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## A PRIMITIVE ENGINEERING PROJECT

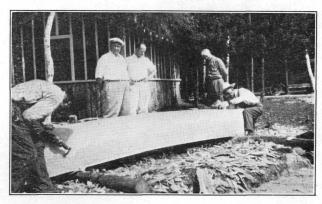
By Edward M. Schoenborn, Jr., '31

At sunset of a pleasant July day, the long awaited engineers sailed placidly up Grass Lake to land at length quite unceremoniously at the Lodge docks. Mr. Smith, owner of Fisherman's Paradise—a summer resort situated on a beautiful lake about two miles south of Bellaire, Michigan—together with numerous guests, ran eagerly and with not a little curiosity to meet them. After the usual formalities of greeting were over, the two aged Chippewa Indians, for such they were, began preparations for setting up camp.

Considering their age, John and Pete Wabasqua, eighty-seven and seventy-seven years old respectively, moved about with rare sprightliness. It was their first concern, therefore, before unloading their boats, to select a suitable plot of ground upon which to erect their crude shelters and upon which they might carry on most easily and effectively the joint labors of their strange mission. Almost instinctively they chose a plot of dry ground somewhat higher than that which surrounded it. They drove securely into the ground, at regular intervals of about seven feet, several sticks four feet long, placing them in rectangular array. Over these they placed the rough tarpaulins that had served as sails on their journey, fashioning them and pegging down the ends until they looked very much like soldiers' pup-tents. The two tents, one for each man, were arranged close together, the frontal flaps opening onto a common side. The space between them was several feet in width-room enough to admit of a small camp fire and ready access to the interiors of each. The Indians then gathered dry leaves, pine needles, and twigs with which to cover the floor of the tents, and added to these bits of rag to serve as bedding. Having moved to the tents all their belongings-dirty clothes, pots and kettles, carefully wrapped axes, knives and other implements, and a small amount of food for the larder—they found that they had yet room enough to lie down to rest at full length and quite comfortably. To be still further assured of a dry resting place, John proceeded to chop a narrow groove or trench about each tent in such a manner as to prevent its occupant from becoming drenched, while he slept, in the advent of a rain storm. He then gathered bits of loose wood with which to



FIRST OPERATIONS



ROUGH CUTTING THE OUTSIDE

start a fire and soon a little black pot was boiling over with water, cooking the few potatoes and the salt pork they had brought. The potatoes and pork being done at length, they used the same hot water to make tea. They ate with relish; and with appetites readily appeased by this simple fare, the two old creatures took to rest and were soon fast asleep long before darkness had fallen.

Not far from these tents, well shaded from the sun by fir and birch trees, lay a log. It was of white pine, sixteen feet long and about three feet in diameter—in all an excellent specimen of Michigan forestry. During the winter Mr. Smith had purchased this log from a woodcutter at East Jordan, had had it well sawed and smoothly trimmed; and while the snow and ice yet lay many feet deep, had brought it by sled to its present resting place at Fisherman's Paradise. It lay there, a wonderful tribute to nature, awaiting, in much the same manner as a block of granite does the sculptor, its artisans, who were soon to fashion it into a piece of handiwork rarely seen by men in this day and era.

Long before the guests were up the next morning, John and Pete were at work cutting a flat surface on the upper side of the log the whole length of it. This they did by sawing vertically in numerous places to the required depth-possibly six or seven inches—and chipping away the bark with their sharp broad-axes. Everyone marveled at their swing-long, powerful, telling strokes. But more astonished and awed were they at the accuracy with which the axe hit its mark. Not a blow fell amiss; work was too delicate for that. Someone remarked that John could behead a fly that had presumed a position too near the region of the falling blade. And he possibly could have done so had the fly remained long enough. Chips flew far and fast. One could smell the sweet odor of pine as the viscous sap oozed out of the bright, clean, yellow wood at every blow. In a day or two the surface, curving a bit low at the center and rising gently at the ends, was critically surveyed and inspected by the two Indians. No plane, no tape, not even a plumb line was used: their keen sight and the sensitive feel of their bony hands gave sufficient proof of its accurate contour.



WORK ON THE INSIDE Pete in Costume

Soon they began to hollow it out. This required greater skill and entailed, perhaps, greater labor than any other part of the log. They chopped out most of the interior with their axes; and, though the heart of the tree presented much difficulty because of its hardness and the numerous knots that are always to be found near the center, it was not many days until they were standing ankle deep in chips and shavings. Again noticeable was their accuracy and admirable, as well, their patience and steadfastness. They worked from early morning until sundown, more often beneath the intense rays of the sun, resting now and then to converse with the guests as they went to and from the lodge, or to eat a bite at noon in the haven of their "wigwams." The log soon became but a shell, the sides of which, being yet several inches thick, still bore evidence of its once having been a mighty giant of the forest.

Before shaping and smoothing the inside, the Indians, with the help of several of the daily spectators, turned over the log-bottom side up. Sharpening their tools to razor-like keenness, they began to hew away the bark and round up the outer sides. Work became even more delicate. One misguided blow or a too vigorous stroke might pierce this hull, and so easily bring to naught all the sweaty toil and painstaking effort of several weeks. The love of these Indians for their handiwork now began to manifest itself in their endeavors to shelter and protect it, as the true artist cherishes and guards his unfinished masterpiece. These two men are very old now and this was undoubtedly their last opportunity to create such a piece of work. They placed pieces of tarpaulin over those parts of the log on which they were not working, to keep off the rays of the sun and to shield it from rain and the night dew, this to prevent its warping and consequent cracking.

After they had removed all the bark and rounded and thinned the sides to the proper thickness, they commenced work at the extreme ends, shaping each to an edge about two inches thick. These they rounded out gently into arcs, curving

somewhat higher on the upper portion and sloping downward to the plane of the bottom. It was necessary then to smooth and level the surface all over. They used a plane on those parts that would admit of its use, but on the inside where the surface was curved they used a very peculiarly shaped knife. It was circular and very sharp, the handle being shaped to fit the thumb and palm of the hand. With this they could cut well into the corners and so round out the various points of transition from curved to level, and from sharpedged to flat surfaces. Its use required all the real skill of the workman, since the knife must be handled delicately and surely. These Indians possessed, besides their extraordinary skill and acuteness of perception, a wonderful sense of symmetry. Their curves were accurate and graceful, and it is pretty safe to say that they made no

At last, after a careful scrutiny, John and Pete declared their handiwork to be nearing completion. As a finishing touch, they sandpapered the entire surface until it was smooth and sleek, and then oiled it with a linseed-oil mixture several applications of which they rubbed in until the grain of the wood stood out prominently. Finally, they moved it out into the sun to dry, watching it constantly, fearing the development of cracks and other imperfections in the wood that might yet mar its fresh and natural beauty.

At sunset of a pleasant August day, John and Pete reluctantly broke camp. All their belongings they again packed into the boats, the tarpaulins again hoisted as sails. Bearing a magnificent American flag which the guests had given them in token of their generosity, and of the brief friendship that was truly American, John and Pete uttered, in their crude fashion, fond farewells; and with a soft evening breeze filling the sails they moved placidly up the lake amid the cheers and reassuring cries of all Fisherman's Paradise.

The three-hundred-year-old log is now a beautiful, shapely canoe, the pride of the lodge, and a lasting monument to the skill and handicraft of John and Pete Wabasqua.



THE FINISHED PRODUCT Left to Right: John Wabasqua; a guest; Pete Wabasqua