

Bowling Green Business University

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KENTUCKY.

The students who went to positions in July and August will earn \$60,000 in their first year after leaving school, and this is almost \$50,000 more than they ever made in any other one year. In other words, by taking a business course they multiplied their earning-power by six. A course in Bookkeeping, Shorthand, Stenotypy, Telegraphy, Railroad Accounting, English, Penmanship or Typewriting can be completed in a few months.

Write the School for Its Catalogs, Bankers Books, Rate-Sheets, Photographs and Other Information.

The Wonderful Story of the Panama Canal.

For more than 400 years the vision of a canal across the Isthmus of Panama has fired the imagination of the world, says Frank Parker Shucksmith in the December number of Popular Mechanics magazine. The vision became a reality on October 10, 1913, when President Woodrow Wilson, in the White House at Washington, pressed a button which sent the electric current 2,000 miles to explode forty tons of dynamite which blew up the last barrier to a free waterway across the Isthmus.

"Gambon's busted!" exclaimed the president, as he pressed the telegraph key. The casualness of his remark was a tribute to the engineers of the United States army, to whom the digging of the canal has been simply "another job" in the routine of their regular work, and one that called for no special hands or special simplicity. The first vessel to pass through the Panama Canal, after the breaking of the Gamboa dike had let the water, was an ordinary rowboat, while a humble but useful tugboat was the first craft of any kind to make the passage through the great Gatun Locks.

While the work at Panama is still far from completed, yet the canal which the first Spanish explorers dreamed of is today an accomplished fact. For the first time since the mountains rose from the sea, there is a continuous water passage across the Isthmus. Ships as large as most of those of Alfred's day can already be floated from ocean to ocean.

On September 25, 1513, Vasco Nunez de Balboa climbed the peaks of the Continental Divide and discovered the Pacific ocean, which he named "The South Sea." From where Balboa stood his new ocean lay directly south, because of the S-shaped twist of the Isthmus, which bridges the Pacific entrance to the canal not only southward but eastward of the Atlantic terminal. When Balboa's report of the discovery reached Spain, it was accompanied by the recommendation that a canal be immediately dug across the Isthmus. What the explorer had in mind was a sea-level canal, for although Leonardo da Vinci, the great Italian painter-engineer, had recently invented the hydraulic lock now generally used for lifting vessels over obstructions, it had not become widely known. However, alluring as it seemed, the canal project was dismissed. According to some historians the selection was due mainly to the influence of the church. To the strange faith of that day it appeared clear that if God had intended the waters to flow across the Isthmus, He would have created a channel there.

The discovery of gold in California in 1848 was followed by a tremendous volume of traffic between the Atlantic and Pacific coasts and for fifteen years practically all of this traffic was by way of the Isthmus, over the Panama railroad, opened in 1855 by Americans under a concession from the republic of New Granada, now known as Columbia. The explorations and surveys for the railroad, a work that is said to have cost the life of a human for every tie and so a much more accurate knowledge of the topography and geology of the Isthmus than had previously been available. President Grant, in 1862, asked congress to take up the matter of a canal. The only action was a resolution providing for an expedition by officers of the navy and the creation of a commission, in 1868, to consider their reports. Then on May, 1876, the Republic of Columbia granted a concession for the construction of a canal from Colon to Panama, the terminals of the Panama railroad, to Lieut. Lucien Napoleon Bonaparte Wyse, an officer of the French army.

In 1894, a new French company was organized and work was re-

sumed. In 1899, the United States congress created the Isthmian Canal Commission, to examine all practicable routes and to report which was the most practicable and feasible for a canal "under the control, management and ownership of the United States." The commission reported two alternative plans, one for a canal at Panama and the other across Nicaragua. It estimated the cost of a Panama canal at \$156,378,258 and of the Nicaragua canal at \$200,540,000. But because the route from New York to San Francisco would be several hundred miles shorter by way of Nicaragua, and considering existing French concessions in Panama, the commission gave it its belief that the Nicaragua route was more desirable under the circumstances. The effect of this report was to induce the French Panama company to offer its concession to the United States for \$40,000,000, in January, 1902. The Isthmian Canal Commission advised the purchase and congress authorized the president to buy all the property of the Panama company, including a majority of the stock of the Panama Railroad company, and to obtain from Columbia perpetual control of a strip of land six miles wide, through which to build the canal. Columbia refused to grant this control, but in November, 1903, ten months later, the state of Panama declared itself independent. Within a month a treaty had been negotiated with the new republic by which the United States was given control of a strip of land ten miles wide for the purpose of a canal. The French company's property was bought and, in February, 1904, a commission for the construction of a canal was appointed. In May of that year, work was begun where the French company had abandoned it. In June, 1905, a board of consulting engineers was appointed to consider whether the canal should be at sea level or with elevating locks.

The greatest and most difficult problem which the American builders of the canal had to solve was not one of engineering, but of health. Under the French company's operations more than 60 per cent of the workmen were continually incapacitated by disease. In one year the death rate among them reached 60 per cent. To Col. W. C. Gorgas, of the Army Medical Corps, was intrusted the sanitation of the Canal Zone. Recent medical research had proved that yellow fever and malaria alike were transmitted only by mosquitoes and Col. Gorgas organized a sanitary corps, the main object of which was to exterminate every mosquito and every fly on the Isthmus. As a result the Canal Zone death rate is lower than in most American cities.

Having made the Canal Zone a safe place in which to work, the commission went farther and made it a comfortable place in which to live. Quarters for the working force were constructed at a number of convenient points, and for them armed men, comfortable houses were provided, and the commission's commissary department arranged for regular shipments of food supplies, which were sold to the employees at cost. Nor was the social life of the workers overlooked. Club houses were built and furnished at the principal settlements along the route of the canal, mostly operated under the direction of the Y. M. C. A. and a little later, women's clubs were organized in the principal towns.

The canal itself, from deep water to deep water, is fifty miles long. Its general direction from the Atlantic entrance to the Pacific end is from northwest to southeast, the northern terminal being about twenty-two and one-half miles farther west than the southern entrance from the Pacific. The first seven miles of the canal, beginning at the Atlantic end, are at sea level. Five miles of channel, 500 feet wide, have been

dredged to a depth of forty-one feet and two miles of this sea-level section has been cut through low-lying land to the entrance to the Gatun Locks, where the ships are raised, in three steps, to a height of eighty-five feet above sea level, into the great body of fresh water called Gatun lake.

These Gatun Locks are not only the largest of their kind, but together comprise the largest monolithic concrete structure ever built, exceeding in volume the great Assuan Dam and bliking two-thirds as large as the Great Pyramid, which is still the world's largest masonry structure. These locks, like the ones at the Pacific end of the canal, are built in pairs, so that the danger from accident is halved and the efficiency doubled. Since 95 per cent of ocean-going ships are less than 600 feet long, and it would be a waste of water and of time to use the entire 1,000-foot lock for short vessels, each lock is provided with intermediate gates, so that any one of five different lengths of chamber may be used. In all there are forty-six lock gates at Panama. These are made of steel plates riveted to structural steel frames, and so strongly have they been constructed and so carefully braced that the largest of them, weighing 1,483,700 pounds, drops less than one-eighth of an inch at the extreme end, sixty-five feet from its pintle, or hinge. The total weight of the gates is 118,488,100 pounds, and their cost, including the cost of erection, was \$5,374,474, or more than 4 cents a pound.

Vessels will be lifted or lowered in the locks at the rate of three feet a minute, and the total time for passing the Gatun Locks will be about an hour and a half. Ships will not be allowed to pass through the locks under their own power, for fear of damaging the lock gates by collision.

In Gatun lake a ship may steam to Bas Obispo, where it enters the Culebra Cut. The channel through at full speed for twenty-four miles, the lake is not a straight line, but passes around and between many islands. It is marked by buoys which are to be lighted at night. In fact, the entire length of the canal will be so brilliantly lighted as to make the passage by night almost as safe as by day. The Culebra Cut, nine miles long, through the mountains, was the most difficult part of the canal construction.

At the southern end of the Culebra Cut is the Pedro Miguel Lock, with a lift of thirty feet four inches. A ship passing through this must proceed two miles farther to Miraflores, through another fresh-water lake, about two square miles in area, with a surface fifty-five feet above main sea level. At the lower end of this lake are the Miraflores Locks, similar in every respect to those at Gatun, except that they are of but two steps instead of three. Lipping down through these a distance of 54 feet 8 inches, the ship finds itself again in salt water and at the level of the Pacific ocean. Here a channel 500 feet wide and eight miles long leads to deep water and the open sea.

Croup and Cough Remedy.

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Legally Dead Men

An astonishing decision has been handed down in a New York court which will be generally discussed in legal circles.

Lieut. Charles Becker is in the condemned cell of the Tombs prison waiting final action on his appeal to the New York Supreme Court. He is under a sentence of death.

In the recent decision he has been legally declared dead, and his wife has been granted a license to marry without the necessity of securing a divorce.

In most all States imprisonment for life is a legal ground for divorce, but to marry without being legally separated seems a bit unconventional.

Had Mrs. Becker applied for divorce a decree would unquestionably have been granted. That she should desire to marry again under such unusual circumstances seems very strange indeed.

Becker may be electrocuted. His death sentence may be hanged to one of life imprisonment of he may be pardoned, which is highly improbable, but not impossible. In such an event he would be free to face his wife, living with another husband.

Of course, the decision has to be passed upon by a higher court, but it is not the only ruling of this kind. A decision coming from the appellate division of the supreme court usually holds, and if it does in this instance a new precedent will be established with some day in the future will unquestionably precipitate uncomfortable complications.

The interference of this decision is that a woman may marry without securing a divorce if her husband has been sentenced to life imprisonment, even if the sentence is later on held to be invalid.

This inference has been drawn in another New York case settled last week, in which the court directed the issuance of a marriage license to the wife of a man who had been sentenced to life imprisonment. The only difference is that in the last case all possibility of an appeal was eliminated while Becker still awaits the finding of the higher court.

It is difficult to resist the opinion that the New York courts have gone rather far in these decisions. To hold that a conviction, even while liable to reversal by the highest court, vacates the marriage without further action reduces the binding quality of marriage very seriously. It seems far more logical to think the courts should require the wife to apply for a divorce before he gets release.

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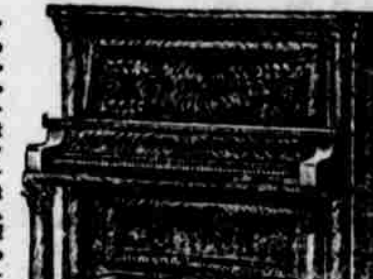
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