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NEW YORK, SATURDAY, MAY 28, 1904.

The Editor is always glad to receive for examination illustrated articles on subjects of timely interest. If the photographs are sharp, the articles short, and the facts authentic, the contributions will receive special attention. Accepted articles will be paid for at regular space rates.

INCREASING RAILROAD FATALITIES.

The latest accident report of the Interstate Commerce Commission opens with a statement of the number of killed and wounded on the railroads of the United States during the last quarter of 1903, which, in its bald and succinct enumeration of losses, reads not unlike a statement of killed and wounded sent from one of the battlefields of the Far East. There is one striking point of difference, however, and that is that the casualties, although the record covers only three months, far exceed in magnitude the total number of killed and wounded since the opening of the Russo-Japanese war. We give the opening sentence of the report in the exact words in which it describes what is at once a supreme national tragedy and an abiding national disgrace: "The number of persons killed in train accidents during the months of October, November, and December, 1903, as shown in reports made by the railroad companies to the Interstate Commerce Commission, under the 'Accident Law' of March 3, 1901, was 446, and of injured, 3,178. Accidents of other kinds, including those sustained by employes while at work, and by passengers in getting on and off the cars, etc., bring the total number of casualties up to 14,485, or 1,166 killed and 13,319 injured."

We have not the figures for the total number killed and wounded thus far in the eastern war; but we think it is pretty safe to say that the grand total will fall considerably short of 14,485; and, mark you, these statistics cover but ninety days, which is about three weeks' less time than the present duration of the war.

This record for the last quarter of 1903 has certain features which render it distressingly memorable. It includes the worst passenger train accident, judged by the number of fatalities, that has occurred in this country for fifteen years, and it records also six terrible accidents which caused among them 106 deaths and 196 injuries, in consequence of which the present Bulletin contains the greatest number of fatalities of any published since the Interstate Commerce Commission began to gather these statistics. Indeed, the number killed in this three months is more than three times the average number killed during the nine preceding quarters. Only four other train accidents have occurred in this country which have caused as many deaths as that which took place last year in Pennsylvania, when 65 people were killed. One of these occurred in 1888 at Mud Run, Pa., when 66 people lost their lives; another was the disaster at Chatsworth, Ill., in 1887, when 85 were killed; then in 1876, there were 80 deaths by the collapse of a bridge at Ashtabula, Ohio; the other accident exceeding the recent disaster in the number of killed was that at Camp Hill, Pa., in 1856, when there were 66 fatalities. Although the large increase in fatalities during the period now under review was caused by a few extremely disastrous accidents, the huge total for the quarter of nearly 15,000 casualties represents an enormous number of collisions and derailments, 1,832 of the former and 1,179 of the latter, making a total of 3,011 accidents in a single quarter of the year.

The report gives some details regarding the most fatal of the accidents, and the quarter in which the blame is to be placed. From this it appears that the derailment that occurred on the Pennsylvania Railroad, with 65 fatalities, happened to a passenger train which, when running at 45 miles an hour, struck some heavy timbers which had broken loose from a lumber car and were projecting over the adjoining track. The cause of the accident is reported as "carelessness on the part of employes of the lumber yard in not selecting stakes of good quality and size to make the load secure, and failure of the car inspectors to detect this defect." Another collision, resulting in the death of 32 passengers, was blamed to "negligence on the part of the men in charge of both the trains involved." The foremost train, which was behind time, was stand-

ing in the station, and an express was due. The rear flagman waited until he had assisted the passengers to alight before he went back to give warning, and then had only gone back 200 feet before the express was upon him. The engineer of the express could have seen the local train's red lights on the last car at a point 2,800 feet to the rear. Another collision, in which 18 were killed, was due to the fact that, in a heavy storm of wind and snow, a signal light had been extinguished. Here the blame was on the engineer of the colliding train for not coming to a stop to learn why the light was not burning. In two other collisions involving the loss respectively of 17 and 16 people, the first was caused by failure of the brakeman to flag the following train, and the other by the conductor and engineer of a passenger train disregarding the rule to run through a yard with speed under control, with the result that the train collided with a switching engine. And so the record runs, the collisions being due almost invariably to neglect or carelessness on the part of the employes. This would seem to indicate that the fault is to be charged to the human element more than to the materials of modern railroading. Or in other words, if we would seek for the explanation of the enormous excess of accidents in this country over those of European systems, we must look for the explanation more in the temperament of the people than in the character of the roadbed, rolling stock, and regulations.

THE JAPANESE DISASTER AT PORT ARTHUR.

The destruction of a 15,000-ton battleship is an irreparable loss, no matter how rich and powerful be the nation that suffers. Not merely does it mean the absolute loss of property valued at from six to seven million dollars, but it leaves a gap in the defenses of the nation which, for the time being, and indeed for many years to come, must remain unclosed. Particularly is this true of that gallant little fleet of half a dozen battleships to which the initial successes of the Japanese forces are due, and without which not a man or a gun could have been landed upon the Asiatic main. We say this advisedly; and we commend the statement to the serious consideration of that happily limited section of Congress, which would have us believe that the day of the battleship has passed, and the era of the torpedo boat and fast cruiser has opened. A fleet without battleships would be in the position of an army without a base; particularly where the operations are of an aggressive character, and carried out hundreds of miles from a friendly port or dockyard.

When the war opened, Russia, with her fleet of seven battleships, and a numerous complement of armored and protected cruisers and destroyers, backed by the seemingly impregnable naval bases of Port Arthur and Vladivostok—to say nothing of the formidable fleet that was nearing completion in European waters—seemed to hold a practically secure position. The hope of Japan lay in its fleet of six battleships. With remarkable audacity and skill she planted this squadron in front of Port Arthur, where it formed a floating base for the operation of cruisers and torpedo boats, which latter, by a swift dash at the opening of the war, so far crippled the enemy as to give Japan the command of the sea. One immediate result of the Russian reverses was the determination to dispatch the Baltic squadron for the relief of Port Arthur; and from the moment that this was determined upon, it became doubly imperative upon the Japanese admirals to maintain the blockade of Port Arthur and hold the whole Russian fleet with the least possible amount of risk to their battleship squadron, already too small for the gigantic tasks that confronted it during the coming months, and possibly years, of the war. It has been a matter of surprise that Admiral Togo should have conducted his victorious operations with so little loss in ships and men; particularly in view of the fact that Port Arthur is known to contain a numerous torpedo-boat fleet, and that the mining of the waters has been carried out with a recklessness that promised to be as dangerous to friend as to foe. At last the inevitable has happened, and one of the finest of Togo's battleships, the "Hatsuse," has been sunk by one or more of the floating mines with which the waters of the Liao-tung peninsula are strewn. So suddenly did this great ship go down that only 300 out of her crew of 750 were saved. On the same day and within a few hours of this disaster the Japanese cruiser "Kasuga," in a deep fog off Port Arthur, rammed the cruiser "Yoshino," the latter sinking so rapidly that only 90 out of her crew of 300 men were saved. The loss of the cruiser is unfortunate, but it is insignificant compared with the loss of such a magnificent ship as the "Hatsuse," which shared with the "Mikasa" the distinction of being one of the largest battleships afloat in any navy.

The "Yoshino" was a protected cruiser of 4,150 tons displacement and 15,000 horse-power, built in England in 1892. Her speed was 23 knots, and she mounted four 6-inch guns, eight 4.7-inch guns, and twenty-two 3-pounders. Her armored deck was 4½ inches thick, and she carried five torpedo tubes.

The "Hatsuse," built at Elswick in 1899, carried four 12-inch, fourteen 6-inch, and twenty 3-inch guns, and was fitted with four submerged torpedo tubes. She was protected by a belt of Harvey nickel-steel, 9 inches thick amidships and 4 inches at the ends, and her deck was 4 inches thick on the slopes. Her 12-inch guns were protected by 14 inches of armor on the barbets and 10 inches on the hoods. The battery of 6-inch guns was carried in casemates protected by 6 inches of armor. She was practically a sister ship to the "Shikishima." With a maximum supply of 1,500 tons of coal and a trial speed of over 19 knots, the "Hatsuse" was about as fine a sample of modern battleship construction as could be found.

The effect of this double loss will be to revive the spirits of the Port Arthur garrison and fleet, and instill new life into the project of sending the European fleet to the Far East. This, if the Black Sea ships be included, may easily consist of eight first-class battleships, and these with the three that are supposed to be still intact at Port Arthur, would give a preponderance, supposing Port Arthur can hold out for another few months, that must be giving the Japanese government most anxious concern.

RUSSIAN NAVAL GUNS.

BY FRED T. JANE.

Russian guns—the more modern ones, at any rate, which are practically Schneider-Canets—have, like the Belleville boiler and several other products of French genius, the reputation of being "very complicated." This is the verdict usually passed upon them by those whose technical acquaintance with artillery is confined to other types. Like the Belleville, their "complications" upon closer acquaintance turn out to be the result of practical experience, and they are complicated only because novel. Actually, Russian guns are simple enough to work, and the only thing about them puzzling to those of other nationalities is the duplication of safety devices specially provided for sailors whose general average of intelligence is below that of the men of most other nations. In this thing alone do the newer Obuchoff models differ from the French Schneider-Canet pieces on which they are modeled.

The result is some slowing of fire, because before the gun can be discharged, at least two, and occasionally three, safety devices have to be loosed. This is essentially a drawback, regarding the guns as guns, but by no means so when the Russian bluejacket is taken into account. One man is usually detailed to release these safety devices; if he fails, the gun cannot be fired, as there is no contact. All chance of firing with the breech improperly closed is, therefore, avoided by human instead of automatic mechanism. As a Russian sailor is normally liable to be somewhat erratic, there is no question of the advantages secured.

The standard guns in the Russian fleet are as follows:

The 12-inch of 40 calibers; weight, 59 tons; muzzle velocity, 2,500 foot-seconds; muzzle energy, 32,000 foot-tons. This piece has a nominal penetration of 15½ inches Krupp cemented at 3,000 yards with capped A. P. shell, the same as that of the United States Mark III. 10-inch, built for the "Washington" class. It is mounted in the "Retvizan" and "Czarevitch." For the "Borodino" class, a 64-ton 12-inch has been designed, but it is doubtful whether it exists as yet. It has the same velocity (service), but fires a 1,200-pound projectile instead of a 732-pound one, and it has a correspondingly increased energy. The nominal velocity is 3,000 foot-seconds.

The "Poltava" class, the "Sissoi Veliky," and all other battleships carrying 12-inch guns, down to and including the "Sinope," carry a 35-caliber, 12-inch gun. Its weight is 56 tons, its initial velocity 1,942 foot-seconds (service), energy 19,200 foot-tons, shell 732 pounds. It is, of course, an old-type gun. Its penetration is for a 12-inch gun very small. The velocity is poor, and the piece is considerably inferior to the Japanese 12-inch gun. The rate of fire of this piece is slow.

A more powerful piece and a better gun is the 10-inch of 45 calibers, carried by the "Peresviet" class and the "Apraksin" and "Rostislav." Its ballistics are inferior to those of the United States 10-inch Mark III, but it is superior to the "Iowa's" gun, being able to penetrate 13-inch Krupp armor at 3,000 yards. As a gun, it is the finest heavy piece in the Russian service, and its rate of fire and accuracy are both good. It was seriously contemplated a few years since to have this piece only, its results being so superior to those of the 12-inch 35-caliber gun. It weighs 38 tons, and has a velocity of 2,500 foot-seconds at the muzzle. It keeps up the velocity well; but the exact weight of the projectile is not known. It is somewhere about 500 pounds. Velocities of, or over, 3,000 foot-seconds have been accredited to it; but these are merely trial results. Its defect is that the penetration is poor at long ranges, where the velocity drops, and the relatively light projectile tells against it.

The "Gromoboi" and "Bayan" carry a 45-caliber rapid-fire 8-inch gun. Its mechanism is somewhat