

August 4, 1927

IMPORTANCE OF THREE M'S ON TRAIL STRESSED

Money, Men and Machinery of Best Type are Important to Perform Such a Task as the Building of the Tamiami Trail Quickly, Quietly and With Quality

COLLIER COUNTY HAS BEEN FORTUNATE IN THIS RESPECT

Has Had Adequate Sums at Its Disposal, Men of Character and Best Equipment Available.

By D. Graham Copeland

When in October 1925, I was honored by being selected as Chief Engineer and entrusted with the responsibility for the construction of the Tamiami Trail in Collier County, my first thought was MONEY with which to carry on the work. At that time, all funds for the work were being supplied by Collier County, the largest tax payer in which is Mr. Barron Collier. The progress made until that time had been such as to cause serious and well founded doubt in the minds of many as to whether it would be possible to complete the Trail across the Everglades on account of the enormous expense involved. Collier County, the infant among the counties of Florida with a population at that time of only about eleven hundred, had an extremely small bonding power. In 1924, a bond issue of \$350,000 had been authorized for all purposes. With these funds and those obtained by regular taxation, it was contemplated not only running the county, but meeting indebtedness to Lee County due at the time of county partition, and more important continuing a new road construction program of about one hundred miles. The bond money had been practically all spent, regular taxation was wholly inadequate and the outlook for obtaining funds for continuing the Tamiami Trail was very gloomy.

Our first endeavor was to prove to Mr. Collier that the completion of the work was not only feasible and sound, but that it could be done at a cost which on a toll road basis, would be repaid within comparatively few years. The data to maintain this position was carefully collected and, after these had been studied by Mr. Collier, he stated without hesitation that the work should proceed and, that, if the county were unable to finance it, he would do so personally. The first essential, MONEY, was thus assured in ample quality.

Mr. Charles G. Washbon, supervising engineer
Mr. Otto Neal, outside superintendent
Mr. George D. Hilding, Correlated records and
co-ordinated the multiplicity
of details

Importance of Three M's (Cont.)

Mr. Fred Didden, foreman in charge of dredges,
field machines and equipment.
Mr. J. D. Darnell, in charge of grading.

Blasting is Difficult Problem

Probably the most difficult problem encountered in the entire undertaking was that of blasting. Totally unknown to geographers and, probably, to nine tenths of the citizens of Florida, that portion of the Everglades traversed by the Tamiami Trail is not one unlimited expanse of muck to great depths. Instead, at a depth varying in depth from only a few inches to six feet, lies a stratum of limestone conglomerate which, laid down aeons ago when this portion of Florida was at the bottom of the sea, has become so extremely hard as to approach the texture of granite in places and of flint in others. The overlying muck, the fertility of which will one day feed the East, is wholly impossible for road construction. It therefore became necessary to obtain some means of breaking through this rock stratum, to be utilized for the base of the road to be constructed, and to obtain from beneath it material for surface. Our successful solution of this problem can be attributed largely to the Ingersoll Rand Company and to The Hercules Powder Company.

Although the extremely varied textures of the rock were successfully drilled, little would be gained if the proper explosives were not available with which to shatter the rock in such a manner as to make it suitable for our purposes. More money can be wasted in a few minutes by the improper selection and use of dynamite than by many other errors in a month. To The Hercules Powder Company we turned for assistance in this direction and, as our rock problems varied almost continuously, that company has sent its engineers here every two months or so to keep in close touch with the work and to offer suggestions highly advantageous to us. There are only a few firms sufficiently far sighted to knowingly decrease their sales with the idea of helping their customers. The Hercules Powder Company is one of these few firms. We have used one solid carload of sixty per cent nitroglycerin dynamite monthly for the last three years and, but for the kindly suggestions and efficient cooperation of that company, we would unquestionably have used a much greater quantity with poorer results.

Importance of Three M's (Cont.)

Bay City Dredges Picked

The problem of blasting and drilling solved, the next question to be settled was the type dredge to be used. An inspection of the Tamiami Canal west of Miami will today reveal the rusting wrecks of a dozen different types of dredges with which the first contractors attempted that portion of the Tamiami Trail.. In old Lee county may be seen other wrecks which are monuments not to the failure of engineers not a decade ago to select the right equipment for the job, but to the absence from the market in those days of a dredge capable of doing the work. When we commenced operations, there were various machines on the job. No two were alike. After studying the possibilities of the types then in use in Collier county and elsewhere in the Everglades, we became convinced that, for our purposes, the most economical and efficient machine was a one yard dipper dredge manufactured by the Bay City Dredge Works of Bay City, Michigan. At that time, this type was not a particular favorite in Everglades dredging, but, after a statement by the firm in question, that so positive were they of the possibilities of their machines, they would send one or more here and operate them at their own expense to prove their value, we decided we had found what we were looking for. No other type of machine has been used in the Everglades portion of the Trail from that time and, today, we have nine Bay City machines working day and night. We express our unqualified approval of this type machine. While light enough to travel successfully through the bogs and muck of the Everglades, it is sufficiently sturdy and staunch to withstand the terrific punishment received in the rock formation. Although other types of machines are being used elsewhere in Tamiami Trail construction, we feel sure that no other type is as economical or as efficient. The unprecedented rate of progress we have been able to maintain -- no dredging contractor in Everglades work has even remotely approached the record established by us -- is due wholly to the machine. To Mr. W. S. Ramsay, president of the Bay City Dredge Works, we extend our congratulations on building this machine and to thank him for the splendid service which has characterized his firm's dealings.

Transportation is Important

Transportation on all jobs is an important item; on a project like this, it is all-important. At the beginning

Importance of Three M's (Cont.)

study them and did solve them although as he expressed it, "She's rockier than either hell or the Road to Dublin." "Caterpillar" tractors, Austin-Western giant scarifiers and fourteen foot blade graders, supplied by that firm, turned the trick. That the road is graded to such a fine finish as to permit travel over it at the rate of sixty miles per hour without the slightest discomfort, is a tribute to quality of grading equipment supplied by Messrs. McDonald and Burghman.

To back up the "Front" it is necessary to have a well balanced repair base behind the lines. Everglades is approximately 110 miles from Fort Myers and some 300 miles from Tampa. These are the nearest rail heads and all supplies must be shipped by water. Accordingly a most important role was played by the firms who supplied the necessary repair parts, hardware, steel beams, mill supplies, steel cable and accessories of every kind. These came to us chiefly through John A. Roebling Sons Company, Atlanta, Georgia, Knight and Wall Company, Tampa, Woodward Wight & Company of New Orleans. To each of these firms, we desire to express our appreciation for the services rendered and for the splendid quality of the materials supplied by them.

Mess is All Important

Lastly, we should not forget that as in 1812 when Napoleon said "An army marches on its belly," so in 1927, one of the most important features of any large construction work in an isolated community is the feeding of the personnel. Unless the crews are properly housed and fed with nutritious, well cooked food, discontent is certain to permeate the organization. Our Messing system has been most excellent and the food served in the messes had been purchased only from the most reliable firms. To Swift and Company from whom we purchased more supplies than any other firm, we extend our thanks for the excellent qualities of the meats and meat products which we consumed in apparently unlimited quantities.

Whatever success has attended our efforts has been due to our procuring sufficient money, excellent men and superb machinery. These have made it possible for us to complete our portion of the Tamiami Trail in record time. We are proud of the part we have played in this stupendous undertaking and believe it may all be summed up in the words QUICK, QUIET, QUALITY.