalist and publicist

E mail: marijan.zuvic@st.t-com.hr

freighters, the United States abruptly ceased building its cargo fleet and closed its shipyards. Over an incredibly long period of 15 years, between 1922 and 1937, only two general cargo ships were built in America!?

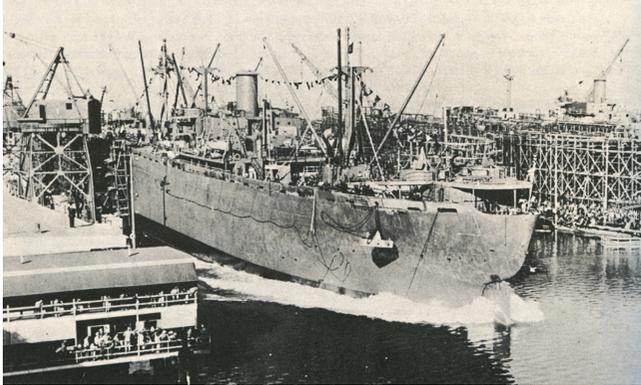


Figure 2.
Record breaker – launching of 'Robert E. Peary' at Richmond.

Nevertheless, willing to help Britain, the Americans accepted an order for 32 vessels based on the 'Dorington Court' design and named Ocean type. But first they had to build two 'green field' shipyards: Todd-Bath Iron Shipbuilding Corp. at Portland, Maine and Todd California Shipbuilding Corp. at Richmond, California. The first of these vessels, 'Ocean Vanguard' was launched on October 15, 1941 at Richmond. After accepting additional orders, the Americans finally built 60 ships.

The escalating war impelled the United States to prepare its own merchant ships for the upcoming hostilities. Since this emergency fleet required urgent action, the Americans reluctantly accepted Ocean type as the basic design for their own mass production, making many significant changes and modifications along the way. The split superstructure was replaced by a compact one, making space for additional cargo hold and the second mast in the forward section. Antique steam reciprocating engine of only 2500 HP remained, but coal was replaced with oil. The choice of an old but simple engine proved to be the best! During the war, the severe shortage of skilled engineers became an enormous problem but steam engines of 2700 Liberty ships could be easily maintained by hastily trained crews.

At 18 locations in the United States brand new shipyards were built. All in all, 210 building berths emerged on the Pacific coast from Oregon and Washington to southern California, Atlantic coast from Maryland to Georgia and the Deep South, in the Gulf at Alabama, Louisiana, Texas and Florida. In inland America, hundreds of miles from the coasts, the

complete industry was prepared for the enormous needs of mass production. Simplicity and adaptability were the motto of the Emergency Fleet Program.

All ship's sections, parts and equipment, over 30 thousand components, were adapted to prefabrication, transported by railroad to the yards and assembled in the shortest possible time. It was said that these new shipyards were merely assembly plants for ships. So it was noted that these revolutionary new shipyards lacked the regular shipbuilding tools and equipment! Furthermore, all parts of the future ships were adapted to welding. All European and Japanese shipyards relied on riveting and welding was rarely used, especially on ocean-going ships. The American experience with welding was likewise scarce, but it was the only way to build such a huge fleet in an extremely short time.

The shipbuilding stage was ready for the grand opening! The keel for the very first of the new emergency ships was laid on April 30, 1941 at Bethlehem-Fairfield Shipyards Inc. in Baltimore, Maryland. Five months later, on September 27, the vessel named 'Patrick Henry' was launched. Admiral Emory Scott Land announced the formation of the Liberty Fleet and that date was declared Liberty Fleet Day. It is generally accepted that they were nicknamed 'The ugly ducklings' by the late US president Franklin Delano Roosevelt. The truth is that Roosevelt was so disappointed with the ship's appearance that he called Liberty 'A dreadful looking object', and the Time magazine introduced the less scary nickname - 'The ugly ducklings'.

'Patrick Henry' was under sea trials for only 245 days after



Figure 3.
Sideways launching of 'William Crompton' at New Orleans.

keel laying, an incredibly short time, especially having in mind that Liberties were among the biggest general cargo ships of their time. Their dimensions were: length overall 134.6 meters



Figure 4.
Wartime scene: 'Hoke Smith' carrying supplies.

(441 feet), length between perpendiculars 417 feet, breadth 17.4 meters, depth 11.38 and draught 8.46 meters. Liberties were measured at 7.176 gross register tons, 4.380 net register tons and 10.865 tons deadweight. The total capacity of three forward and two aft holds was 562.608 cubic feet of wheat or 499.573 cubic feet of cargo in bales. On the main forward mast there were four 5-ton derricks and a 30- or 50-ton boom. Second forward mast had two or four 5-ton derricks. The aft mast was equipped with four derricks and a 15- or 30-ton boom.

Almost unbelievable building records were set and surpassed again and again. On November 12, 1942 at Yard No.2 of Permanente Metals Corp. at Richmond, California a modest ceremony marked the launching of the Liberty ship 'Robert E. Peary'. But it was the greatest shipbuilding achievement in history: she was launched only four days, 15 hours and 29 minutes after her keel had been laid! Being fully completed, 'Peary' left shipyard three days later. Even without such records, the average time of construction for all 2.711 Liberties was the incredible 62 days.

The construction of the Liberties peaked in 1943 and 1944. Victory against the German submarines and the significant reduction of the number of lost merchant ships allowed the American shipyards to turn to sophisticated cargo vessels. The best known of these are the fast turbine-powered ships type Victory.

Even so, the construction of the Liberties continued. The very last vessel, 'Albert M. Boe', was delivered in October 1945 by Permanente Shipyard at Portland.

A total of 2711 Liberty ships were built. The overwhelming majority were ordinary Liberties type EC2-S-C1. But what does this cryptic writing mean? That was the United States Maritime Commission's official mark in accordance with the Classification system introduced in 1936 under the Merchant Marine Act. The letter E was allocated exclusively to the Liberties, meaning Emergency. C2 is a mark for Cargo ship of length between 400 and 450 feet, while letter S represents steam propulsion. C1 is a designation of a particular type of modification.



Figure 5.
Standard Liberty: Croatian owned 'Cavtat' in the dry dock.



Figure 6.
Liberty collier ship 'Hajduk' of Croatian company Jadroslobodna.

During the last months of 1942, the demand for tanker tonnage raised dramatically and the United States merchant fleet was unable to keep up. The mass production of Liberties and all kinds of naval vessels left no space for tankers in the American shipyards for a long period of time. So an emergency solution appeared: the Maritime Commission approved the construction of 62 Liberty tankers type Z-ET1-S-C3. Nine tanks were installed in cargo holds and five ballast tanks in the double-bottom were also used for oil transportation. Cargo pumps and other loading/unloading equipment were of the 19th century design. In spite of being quite primitive by the tanker standards of the time, these vessels were a great relief.

As the German submarines had orders to sink tankers first, the emergency tankers kept the original appearance of the standard Liberty cargo ships. Masts, derricks, winches and other equipment successfully fooled U-boats and not a single tanker was lost. After the war, the entire fleet proved antiquated and Liberty tankers were converted into general cargo ships, mainly by the Japanese yards. The new 51-meter forward cargo sections were inserted so that deadweight capacity was increased to 12.000 tons. A part of the rebuilt Liberties received a third forward mast.

In the spring of 1945, the Delta Shipbuilding Corp. of New Orleans received an order for two dozen completely different

ships - a Collier type Liberty. Officially marked EC2-S-AW1, these vessels were intended for the American coastal coal trade from Hampton Roads, Virginia to Boston, Massachusetts. Only the bare hull preserved the original dimensions and appearance. The bridge was located amidships and the engine-room far aft. Its cargo capacity was 11.047 tons.

Liberty ships proved suitable for all kinds of rebuilding, especially for military transport. 36 ZEC-S-C5 type ships were designed for the shipments of boxed aircrafts. Other Liberties included six hospital ships, eight specialized tank carriers, 13 animal transport vessels for Army horses and mules... The most numerous were the Liberties used to carry troops: 37 were built as genuine troopships and 195 were only temporary and primitively equipped for the transportation of soldiers.

The largest number of the Liberties came from the Bethlehem-Fairfield Shipyards Inc., the builder of the 'Patrick Henry'. 385 vessels were built by the end of 1944, when the Baltimore yard focused on the mass production of the Victories. California Shipbuilding Corp. of Los Angeles had the second largest output with 366 Liberties built. Top builders were also Permanente Metal Corp. - Yard No.2 of Richmond, California (351), Oregon Shipbuilding Corp. of Portland (322), New England Shipbuilding Corp. of Portland, Maine (244), Todd Houston Shipbuilding Corp

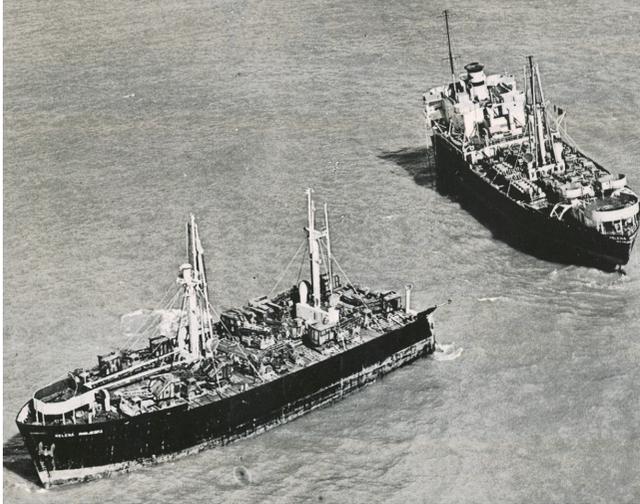


Figure 7.
Troubles with welding: 'Helena Modjeska' split in two.

of Houston, Texas (208) and Delta Shipbuilding Corp. of New Orleans, Louisiana with 188 Liberty ships delivered.

From the very beginning of the Emergency Fleet Program, Admiral Land and his associates considered the Liberty ships weapons, just like the Sherman tanks or B-17 bombers. Their purpose would be fulfilled by a single voyage with 10,000 tons of military supplies. But the Liberties proved very tough and only 155 were lost to enemy actions. The loss rate of 5.7 percent exceeded the most optimistic expectations by far.

The majority of the Liberties were armed with one or two 4-inch guns (102 mm), mainly obsolete and rarely used in actions. But 'Stephen Hopkins', with a single aft gun, entered the history on September 27, 1942 in the battle with the German commerce raider 'Stier'. The Liberty was sailing from Cape Town to Suriname in the dense fog of the Atlantic when she encountered the German ship. 'Hopkins' was disastrously over-gunned, as 'Stier' was armed with six 5.9 inch guns and numerous small weaponry. Even so, in a fierce close range battle, a single-gun freighter damaged the German auxiliary cruiser so heavily that it was abandoned by its crew shortly after 'Stephen Hopkins' sunk.



Figure 8.
'Hellenic Star': One of 106 Liberties sold to Greeks.



Figure 9.
The last years: standard Liberty 'Edenbank' battered by sea.

Under wartime conditions, the Liberties were endangered not only by the enemy but also by their poor welding. The extremely short construction time, the lack of experience with welding, the absence of proper quality control prior to delivery due to the urgent need for new ships proved to be a dangerous combination. The brand new Liberties met with all the temptations of gales and storms and freezing waters of the Atlantic. The problem of poor welding emerged and the Liberties fell apart at open seas by the dozens. After urgent improvements were made, the falling apart of the ships became a rarity.

At the end of World War II, there were more than 2500 Liberties in service. Being absolutely obsolete for American peacetime needs, these ships were warmly welcomed by the merchant fleets of the Allied countries that suffered heavy war losses. During the war, 198 Liberties were allocated to the United Kingdom under the Lend-lease Act. Under the same Act, 39 ships were allocated to the Soviet Union. In 1945 these ships were offered for sale and Britain purchased 106 Liberties. The Soviet

Union didn't react to the offer: lend-leased ships were neither purchased nor returned to America!

One hundred and six Liberties were sold to Greece, as its cargo fleet was devastated during the war. France was allowed to buy 75 ships, Norway 24 and China 18. Italy, a former foe and now a friend, purchased exactly 100 ships. In the first post-war years, the American companies used a large number of the Liberties to ship relief cargoes to Europe, but in the end, the majority of these ships were returned to the US Government. Hundreds of Liberties became part of the United States Reserve Fleet, being mothballed in the anchorages all across America. Some were reactivated to serve in the Korean and later the Vietnam War.

Having such an enormous fleet available, the Americans used the Liberties for all kinds of duties and experiments. 'John Sergeant' entered the history of shipping in October 1956 as the first gas-turbine powered ship to cross the Atlantic. Liberty ship 'Charles H. Cugle' was converted into the first floating nuclear power plant in the world named 'Sturgis'.



Figure 10.
Liberties at Sveti Kajo scrapyards near Split.

But the late 1960s marked the end of the era of the Liberty ships. Hundreds were stricken from the US Reserve Fleet and sent to the scrapyards. Exactly the same happened to the Liberties serving on worldwide merchant routes. Being created for wartime needs, they had no chance in the competition against a vast fleet of modern ships from the Japanese and European shipyards. As many as 42 Liberties met their end at the Brodospas shipbreaking yard at Sveti Kajo in the vicinity of Split. Greek steamers 'Alexandros Koryzis' and 'Georgios F. Andreadis' arrived there in the summer of 1985 as the last Liberty ships to be broken up in Europe.

The story of the Liberties didn't end with their disappearance from the sea routes. Their role in shipping was so strong and important that shipbuilders around the world raced to offer ships called Liberty Replacements. Japanese shipbuilders were pioneers in the development of standard ships designed for mass production, being easier and cheaper to build and use.

The most successful was type Freedom built by Ishikawajima Harima Heavy Industries (IHI), but a brainchild of Canadian ship designer G.T.E. Campbell from Montreal. The very first of these new Liberties, the 'Khian Captain', was delivered to the Greek ship-owner Carras on July 21, 1967. IHI yards built 176 ships, but the Freedoms were also built in Spain as Freedom Hispania. Also for IHI, the Canadians later designed a Liberty Replacement called type Fortune, 62 of which were constructed. Standard ships were designed and built by many other Japanese yards, including Hitachi, Mitsui, Mitsubishi and NKK.

At the same time, the British developed a highly successful type SD 14 Liberty Replacement. The great majority of the 211 of these ships were built by the two neighbouring shipyards at Sunderland: Austin & Pickersgill and Bartram & Son. It is interesting that 'Nicole', the first ship from A&P, was delivered on February 14, 1968 and 'Mimis N. Papalios', the first from Bartram, on the following day. SD 14 type ships were also built under licence in Greece, Brazil and Argentina.



Figure 11.
'Khian Captain' – the very first of Liberty Replacement ships.

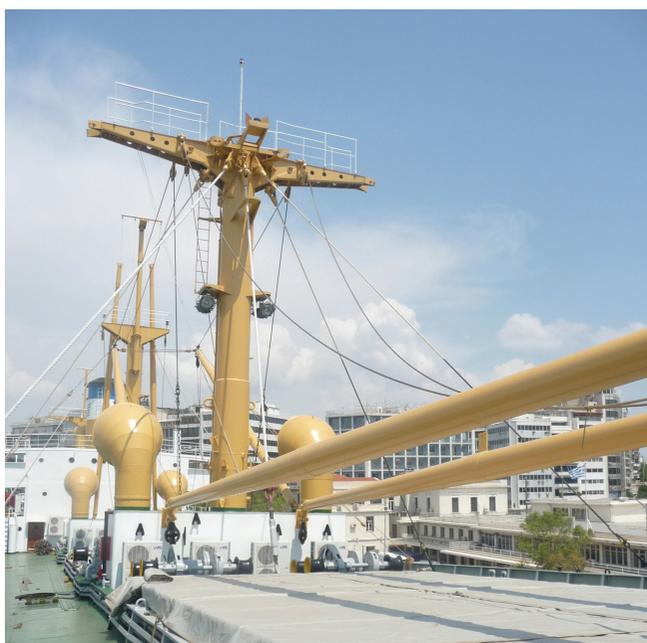


Figure 12.
The deck of a museum ship 'Hellas Liberty'.

The German shipbuilders had an important role in the creation of the Liberty Replacement fleet. The best known German Liberty was built by Flensburger Schiffbau, Bremer Vulkan and Rickmers Werft. The first of the 52 ships, 'Dirk Mittmann', was delivered in Flensburg in May 1968. A.G. Weser Company designed and built 61 standard ships of the Seebeck 36 type. Belgian shipyard Cockerill offered type Unity, but only eight ships were built, including six for the Croatian owners.

Today, 70 years after the Emergency Fleet Program, only three Liberty ships survive. Fully restored and still sailing are 'Jeremiah O'Brien' and 'John W. Brown', both under the US flag. 'Jeremiah O'Brien' is stationed in San Francisco, California and 'John W. Brown' in Baltimore, Maryland, not far from the location of the shipyard in which she was built in 1942. The third vessel afloat is not sailing. To commemorate the importance of Liberty ships to the national merchant fleet, the Greek shipping community purchased Liberty ship 'Arthur M. Huddel' in 2008. Being abandoned for years and in a derelict condition, she was completely refitted, christened 'Hellas Liberty' and has been moored at the Piraeus old port as a floating museum since June 2010.



Figure 13.
Still sailing: 'Jeremiah O'Brien'.

Notable books on the Liberties:

L.A. Sawyer, L.A., Mitchell, W.H., (1970), *The Liberty Ships – The History of the Emergency Type Cargo Ships Constructed in the United States During World War II*, 1st edition, Newton Abbot: David & Charles Ltd.

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Bunker, J.G., (1972), *Liberty Ships – The Ugly Ducklings of WW II*, Annapolis, US Naval Institute Press

Elphick, P., (2001), *Liberty – The Ships that Won the War*, Rochester, Chatham Publishing Ltd.