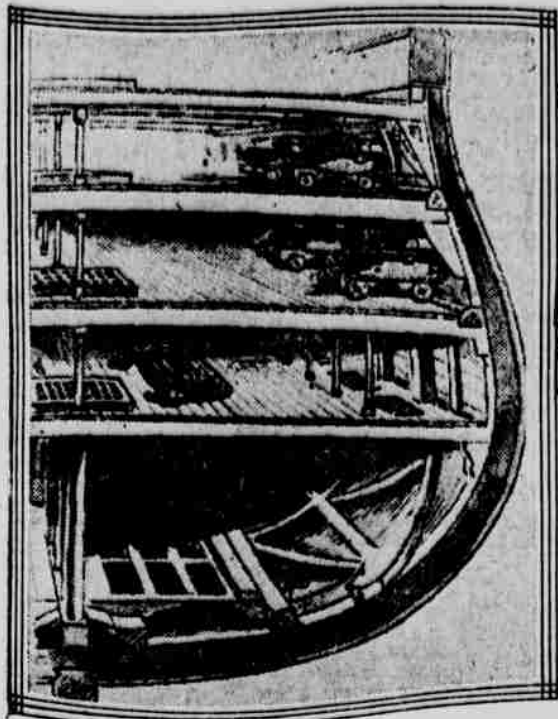


The Beginning of War Machines for the Navy



Wooden Ship Showing the Different Decks



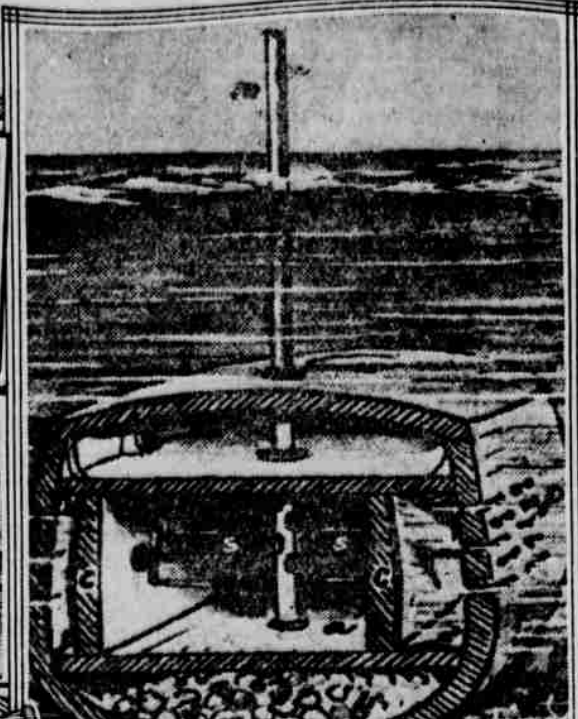
Mines Across a Channel—Civil War



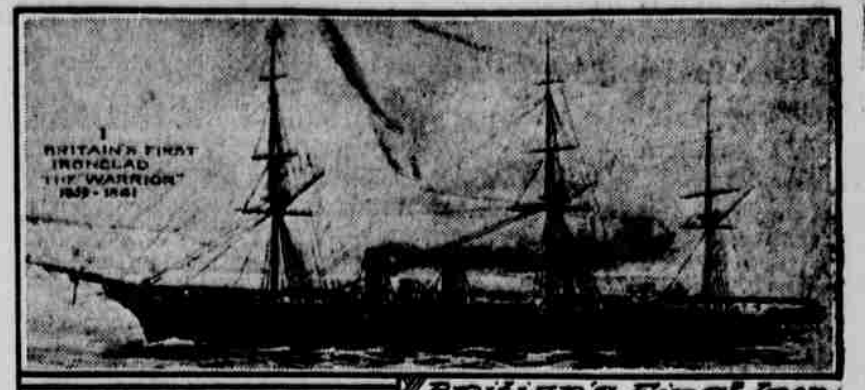
14th Century Breech-Loading Cannon



Spar Torpedo



Drawing of First Submarine, 1578



Britain's First Iron-Clad, the "Warrior"



Submarine Mine 1863

The Evolution of Small Stone Projectiles Hurling From Catapults Into a Huge Torpedo—How the Roman Galley Rowed By Men Has Been Evolved Into the Giant Dreadnaught.

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WHILE it is natural to suppose that man engaged in warfare against his fellow man on land long before he fought battles on the sea, yet almost as far back as history has any authentic records, it is known that there were naval conflicts with small crafts and simple implements of war.

Rowed By Men.

Amongst the earliest fighting vessels of which we have any record are the Egyptian galleys of Rameses III, 1200, B. C. These vessels were propelled by oars operated by rowers with sails as an auxiliary power and steered by means of oars or paddles situated aft on each side.

In later years galleys having from two to five rows or banks of oars were made. The fighting men were stationed on a platform above the head of the rowers, a forecastle being erected at the stern, above the level of this platform, to accommodate the catapults and other "ordnance." The archers were also stationed on these, whilst the slingers or stone casters occupied the top.

The Roman galleys carried a "corvus," an ingenious "landing" device, in the shape of a long gangway hinged

to the bottom of the mast and lashed to it in a vertical position until the enemy vessel was reached, when the gangway was allowed to fall on the enemy's deck to provide a passage for the attacking force, whilst the spike or beak, projecting from the underside of the board at its outer end, embedded itself in the enemy's deck.

Beginning of British Navy.

The first British attempt to provide a navy was made by Alfred the Great, toward the end of the ninth century. About this time England was bothered by the incursions of the Danes. During the reign of King John a number of English warships destroyed the French fleet at the battle of Damme, in 1213. Four years later an English fleet again defeated the French, the victory being due to the fact that the English fleet threw quicklime at the enemy's sailors and blinded them.

The introduction of steam power in 1832 caused a great change in naval design and paddle steamers were built but these were only moderately successful. In 1843 the first screw-propeller was built, but it was five years later that the screw was applied to the line of battleship. Although satisfactory iron ships were built in 1832, iron was not adopted by the Naval

authorities for fighting craft until 1850, when wooden beams in certain warships were replaced by iron.

Explosive Shell.

Russia is responsible for the explosive shell, and used them first against the Turkish vessels in 1854. Armored vessels came into existence as the result. The La Gloire, built by the French, was the first sea-going iron-clad vessel. Great Britain followed with the Warrior, launched in 1860. But these vessels were protected by iron-side armor, about four and one-half inches thick. It was found by experiment that the most powerful gun used at that time could not penetrate it. The Warrior carried a crew of 700 men and cost \$1,600,000 to build, a small sum when compared with the \$17,000,000 cost of the modern battleship.

In later years steel took the place of iron, the hardened steel being double in its resistance to shells. The American Civil War led to the production of a vessel of a peculiar type known as a monitor. Two or more heavy guns were mounted on a revolving turret of heavily plated armor. The vessel itself had a very low freeboard and was unsuited for high sea-work, and was built to be used on river estuaries. The hull was so deeply submerged as to be fairly safe under gun fire.

Naval Guns And Armor.

From 1875 to 1889 the power of guns increased more rapidly than the resistance of armor, and as the result vessels were built in which the central turret containing the guns was pro-

tected with armor 24 inches thick whilst the bow and the stern were left unprotected. This unsatisfactory method was discontinued about 1889, when hardened steel plating so reduced armor weight that it became possible for a vessel to carry adequate protection.

Whilst arrows and spears were thrown by the fighting men on war vessels as early as 100, B. C., the beginning of naval artillery came much later. The advent of the cannon early in the fourteenth century may be looked upon as the start of this branch of warfare, although the catapult for throwing stones was used long before this period. The Venetian Navy used cannon at sea in 1380. The barrels of these cannon were made of hooped iron. Early in the fifteenth century it became necessary to arm merchant vessels, and the old type of cannon known as Bombards were used.

During this century a French inventor hit upon the idea of mounting guns on other decks at port holes. At first the port holes were circular and only a little larger than the guns. These were found unsatisfactory, as the gun had to remain in a fixed position so the circular port holes were superseded by oblong ones.

During the reign of Henry VIII, naval artillery in England had reached such a perfection that the Venetian Ambassador informed his government that the English King

"had cannon enough to conquer hell." In the days of Lord Nelson the largest gun in common use at sea was the long 32 pounder carried by the "Victory" on her lower deck at Trafalgar. This gun consisted of a simple cast iron tube mounted on trunnions fixed to a wooden carriage. The gun muzzle was lowered by hand spikes inserted below the breech and retained by wedges driven under the breech and at any desired elevation. When the gun was to be trained on a particular object the carriage was moved bodily, the recoil being kept within bounds by a cable passing through an eye at the breech of the gun the ends of which were fastened to the sides of the vessel. The gun was loaded from the muzzle and fired through a touch-hole near the breech.

Liquid Fire.

More than 100, B. C., the Rhodians attempted to fire hostile vessels by means of caldrons of burning material carried at the end of spars from the bows of their ships, and even as late as 1809, Lord Cochrane used fire ships in his attack on the French in the Basque Roads. In this instance the hold of three little vessels, known as fire ships were filled with powder casks and sand covered with heavy timber, which was again covered with hand grenades and rockets. In 1672 fire ships played an important part in the Dutch War, when the English and French ships had fire-

ships provided with huge caldrons carried at the ends of hinged masts or derricks by means of which the fire caldrons' position could be adjusted so as to bring it into contact with the most inflammable part of the vessel attacked. Great fire balls composed of chemical substances, which when set on fire could not be quenched by water were thrown on the decks of the enemy's vessels. On shore the forts were equipped with catapults for shooting liquid fire on the decks of the enemy's vessels which approached the shore. These streams of fire produced a gas which made men insensible and frequently killed them, so after all poisonous gas is centuries old.

Submarines, Torpedoes And Mines.

As far back as 1578 inventors thought of submarines and a curious under-water boat was built by Demus Papin, in 1690. It was not a success and although many attempts were made it was not until David Bushnell's Turtle, in 1776, tried to blockade the British fleet on the American coast, that this type of vessel was fairly successful. This machine seems to have been the ancestor of the mine as well as of the submarine for it was arranged so that a mine could be exploded under the enemy's ship. Another early submarine was the one invented by Robert Fulton, in 1801. It was propelled by hand and was fitted with diving planes aft. It was filled with a detachable spike, which

was to imbed itself in the bottom of the enemy's vessel. A mine was attached to the spike and as the submarine drew off the mine was pulled up to the spike and exploded. The French submarine Le Plongeur was built in 1863, and was driven by compressed air. The Holland craft to be operated by one man was built in 1875. A few years later scientists improved on these crafts and the evolution has resulted in a terror of the sea, which has finally drawn the United States into the great war of nations of today.

The torpedo is the grandchild of the mine. A projectile hurled from a catapult from the decks of vessels in ancient times. The first mention of it as a weapon in history, occurs in 1585, when an Italian engineer partly destroyed a bridge across the Scheldt, at Antwerp, by means of small vessels, each carrying a considerable quantity of gun powder which was exploded by clockwork. Nothing more was heard of the torpedo until 1730, when a French scientist made some experiments with rockets under water with which he destroyed several boats. During the Civil War in America the torpedo came to the front as a serious weapon and from that time up to the present these under water projectiles have been made more deadly each year and more accurate in their aim.

With the use of the torpedo came the need of a small vessel to carry it and the torpedo boat came upon the scene. So small are these boats when compared with battleships that the fight between the two is a veritable David and Goliath battle. The first torpedo boat was built in 1871 and attained the speed of 16 1/2 knots per hour. The torpedo used by this craft was towed by the vessel, the tow line being tied to the funnel. In 1875 the Austrian and French armed their torpedo boats with spar torpedoes, but these were only moderately successful. The next war craft on the water was the torpedo boat destroyer. They were designed to catch and destroy the enemy's torpedoes, but they have never been particularly successful—gun fire from a battle ship being regarded as about the only way to set a torpedo boat either submarine or surface boat.



A Stirring March From a Band at the Head of the Column Makes the Long Journey Lighter

Tunes Which Our Boys Will Take Across the Seas With Them—Old Favorites Still Popular—Stirring Songs of the Marine Corps—Army and Navy Marches and Ditties.

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A GROUP of officers in embryo from the Fort Myer Officers' Reserve Training Camp walked into a Washington restaurant one evening. The spirit of gaiety possessing them they sang this ditty to the rhythmic rapping of flats on table and sticks on floor:

God help Kaiser Bill; God help Kaiser Bill;
Uncle Sammy he gets the infantry,
He gets the cavalry,
He gets the artillery.
Then, we all go to Germany.
God help Kaiser Bill.

It was simply one of the rhymes which had sprung up spontaneously to fit and fill some particular time and tune, but in a day the whimsical bit of nonsense had made itself one of the songs of the soldiers.

Our Fighters Select Their Own Songs. Thousands of patriotic and sentimental war songs have been placed upon the market since the commencement of the present war, but a very small proportion of them are adopted by the military man. The American Army and Navy and Marine Corps make no rules for the musical guidance of their men, as do some European countries, but let them choose their own songs for march and campfire.

It was because of no hard and fast musical direction that Tommy Atkins picked up the music hall song "Tipperary," and made it the war song of the British soldier during the first year of the conflict. It is still sung by the men abroad, but others have become nearly as popular. A British weekly which devotes a column to printing soldiers' requests for gifts which will add to their comfort or pleasure, has of late, contained more requests for "Keep the Home Fires Burning till the Boys Come Home," than any other song. This song was

composed something over a year ago by Ivor Novello, the twenty-two year old English composer, who is one of a group of Britons who have gone to the foreign fields to entertain the soldiers in their leisure hours. He noted the lack of some present-day song, which appealed to the sentimental longings of Tommy, and tried to fill this need by an original composition. The song seems to have fulfilled its mission as not only has it been used by the thousands of English soldiers, but it has been translated into six languages and is heard all through the trenches and camps of the Allies. The tune itself is so easily caught that it makes a bid for instant popularity and the words strike home to the heart of the men in the trenches. The chorus tells the story:

Keep the home fires burning,
While your hearts are yearning;
Though your lads are far away they dream of home.
There's a silver lining
Through the dark clouds shining;
Turn the dark cloud inside out till the boys come home.

Lieutenant Wm. H. Santelmann, leader of the United States Marine Band, the foremost military band in the United States, was interviewed in regard to what songs the American fighting men would take with them across to camp and foreign field. In reply to the question he said: "They will take with them their own fine patriotic songs, first and foremost of which is the 'Star-Spangled Banner,' the accredited national song of this country. Then will come 'America,' 'Columbia, Gem of the Ocean,' and other purely national and patriotic songs. Strange as it may seem, the Civil War songs have never lost their popularity among the soldiers, and they will be sung on the march today by our men as frequently as any others. The tune of

'John Brown's Body,' whether sung to its original words or to those more fitting, in Julia Ward Howe's 'Battle Hymn of the Republic,' with its stirring 'Gloria, Gloria Hallelujah!' chorus is as popular a marching song today as ever it was. So is that fine song, 'The Battle Cry of Freedom.' 'When Johnny Comes Marching Home Again' is still sung today, as is the quaint old air, 'The Girl I Left Behind Me.'

Old-Fashioned Favorites.

"American boys, especially those from the South, all like 'Dixie,' and they are very partial to the old plantation songs, 'Old Kentucky Home,' 'Old Folks at Home' and 'Maryland,' and they all make good marching songs. After these old-fashioned favorites, the boys choose a few of the most popular of the songs of the day, making the selection largely as to their needs and conditions. "The song of this character used in the Spanish-American war was, 'There'll be a Hot Time in the Old Town Tonight,' and it was sung on every possible occasion. It has spirit and is good to march to. It will probably be found in this war that the soldiers will make an exchange of songs with the men on the other side, and our men will likely come back with an acquisition of English and French favorites." As to battle marches Lieutenant

Santelmann declared that none in any country were finer than those by John Philip Sousa. "They are popular in every land," said he, "and in every arm of the service. Sousa is literally the 'March King' in every sense of the word. His latest march, 'Pathfinder of Panama,' is one of his best, and is very popular as a war march today. His 'Semper Fidelis' is the march of the United States Marines, and is used by them on all formal occasions."

Lieutenant Santelmann referred with interest to the fact that Sousa has volunteered his services to train several bands for the United States Navy and has enrolled as a Lieutenant in the Naval Reserve Corps in this purpose. The great bandmaster proposes to secure from publishers and friends a "carload" of music for the boys in the war.

sung by the Marine Corps on many occasions. It recounts in stirring lines the deeds of Uncle Sam's splendid "soldiers of the sea" from earliest to latest victories, and is worthy of preservation. Following is the first verse:

From the Halls of Montezuma,
To the shores of Tripoli,
We fight our country's battles
On the land as on the sea.
First to fight for right and freedom
And to keep our honor clean,
We are proud to claim the title
Of United States Marine.

The Marine Corps is rich in songs written for its especial use, and many of them have been adopted. Some of the best have been composed by the amphibious warriors themselves. The spirited "Chanson of the United States Marines," by Corporal Percy Webb, U. S. M. C., has as its subject the staunch motto of the corps, "Semper Fidelis." Its first verse is as follows:

There is a motto bold,
Written in letters gold,
Blazoned on every fold,
Loyal and zealous
On that proud flag we bear,
Peerless beyond compare,
Borne with us everywhere,
Semper Fidelis!

A Real Marine Corps Song. "The 'soldiers of the sea' have been

WAR SONGS of Our Soldiers and Sailors



Lieut. William H. Santelmann, Leader of the U.S. Marine Band PHOTO EDINOSTON



The U.S. Army Relieves the Difficulties of the Most Arduous Marches by Singing

In Leisure Moments Jackie Often Breaks Forth Into Song



The Navy Boys are Fond of Singing as they March

the inspiration of countless poets and songwriters and the men themselves have taken kindly to many of them. For a number of years "The United States Marines," which is one of the songs of the corps has been published as anonymous. Since the verse has been recently republished a number of times it develops that it is the production of a Washingtonian, the late Maurice Brown Kirby, who was also the author of "Skipper Schley." The initial verse of the United States Marine gives its tenor:

You kin blow about yer hero volunteer,
An' yer rough an' ready, steady in-
fantry;
You kin sing about yer jackie an' kin cheer

Fer yer neat an' handy, dandy cavalier;
But of all the sojer men I ever knew,
An' of all the sailor men I ever seen,
When there's fun or fuss or fight, the boy to keep in sight

Is Billy Blue, United States Marine.
An' it's hi Billy, Billy, Billy Blue!
We think we've got a little job to do.
We want it started right,
So we put the startin' of it up to you.

"Billy Blue Marine," by Ray I. Hoppman, is another favorite, its first verse as follows:
He's a soldier and a sailor, every inch;
He's a fighter for his country in a pinch;
And the foemen do not figure
When his finger's on the trigger—
He's a "go and get 'em demon," that's a cinch.

Another favorite depiction of the United States Marine, said and sung by its men, is found in Kipling's verse:
An' after I met 'im all over the world,
a-doin' all kinds of things,
Like landing 'isself with a gaiting gun,
to talk to them 'eathen kings,
'E sleeps in an 'ammick instead of a cot,
and 'e drills with the deck on a slew,
For there isn't a job on the top o' the earth
the beggar don't know nor do.

The United States Navy has always fared well with songs, for it has adopted a number of those of England's Jack Tars as well as those written for the American Navy. An English song well advanced in years

which is constantly sung by the sailor boys as lustily as it was twenty years ago is the old familiar, "Nancy Lee," and to hear it voiced today by eight hundred of the men training at Newport, as they march to the accompaniment of the band at their head is as fine a sight and as good a sound as can be seen or heard.

Songs Of Our Sailors. While Jacky likes the popular music hall hits as well as his soldier brother his vocal stand-bys usually have a flavor of the sea, and with him, too, the old songs retain their place in favor. The navy songs in use today include, "The Midshipmite," "Landlord Watch," "A Life on the Ocean Wave," "Rocked in the Cradle of the Deep," "Homeward Bound," "The Anchor's Weighed," "Sailing," "Farewell to Grog," "The Tar's Farewell," and other of their spirit. Later songs, like "Remember the Maine," "A Toast to Dewey," and "Skipper Schley" will also be sung with fervor on the decks of the battleships this summer.

Any one familiar with Annapolis will recognize in "Anchors Aweigh" the favorite chorus of the middies to the attractive march and two-steps composed by a musical director of the United States Naval Academy, Charles S. Zimmerman. Neither are its strains confined to campus or battleships, as the frequenter of Army and Navy football games can attest. There is the verve of real life and youth in the bold ringing challenge:

Stand, Navy, down the field,
Sail set to the sky;
We'll never change our course,
So, Army, you steer shy.
Roll up the score, Navy,
Anchors weigh!
Stand, Navy, down the field
And sink the Army gray.

The "Naval Academy's Graduate Song" is an old favorite to an old tune, which admits of variations to suit current conditions, and another closing day favorite of the Annapolis boys is "God Save America," which is an effective round in five parts. Its patriotic words and resounding notes make an effective ensemble:

God save America!
Bless the United States!
Continue the Union
For ever and ever,
—Amen.