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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.

A LONG-DELAYED TRIBUTE.

On Wednesday, April 28th, a fitting tribute was paid in the city of Washington to the man to whose genius is due the present and prospective beauty and dignity of the nation's capital. On that day the remains of Major Pierre Charles l'Enfant were transferred from an abandoned family burial ground on a Maryland farm to their present resting place in the National Cemetery at Arlington. The ceremonies were of a simple character. The body, draped with the national flag, was placed in the rotunda of the Capitol, where a service, attended by the President and Vice-President, the French Ambassador, and a large audience composed of members of both Houses and of the diplomatic corps, was held, after which the remains were carried under military escort to the Arlington burial ground and there interred. No stronger evidence could be given of the need for this national recognition than the fact that the majority of the people of the United States are probably ignorant alike of the name of Major l'Enfant and the important work which he accomplished. It is to l'Enfant that we owe the excellent plan upon which the city of Washington was originally laid out. At the suggestion of Jefferson, this French soldier, who had been identified with Lafayette in the cause of American liberty, was invited by Washington to lay out a city which would form the capital of the nation, and in its plan and scope be suited to the requirements of the republic for all time to come. History tells us that the present scheme was the outcome of a week's sojourn at Mount Vernon, where, with the plans of several cities of the old world before them, President Washington and his French engineer worked out, at least in their broad outline, the plans of the capital approximately as we now know it. It has been asserted that in constituting the Capitol and the White House the two centers for the series of radiating avenues, l'Enfant probably had in mind the plan of Versailles. Whatever the origin of the present plan, there can be no doubt about its success; for, when in connection with the celebration of the centennial of the city, in 1900, a commission of prominent American architects was sent abroad to study the plans of the most beautiful of European cities, they indorsed l'Enfant's plan, and based their recommendations upon its general outlines. Unfortunately, after the work of construction commenced, there was disagreement between the French engineer and the building committee, and he was removed. In spite of President Jefferson's recommendation that he be paid from $2,500 to $3,000 for his services, it was not until 1810 that he was voted $666.66, with interest from 1792, for the work he had done. He was invited by a Mr. Digges to his farm in Maryland, and, after spending some twenty-five years of his life there, he died and was buried in the family burial ground of the Carrolls and Digges. Here the body remained for nearly a century until its recent removal to Arlington. To make this tardy recognition of the important services of the designer of our capital city complete, it will certainly be in order for the nation to erect a suitable memorial above his present resting place.

OUR STUPENDOUS RAILWAY SYSTEM.

In view of the fact that the welfare of the country is so intimately related to the vast system of railways with which it is covered, the annual statistics of our railways, and a comparison of these with the records of earlier years, are of never-failing interest. We have before us the railway statistics of this country as prepared by Mr. Slason Thompson, of the Bureau of Railway News and Statistics, in which the standing of our railways for the year 1908 is compared with their condition in the two previous decades.

At the close of the fiscal year 1908, the total number of miles of lines in the United States was 230,000, as compared with 136,883 in 1888 and 184,648 in 1898. The net capitalization is $13,000,007,012, an increase of 39.8 per cent over the figures of 1898. The gross earnings for 1908 of $2,448,835,000 were nearly double those of 1898. Ten years ago, the total number of passengers carried one mile was about 13.3 billions. In ten years' time this has increased over 120 per cent, reaching a total of 29.5 billions. A marked increase has taken place in freight traffic; for whereas the number of tons of freight carried one mile in 1898 was over 114 billions, last year it was over 122 billions. The passenger revenue per passenger mile, which in 1888 was 2.49 cents, in 1898 had decreased to 1.973 cents and in 1908 to 1.933 cents. In the decade from 1888 to 1898 there was a decrease in freight revenue from 1.0 cent per mile to 0.753 cent, at which latter figure it also stood in 1908.

Very significant of the growth of our railroads is the great increase in the number and weight of locomotives and cars. Ten years ago, the total number of locomotives was 36,234. During the last decade there has been an increase of 57.7 per cent to a total of 57,156 locomotives. Even more remarkable has been the increase of 115.3 per cent in the total weight of the locomotives. The number of passenger cars has increased from 33,595 to 44,623. The number of freight cars has risen from 1,248,826 to 2,130,110, an increase of over 70 per cent, but their capacity has increased over 120 per cent, from over 32,000,000 tons to over 71,000,000 tons. In 1898 the total number of employees was 874,558. Last year the total was 1,451,000, an increase in the ten years of over 67 per cent. During the year there was paid out in compensation to employees over $1,000,000,000, which is an increase of 110 per cent over the amount so paid out in 1898.

Figures such as these tell most eloquently the story of the phenomenal development of the country during the past decade. That the prosperity of the railroads is intimately associated with that of the whole country is proved by the fact that in the twelve months that followed the panic, the railways suffered a loss of over $330,000,000 in gross earnings.

COMPARATIVE TESTS OF THE SCOUT CRUISERS.

We have delayed making reference to the endurance tests of the scout cruisers "Chester," "Salem," and "Birmingham," in the hope that the official figures would be made public. Recent developments, however, make it unlikely that these results will be available for some time to come. The unofficial reports of the trials show that the comparative efficiency of the turbine and reciprocating engine is about what would be expected. The "Birmingham" with her reciprocating engines showed superior coal economy at the lower speeds. At the higher speeds the "Chester," equipped with Parsons turbines, gave the best results. Altogether, the honors of the trials lie with the "Chester," the "Salem" with her Curtis turbines proving to be, for reasons which did not develop until after the trial, a great disappointment. In the 24-hour sea speed test at full power, the "Chester" steamed 601.92 nautical miles at an average of 25.08 knots, while the "Salem" covered 588.96 knots at an average speed of 24.54 knots. The coal consumption of the "Chester" was 415 tons and of the "Salem" 420 tons. The "Birmingham" broke down under the severe strain, and her failure illustrates once more the unreliability of the reciprocating naval engine when driven continually under maximum power at the highest speed. It is mainly the mechanical simplicity of the turbine, and its well-proved reliability when pushed to the limit of its power, that have made this type of engine so popular with naval men.

Some months prior to these tests, the government carried out another series of tests under similar conditions, in which account was taken, not of the fuel but of the water consumption. Water consumption tests are the true criterion of an engine's economy, since they eliminate the question of boiler room efficiency, which may easily vary from 10 or 15 to 20 per cent because of the more intelligent firing on one ship than on the other. In these water tests at all speeds from ten knots to twenty-five, the two types of turbine, Parsons and Curtis, are reported to have shown about the same efficiency. On the recent endurance tests, however, the "Salem" exhibited at the lower speeds a far higher coal consumption, and a greater consumption, as stated above, at the highest speeds, though here the difference was much less. In explanation of her comparative failure, it is stated by the engineers of the "Salem" that the method of measuring coal by painting white stripes around the bunker walls, and estimating the amount of coal consumed by the height of the coal in the bunkers with reference to these stripes, is a very rough-and-ready method, and may give inaccurate results; the amount of coal, as thus measured, depending upon the solidity or otherwise with which it is packed at the time it is taken aboard. Although this does not by any means prove that the "Chester" was favored, it certainly vitiates the value of the results. It is also urged that the skill of the firemen might easily make a big difference in the coal consumption, favoring one vessel or the other, as the case might be. There is another explanation of the high coal consumption of the "Salem," which appears to us to be of much more weight. On the high-speed, all-day run it was found that the starboard turbine was running about fifteen revolutions slower than the port turbine; and the conviction of the engineers of the "Salem" that something must be wrong was verified when the casing was opened up and it was found that a bolt, which had somehow found its way among the blading, had badly disarranged the latter.

In view of these facts, we think that, when the injury to the "Salem's" engines has been repaired, these competitive trials should be run over again, but this time on a more thorough and scientific basis. The boiler and engine-room staff of every ship should be thoroughly trained, until it is perfectly familiar with the plant. The coal should be carefully weighed as it goes into the bunkers; care should be taken that it is similarly stowed in each ship; and both the fuel and the water consumption should be recorded. We are well aware that to carry out another series of trials along these lines would be costly; but in view of the enormous importance of the issues at stake, the money would be spent to good advantage. In spite of the good showing of the reciprocating engine at cruising speeds, it is certain that our future warships must be engined with the turbine. Hence the importance of making a wise choice between the Parsons and the Curtis type. Standardization is of prime importance in naval construction, and there should be but one type of turbine in all the ships of the future. The Parsons turbine may well stand upon its splendid record—a record which has been enhanced by the excellent results achieved by the "Chester" in the recent trials. Its younger rival, the Curtis turbine, however, has advantages of a military character, which commend it strongly to naval men. Moreover, in the latest turbines of this type tested in Germany, water consumption economy has been obtained which exceeds anything yet achieved by any marine turbine. For these reasons we consider that it is incumbent upon the Navy Department to use the opportunity presented by the scout cruisers for another and more satisfactory series of tests.

RETURN OF THE WRIGHT BROTHERS.

The sudden rise of the Wright brothers from the obscurity of the struggling inventor to international fame and no small measure of wealth has in it a strong dash of the romantic. The exploits of these two Americans during the past eight months have placed our country far in the van of other nations in the art of flight with heavier-than-air machines. Starting with the first public exhibitions in France and America, which were made simultaneously by Wilbur and Orville Wright, respectively, last September, the career of the former of the two brothers especially has been practically a continuous ovation. First at Le Mans, where on December 31st he made an unparalleled flight of nearly 100 miles in 2 hours and 20 minutes; later at Pau and Rome, where he taught several pupils how to operate the aeroplane in a dozen 15-minute lessons each, Wilbur Wright has been lauded in the highest terms, and has been the recipient of distinguished attentions from the most prominent rulers of European countries. Orville Wright, since his accident at Fort Myer, has not made any flights; but he is, we understand, to resume the carrying out of the very difficult government contract next month. This involves a 10-mile cross-country flight across a deep valley, which is something the like of which has never been accomplished even by Wilbur Wright during all the 3,000 miles he has flown abroad, although he has at times risen more than 350 feet in height tests over smooth ground. In cross-country flying, however, both Farman and Bleriot so far hold the records.

The idea of selling aeroplanes to governments, which these two inventors had in mind when they went abroad, seems to have succeeded almost beyond expectations. Italy, Germany, Russia, and England have either purchased or negotiated for aeroplanes, while in France the selling of the patent rights to a syndicate has made possible the rapid introduction of the machine.

After completing the contract with our own government, which will be done next month at Fort Myer, the inventors intend to make further experiments looking toward the perfecting of an automatically stable aeroplane.

Members of the Signal Corps at Fort Myer, Va., have been making experiments with wireless telephony. They have succeeeded so far in communicating over a distance of five miles. The government has appropriated $30,000 for experimental work of this sort.