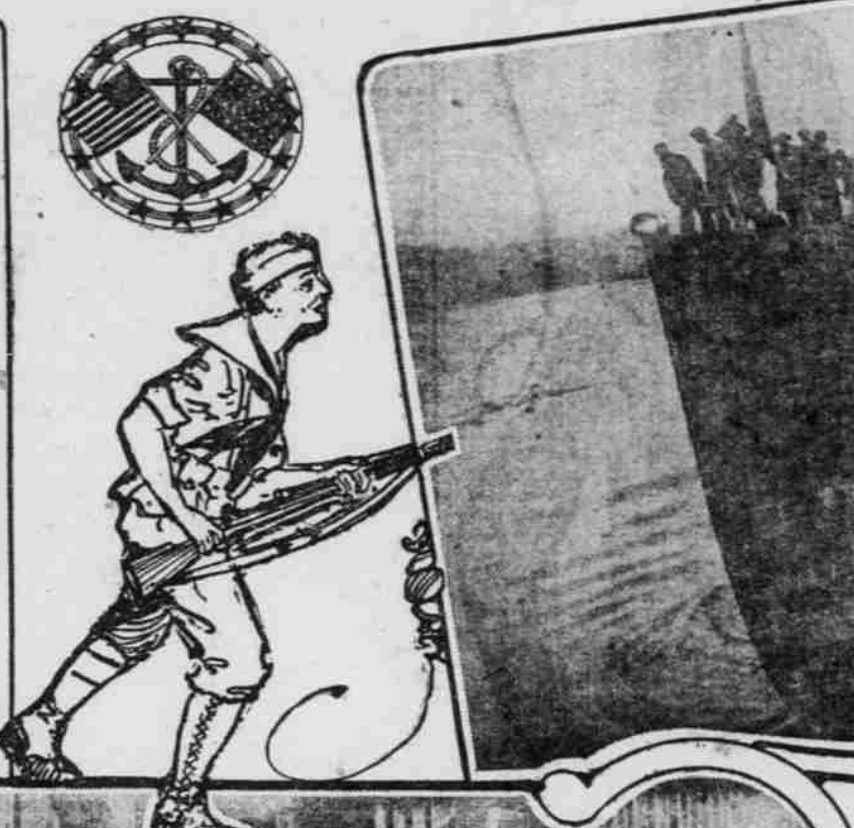


Frank G. Carpenter Describes New Fleet of Destroyers.



Riveting Steel for a Destroyer.

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QUINCY, Mass.—I have come to Quincy to tell you something of what the Navy is doing to protect our mighty bridge of boats across the Atlantic. That bridge already stretches from our country to France, and it is being widened each day. It is a moving platform of steel, concrete and wooden ships rising and falling on the billows of the ocean. The waters it crosses are swarming with submarines trying to break it, and about our only means of protection is the little war vessel known as the destroyer, which tracks down the submarine and blows it out of existence. The destroyer belongs to the Navy, and its construction is under the Navy Department, which has promised that we shall lead the world in this class of vessels within the next year.

Little has been said about the new ships made for the Navy. I am not permitted to give all the details, but Secretary Daniels tells me that we have three times as many naval vessels as when war was declared, and that 300 of various kinds have been contracted for or begun within the past year. We have built new shipyards for this purpose, and have added enormously to the Government establishments already in use. We have been rushing the construction of battle-ships and cruisers and are doing wonders in the various branches of naval construction.

But first I want to say a little more about the destroyer. It is the greyhound of the sea, for it is faster than almost any other vessel that bounds over the ocean. Or might better call it the bloodhound of the Atlantic, for its business is to scent out the submarine and drag it down to death. Or perhaps a still better name would be the watchdog of our transports, for it is responsible for the soldiers' safe arrival in France.

The destroyer guards the ships as they cross the Atlantic. It is armed with guns for attacking the submarine, and it is fast enough to outrun one of the torpedoes when started by a submarine on its message of death. Indeed, the destroyer is known to overtake a torpedo and explode it with a single well-aimed shot. The destroyer has also strangely shaped guns for shooting down charges. These charges are bombs, and they are shot in such a way that they drop in a triangle about the submarine as it lies under the ocean, and exploding, cause its destruction. In some cases the explosion is brought about by a rope attached to the bomb, and the explosion occurs. Other depth bombs have glass bottles, which are made to explode by the pressure of the water, and others, I doubt not, have time fuses which set them off at just the right moment.

The destroyers have also torpedoes which they can send forth against the cruisers or battleships, and they will probably have a five part in the next great naval engagement. Their guns will have but little effect upon the armor plate of the dreadnaught, which is a foot or more thick, but a single torpedo may cause the greatest submarine to sink.

I will not give you the details of the destroyers we are building. All matter concerning them is among the war secrets; but I will say that the average size of the vessels now being built is about 1000 tons, more or less, and that their speed approaches that of a fast express train. They are built for quick action and are the most maneuverable ships in the Navy. Quincy is one of the chief places where the new destroyers are built. It is the headquarters of the Fore River shipyards, which, here and at Squantum, six miles away, are constructing a large part of the new order fixed by the Government. The two plants lie on the south side of Boston Bay near the city of Boston. The big guns of our Navy, if mounted in the Custom-house tower, could easily blow them out of existence. The plant at Quincy is founded upon shipyards which were in existence at the time of the war of the Revolution. The plant at Squantum has risen out of a swamp within a few months. Both are among the wonders of modern shipbuilding construction. Together they are known as the Fore River yards, and they belong to the Bethlehem Shipbuilding Corporation, and are allied to the Bethlehem Steel Company, the billion-dollar corporation, which is now dragging forth iron ore from the mines of Chile, Cuba and the United States and transforming it into destroyers, submarines, cruisers, transports and merchant vessels for carrying food and munitions across the Atlantic. Among its establishments are three enormous shipbuilding plants. One is the Union Iron Works at San Francisco, another the great shipyard at Sparrows Point, Md., and a third the Fore River yards. Of these, the Fore River yards are perhaps the largest. They are the equal, if not the superior, of any other shipbuilding plant in the United States.

Take the works at Quincy. They had been building battleships, cruisers, submarines and merchant vessels before the war began, and at that time

were employing between 2000 and 4000 men. The plant now has more than 15,000, and it is working them in two shifts day and night. As I left the works this evening the whistles for changing the shifts broke out on the air and an army of men and boys poured forth from the yards. They came out by the shops by hundreds, filling the streets from wall to wall, making me think of the crowd at an inaugural procession or the rush to a football game. The space of ten minutes there were something like 8000 men on the streets, while thousands of others were coming back to their jobs. I seemed to be in the midst of an army. Everywhere I looked were husky fellows going to and from work. They crowded the streets, they loaded down the motor buses, and not a few of them mounted their own motorcycles or automobiles to ride to their homes. The scene was impressive. It gave me some idea of Uncle Sam's shipbuilding army which is now en route over the country. That army numbers almost 1,000,000, and some of the most skillful and expert of its trained men are right here at the Fore River yards.

I despair of making you see this big plant at Quincy. It has grown enormously since we entered the war. It has more than quadrupled its force, and at the same time has created the great plant at Squantum, of which I write further on. The men at the plant are now about 80 acres. They consist of a vast network of steel, which rises to the height of a church steeple, and is filled with wonders of every description from the 25-ton cranes that will lift a steam boiler to the minute screws of a submarine.

Some of the single shops are gigantic. I went through one building which is 1000 feet long and 80 feet high. It is a great shell of glass and steel, so large that it could be dropped down over the average city block and hardly touch the roofs of the houses. It was filled with workmen making turbine engines to be used in the submarines. There is another building devoted to foundries and furnaces for casting and molding the working parts into shape, and visited shipyard after shipyard in which there were ships of various kinds under construction.

The shops are right on the water, and the ships are running in from the sea, filled with vessels already launched and now being equipped with machinery. This plant makes submarines, destroyers, oil tankers, and it has made cruisers and big battleships. Its orders for submarines run into the scores, and it has the best time record for building ships of destroyers. In one slip 100 feet wide I saw a large bunch of red submarines. They looked like bloody crocodiles of mammoth size as they lay on the water; and turning my eyes to another slip on the opposite side I saw a lot of destroyers on which they were putting the guns which will hunt down the submarines of the enemy. I made my way in and out through torpedo tubes and other huge parts for ships, and I saw more than 2,000,000 worth of steel just under my eyes.

It was while they were increasing the size of the Quincy plant that Secretary Daniels decided that he must have an enormous fleet of these vessels to combat the submarine. He wanted to build more than 1,000, and the ships had to be built right away. The submarines were destroying our merchant vessels; they were hovering about the transports, hoping to blot out the armies we were shipping to Europe. The Navy Department decided upon a large number of destroyers, and it directed that the best shipyards of the country should be mobilized for the purpose. The heads of the great shipbuilding establishments were called to Washington and asked what they could do. All but one of them said that they could not do more than what they were already doing. The one man who represented the Bethlehem Shipbuilding Corporation, the only man who had not spoken, said that his company would build the remainder, and that within the space of a week it could supply the plans for the construction of the destroyers as required by the Navy.

This was agreed to by Secretary Daniels and one week later came the plans. They provided that one-half of the ships should be built at the Union Iron Works, San Francisco, and the other part at the Fore River yards, which were to be enlarged by a great destroyer plant to be built at Squantum, six miles away. For one month the plans were in the hands of the Navy Department, and then a telegram to the head was received here at Fore River. That was on the 6th of last October,

and on the 7th began what is perhaps the most marvelous feat of quick building construction in these days when vast structures go up almost in a night. I have described the work at Hog Island, where a great fabricator had risen out of a marsh. It consists of the assembling of parts made in other plants. There the work is rough, and much of it goes on out under the sky. The situation at Squantum presented greater physical difficulties. Its work included the making of the parts and putting them together. This all goes on under roof, requiring many acres of great buildings of iron and steel. The material for this purpose was brought in by motor trucks and by railroad and dumped into the swamp. Plank roads had to be built for the motor cars, and railway foundations constructed for the trains. A bridge costing \$200,000 was then built

to connect with the railway system, and long lines of motor trucks and trains of cars were soon dropping earth into the swamp. So much of the fill was brought in by truck that if it were all loaded at once the train required to haul it would reach from New York to Washington and leave some to spare. It was carried at five tons to the truck and fully half of the dry fill was brought in in that way. The amount carried in one month by truck and car was greater than the biggest month's excavation work at the Panama canal.

At the same time 30,000,000 gallons of mud was pumped in from the depths of the sea. Great pumps were forced and the earth was sucked and forced in through pipes so big around that a 300-ton tug could crawl through them. The work went on so rapidly that within several months a space equal to 10 large city blocks had risen to a height of six feet over the swamp. All this was done in the heart of the winter, and a part of the time the thermometer was far below zero.

During the erection of this foundation the buildings were growing up in the midst of the mud and the dirt. Victory village was built for housing the workmen, and thousands of piles were driven down to make the foundation of the building to know that there is so much glass in it that if the panes were fitted closely together they would make a solid sheet covering eight acres, and also that it took 130 tons of putty to fasten that glass to the steel frames. Load the putty on two-horse wagons, cover at 40 feet per ton, the train required to haul it would be almost a mile long.

In this great building you may follow the making of a destroyer from beginning to end. I started in with the mold-leaf, where the patterns of the ship are cut out of great boards, just as you cut the pattern of a dress out of the pasteboard or paper. Each pattern is cut to the exact size and shape of the part of the vessel it represents, and upon it is marked every notch and angle and every rivet and joint. The wooden patterns go into the fabricating shops, and from them are made the steel plates, ribs and other parts which form the great vessels. This is done by clean machinery, by means of steel rollers, and by careful hand-work on the part of expert mechanics.

Some of the parts require a great deal of welding and cutting, and the cutting is done with acetylene flame so bright that it would blind the eyes of the workmen. The welding is done by masks of blue glass between the eyes and the flame. The welding is done by electricity; it takes several thousand ribbed parts to go into the frame of each ship, and the red-hot iron is molded so rapidly that I saw one rib 30 feet long shaped to its place in the hull in just two minutes by my watch.

All of the delicate parts of the de-

stroyer are manufactured in this building, and almost every process of its construction goes on, including the riveting of the plates, by pneumatic machines, through which a gang drives several thousand rivets a day, to the galvanizing of the plates of zinc, which are below the water line. In the galvanizing department I saw one tank in which \$15,000 worth of zinc was boiling and seething. As I looked a crane lifted a steel plate 25 feet long and five feet wide and gently dropped it into that tank. A moment later it was raised, and as it came out it looked like a mirror. It was the color of silver. It did not take one minute to coat it with zinc.

Passing on from one department to another, I finally reached the ways where the parts of the destroyers made in the shop were in course of assembling. There were five vessels under construction, and the keels of five others were ready for use. In the front of each great ship were sliding doors, each 30 feet wide and 40 feet high, so arranged that they could be moved back and the vessels launched into the sea. The whole work of construction is under roof, and after the launching the vessels move about into another great building adjoining, where they are fitted with their boilers, guns and other equipment. This building is now almost completed. It is 600 feet square and covers more than four acres. It will have six docks under roof, being equipped with huge cranes which will lift the boilers into the ships and install the big guns.

But I might fill this paper with a description of mechanical wonders gal-

ling on in these Fore River yards, and still not tell the whole story. The machinery is all of the latest invention, and everything is planned for efficient and speedy construction. The force of men is rapidly growing. Squantum is now taking on 500 new men every week and by the time this letter is published there should be 6000 or 7000 men there making destroyers.

Before the war it took 24 months to build one of these ships, but since then the Fore River yards have constructed one in only a few days. Within a few months, and the Squantum plant will complete its whole contract within less than two years. The manufacture of destroyers began. When in full operation it expects to turn out something like a destroyer a week, and the probability is that it will make more than 1,000 destroyers for the Navy for generations to come. The plant belongs to the United States Government, and as it is over it will be transferred to the Government at a fixed price, or, if the Navy thinks it better, it may be sold by the Bethlehem Steel Corporation.

There is any danger from them, trap them if you can, and shoot them down so accurately at night that even the little weasel can't get to them. Skunks are easily trapped, and the weasel is a very dangerous animal.

The shotgun can be used with good effect and fine sport on the hawk. If you can kill one, hang his carcass up so that other hawks can see their brother's dead body flapping in the breeze, and get warning. The backyard, however, is seldom visited by hawks.

Extremes of weather and sudden changes, flooding showers and long, cold rains, are among the backyarder's most serious troubles. Look for these abnormal conditions in the weather and prepare for them accordingly, so that you will never be surprised. This is a great importance, especially when chicks are very young.

We have not the space here to discuss the large variety of poultry diseases. Cholera, and tuberculosis are among the most familiar and dangerous. These and all other poultry diseases should be studied by every poultryman, and the best remedies and preventions carefully noted.

One thing must be supremely emphasized just here: Keep fowls that are so full of life, that they are immune to disease germs. That is the first principle to be observed with regard to poultry ailments, and the second one is this: Keep the environment of your birds so perfectly sanitary that there will be no occasion for diseases to strike your flock. Every poultryman should count it a disgrace to have sick fowls. In spite of all our efforts, one or two now and then will show unfavorable symptoms.

Quarantine Sick Birds. Instantly. Do not wait a minute. Study the case carefully, and if you are suspicious that it is an infectious disease, kill the sick fowl and burn its carcass. Take no risks. Better burn the whole flock than let them perish, one by one, from wasting contagious disease. Keep your hen house thoroughly ventilated, but always guard against the possibility of cold draughts. Stuff quarters are responsible for much of the weak and sickly stock that is a constant over. Keep your flock in the pink of health by giving them the best and most down-to-date scientific care, and diseases among your fowls will soon pass from your list of troubles.

There is a degenerate form of the human species known as a "chicken thief." In some localities this is a supremely contemptible "thing" is aggressive in a most exasperating fashion. You must be on your guard against the strong arm of the law. Do the best you can, however, with a good padlock that you can buy for half a dollar. The ordinary skunk commands our respect, but this two-legged, human variety is surely one of the most detestable of all the "varmints" that trouble us.

Modern Poultry Culture

EVERY season in the year is a first-class time to look this matter squarely in the face and make the best of it. A scourge of pests of infinite variety is watching day and night throughout the year for a good chance to swoop down upon the farmer, the dairyman, fruit grower, stockman, and gardener. Our backyard winner of the war is sure to have his own battles to fight against these agencies of destruction before he can do much to whip the Huns.

Look the enemy as squarely in the eye as possible, therefore, and plan your campaign with a will to win. Lice are probably the most exasperating and discouraging of all the poultryman's troubles. Give them half a chance and they will defeat every plan you make and every effort you put forth. Lice are the super-curse of every poultry plant, with no respect of persons or places. Many a gallant amateur has gone down to defeat before the little pest attacks, wave after wave, of the murderous millions. But don't give them half a chance. The body louse of the adult fowl is easy to whip if you know how, and the red spider mite is a most deadly creature according to its inches. The beginner who knows nothing about this little guilty blood-letter may get his fowls from the field before he can get his forces organized for successful resistance.

This little beast is "red" because the blood of your chickens is filling him to the utmost, as if to taunt you with his venomous devilry. He does not stay on the bodies of the fowls during the day. He hides in the crevices of the walls and underneath the roost platform while the sun shines; but the insects come, and the birds are well settled for the night, he hastens to make his deadly drive. An enlarged likeness of him shows him to be a monster of murder in miniature. Lice can be exterminated from any hen house. If you have half the persistence that they have you will soon see the last of them. But you must fight, and fight to the bitter end,

or they will drive your venture clear off the premises. Use plenty of the common lice powder, which you can buy at any drug store or supply house. Sprinkle the feathers of the fowls thoroughly with it every two or three days until the pests are abated, and then some more.

Keep the roost platforms well sprinkled with it and see that every crevice in walls and platform is well powdered. Prevention is the best of all remedies. Keep an eagle eye aimed at every smallest corner of the henhouse in order to anticipate the slightest approach of this little king pest of the poultry yard. Have the "dope" placed at every possible runway. You must fight this



WHITE COCHON BANTAMS.

THE Langshan fowl, according to recognized authorities, is a fowl of Japanese origin. Investigators report that it is to be found in its purity in the Langshan district of China, and is there bred in all the colors with which the American fanciers are familiar—white, black, blue and mottled. Importations have been made by fanciers in England, America and Australia. Although, like all Asiatic varieties, the Langshan is noted for heavy weight; it has also made enviable records as a layer. A pen of Black Langshans has been placed in the egg-laying competition in Australia, inasmuch as they were in competition with 99 pens of all varieties of poultry. There is no question that the Langshan is a most valuable breed for

economic purposes. It is very tame and adapts itself to confinement or free range. The fowls are active and their eggs are usually very fertile. Like all birds, the chicks make a strong, vigorous growth and are slow to feather. Females weigh from six to eight pounds and the males eight to ten pounds. These are the weights demanded by the standard for the breed, though many specimens exceed these weights. When crossed with lighter varieties, the progeny makes excellent roasting chickens, and the white variety is preferable to the black because of the absence of dark pin feathers, which are objectionable on prime table stock.

The White Langshan should be pure white, its comb, face and wattles blood red; the legs and bill pinkish white, and the skin white. Its legs are long and shanks sparsely feathered.

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The weasel tribe, including skunks, are mostly night hunters. The weasel himself, however, is the most brazen of all the carnivorous animals. If he chooses your locality as a hunting place he can do you much damage. In most of the states the weasel and