The PANAMA CANAL a SOUND BUSINESS PROPOSITION

PROFESSOR EMORY R. JOHNSON OF THE FIRST CANAL COMMISSION ESTIMATES THAT THE FIRST TEN YEARS WILL SHOW A PROFIT OF $150,000,000.

THE MOST RECENT ESTIMATE OF THE CANAL'S COST IS PLACED AT $300,000,000.

CONSIDERED merely as an investment the Panama canal gives every promise of being an exceptionally profitable business enterprise. The strategic value of this doorway between the two oceans, both in peace and war, is of course generally accepted.

With the United States controlling the canal zone Uncle Sam will have his finger eventually on the greatest artery of trade in the world, and it is generally believed that almost any expenditure would be justified for this reason alone.

As to the actual return upon the hundreds of millions of dollars which are being poured into the canal zone, many have serious misgivings. The government experts who have made a special study of the situation believe that the canal will pay handsomely from the first and that the profit will increase in years to come. Such estimates may be made with reasonable accuracy. The experience of the Suez canal is of great assistance in such estimates, while the government reports on trade among all the countries affected by the canal supply a definite basis for calculation.

IT is conservatively estimated that the canal will yield an income of $100,000,000 during the first 10 years of its operation. With the impetus which the canal will doubtless give to trade in this period alone it is believed that the income may even be at the rate of $15,000,000 a year or more. The cost of building the canal has been variously estimated; the most recent figure mentioned authoritatively has been a maximum of $300,000,000. Speaking in round numbers it seems reasonable to calculate a return of 3 per cent upon this enormous expenditure in the first 10 years of its operation alone. In years to come the profit may reasonably be estimated at considerably in excess of this figure.

The data upon which these estimates are based have been collected by Prof. Emory R. Johnson of the first canal commission, who has made a special study of the probable income of the canal. His estimates are doubtless the most reliable obtainable. The toll for ships passing through the canal has not yet been definitely fixed, but it is probable that it will be regulated at $1 per vessel ton net. This figure may vary slightly, but it is safe to assume for a general calculation. It is also assumed for the purpose of such an estimate that the first ship will pass from sea to sea through the canal on January 1, 1915.

According to Professor Johnson's estimates there will be by the end of 1914 some 6,998,773 tons of traffic which will use the canal passing in both directions. The data upon which this estimate is made will be reviewed later. Now counting the increase in traffic at 62½ per cent for the next 10 years, which is considered reasonable, there will be by 1924 some 11,372,941 tons.

Taking the gradual increase from year to year between 1915 and 1924, it will be found that between 100,000,000 and 150,000,000 tons of traffic will clear the canal. This estimate is based upon the increase in the trade which would undoubtedly have used the canal in the last 20 years had it been available.

A fairly accurate estimate may be made in this way of the number of ships and the amount of tonnage which will pass through as soon as it is thrown open. The exact figures depend of course upon how rapidly our trade develops in the expanding markets of the western hemisphere and how long it will take to readjust the trade to fit new conditions which the canal will establish.

THE fixing of the toll rate is one of the most serious problems before the canal commission. If the rate be too high it will be difficult to deflect trade from its present courses, while if it be too low the income on this enormous investment will of course suffer. It will come as a surprise to most laymen in the matter to learn that the toll for the Suez canal is obviously very conservative.

In fixing the rate of toll at Panama elaborate calculations have been made as to the exact saving in time and expense to the various trade routes by using the canal. It is not believed that the rate of $1 a ton will be excessive for the ships of any of the regular routes. By passing through the canal on the way from Europe to Chile, for instance, a vessel would save from 10 to 11 days. The cost of operating a ship at sea for this additional time, it is estimated, would about balance the price paid for permission to pass through the canal.

THE comparative cost of the old route and the new has been estimated in the case of a modern freight steamer of 2,500 tons register, which is taken as a unit of measure. The cost of operation a day is placed at $175, which includes the wages of the crew, the cost of coal and provisions, the interest on the capital invested, the insurance and the general wear and tear. A saving of $175 a day for 15 days would amount to $2,625. The cost of clearing the canal would be at the $1 a ton rate $2,500. The rate, it will be seen, would not be excessive. In case a ship carried a perishable cargo the saving of time would, of course, be invaluable. It is believed that at this rate the saving by passing through the canal will offer sufficient inducement to deflect the present enormous traffic to the new route. The illustration cited is an extreme one. In the case of a vessel sailing between New York and San Francisco, for example, the economy of the canal route would be irresistible.

The isthmian canal commission has made an exhaustive study of the trade routes affected by the canal, which forms the basis for these calculations. The commission points out that the effect of the canal on the present route will be a double one. The canal will facilitate the movement of commerce around the world. It will cause vessels sailing from Europe, as well as from the eastern part of the United States, to carry on trade with the orient. An immense amount of commerce which now plies between Europe or the eastern coast of North America and South America may be expected in the future, after passing through the Panama canal, to continue on and make the circuit of the globe by way of the Suez canal. There is always more commercial advantage to the merchant in following this route than to return over the first line of traffic. The Panama canal will thus start in motion an enormous fleet of merchant vessels constantly around the world.

The canal is expected to attract and deflect four great lines of trade, whose volume may be calculated with reasonable accuracy. The traffic between Europe and the Pacific coasts of North and South America may reasonably be expected to use the canal. The great fleet which plies between Europe and the orient will find for the most part a shorter and more direct route by way of Panama. The third great line of trade is that between Atlantic and Pacific America. At present this is largely confined to the trade between the east and west coasts of the United States, but with the impetus which the canal will give it is hoped that the trade with South America on both seaboards will be brought into more continuous communication with both shores of the North American continent. There is also the trade between Atlantic America and the orient, which is even now rapidly increasing.

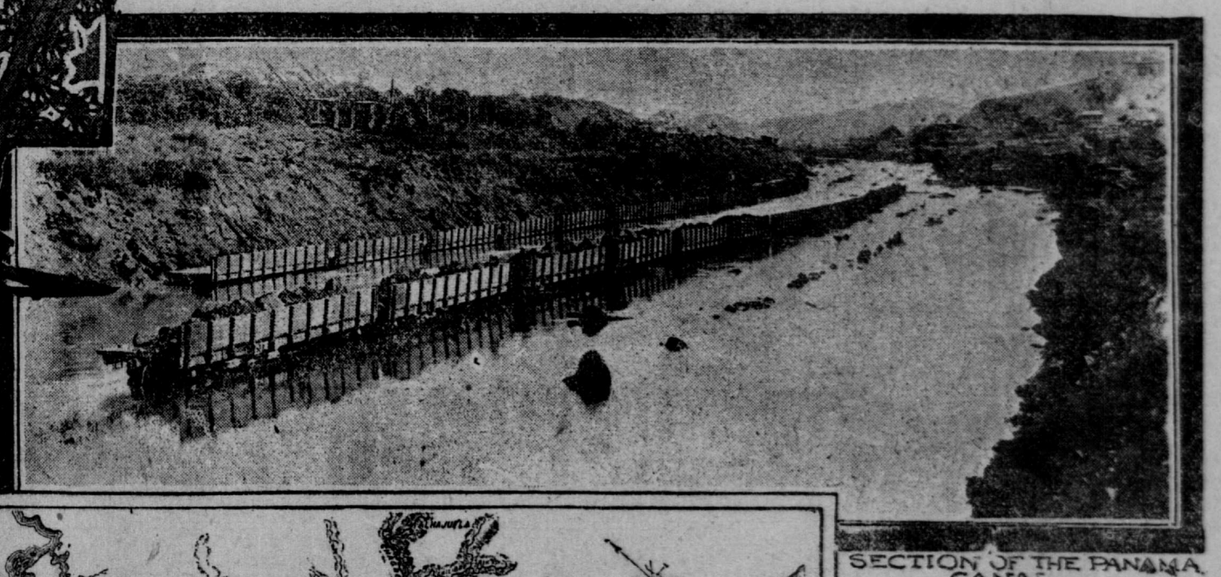
SUEZ CANAL AT PORT SAID

RICH DIGGINGS FOR U.S

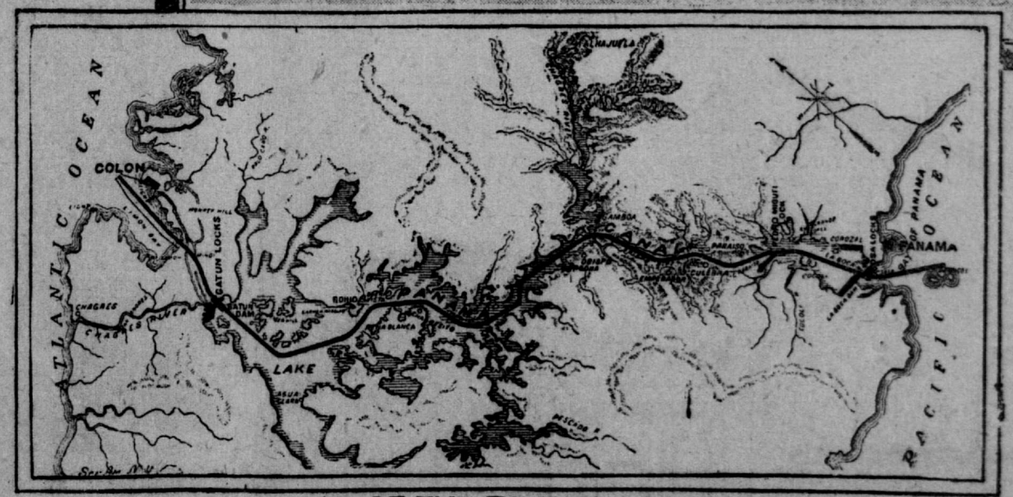
canal was first contemplated, three of the trade routes just cited, the Europe and orient trade excepted, might have contributed 3,843,577 tons net register of traffic to the canal had it been ready for use at that date.

This estimate, however, does not include any vessel tonnage for the commerce crossing the isthmus of Panama, which was 336,998, thus raising the total to 4,185,575 tons. Meanwhile the entrances and clearances for the commerce of the eastern seaboard of the Pacific east of Australia.

The attraction of the new route for all this commerce is certain to prove irresistible. It is not generally realized, for instance, that New Zealand will be 1,318 miles nearer Liverpool by the Panama canal than by the Suez, and 2,222 miles nearer than by way of Good Hope. The distances from Liverpool to the most important groups of the South Pacific islands north of New Zealand will be from 500 to 5,500 miles less by way of Panama than by way of



SECTION OF THE PANAMA CANAL



MAP OF THE PANAMA LOCK CANAL
(COURTESY OF SCIENTIFIC AMERICA)

IN estimating the income of the canal the records kept by the Panama company have been used as a basis for calculation. It would seem safe to assume that when a line of trade chooses the Panama route, even when it must break cargo to cross the isthmus, it may be counted upon as a customer when it can make the all water route from sea to sea. These records show that in 1899, when the United States with Pacific America and with Australia, Oceania, the Philippines, Japan, China and Siberia, together with the vessel movements between the western coasts of the American continents and the North Atlantic and European ports, were found to amount to 4,074,858 vessel tons net register, including the commerce crossing the isthmus of Panama. This tonnage includes, it will be seen, only traffic originating or terminating in America.

The enormous trade between Europe and the orient which now goes the other way around the world is, besides, certain to be deflected in large measure to the new route. It is merely a question of geography. The Panama canal offers the shortest route between the two points. Most of the commerce of Europe and New Zealand will pass this way, as well as that between Europe and the other islands of

canal, which amount could be added to the tonnage of the canal traffic originating and terminating in America.

A great part of Europe's trade with Australia and Japan will find the Panama route advantageous and will ultimately be deflected from the present route. This traffic is enormous and will yield a considerable income to the canal in years to come. The distances between Great Britain and Sydney and Yokohama by the Suez and by the Panama routes are about the same, but the Panama route will have the advantage that vessels in going by America in either direction on their way between Europe and Japan or Australia will pass many ports from which there is heavy export tonnage, thus making the new route more profitable than the old.

IN estimating the amount of traffic which will be drawn to the new route a very conservative proportion has been counted on. It has been asumed that 10 per cent of the vessel tonnage of the Australian trade with the ports of northwestern Europe may be counted on, and at least 5 per cent of the tonnage between these ports and Japan will be drawn the same way. Even this trifling percentage would total 316,223 tons. In all probability it would be several times this figure. To total this estimate, therefore, we have 4,047,852 tons, representing the traffic beginning and terminating in America, plus the 500,000 tons of European trade, plus 316,223 tons, or in all 4,981,075 tons—in round numbers 5,000,000 tons—which would have passed through the Panama canal in 1899. It is obvious that this estimate is, if anything, less than may reasonably be expected.

This tonnage is, of course, based upon figures 10 years old, and is by no means a fair estimate of the traffic between these same ports today. The statistics show that the tonnage of vessels trafficking between the two coasts of the United States and between the eastern United States and the orient and between Europe and the Pacific is increasing rapidly from year to year. Between 1889 and 1899 the gain in tonnage available for the canal was 25.01 per cent, while from 1899 to the present time the gain has been even more remarkable. The commerce between Chile and Europe increased from 575,890 tons in 1888 to 914,091 tons in 1898, or a gain of 58.7 per cent, and this remarkable rise has certainly not disappeared since that date.

THE estimate of 5,000,000 tons of traffic available in 1899 is clearly much too low today. In every branch of traffic the amount of tonnage that could advantageously use the canal has increased. With this rate of increase as a guide it will be found that the available canal traffic in 1909 will be 6,257,249 tons. By the close of 1914, or about the time of the proposed opening of the canal the available tonnage, estimated at the present rate of increase, will be 7,000,000. By the year 1924, at the same rate of increase, the estimates show a tonnage of 11,372,941.

It will be seen that the estimate of $100,000,000 income for the first 10 years of the canal is practically assured. If any mistake has been made in this estimate the failure has been not to make the figures high enough. The calculations have not allowed for the immense stimulus which the opening of the canal is certain to give to trade on both seaboards of the American continent.

At present it is a matter of regret, almost of shame, that by far the greatest part of the trade of South America goes directly to Europe. It is only a short time since it has been possible to sail from New York to South American ports without first going to Europe. With the opening of the Panama canal the traffic between the east coast of the United States and the western coast of South America, and again to mention only one route, is likely to be awakened to the great interest of both seaboards and the profit of the canal. The trade between the two seaboards of the United States again is likely to grow with leaps and bounds. An immense amount of the traffic which now crosses the continent by rail will be deflected in large measure by way of the canal as soon as it is possible to ship cargoes in unbroken packages. It is this traffic which is expected to show the most rapid rate of increase, although the income has not received proper consideration in the estimate.

The figures thus arrived at have to do with the gross income from the canal. Until the work of construction has been further advanced and certain engineering problems have been worked out, especially in connection with the building of the great locks, it is difficult to estimate with any accuracy the possible cost of maintenance. During the first decade of the canal operation, at least, it is not anticipated that any considerable work of repairing or new construction will have to be met. In future years the greatly increased income of the canal will readily offset any additional expense. Since a conservative estimate of the income of the waterway may be placed at $150,000,000 for 10 years, or at the rate of 4½ per cent, the estimate of a return of 3 per cent and over certainly appears conservative.