CHAPTER SEVEN

Altho the state capitol was the biggest construction project Butler Brothers ever undertook in Minnesota, there were at least two elsewhere which were larger and in some respects more interesting and more difficult to accomplish. As the titular and active head of Butler Brothers, Walter's ambition toward the accomplishment of bigger and bigger things had no boundaries. As a result in 1904, Butler Brothers was awarded the four million dollar contract for some work on the Grand Central Terminal in New York and for the electrification of the New York Central Railroad in New York City. But the biggest single project Butler Brothers ever executed was the ~~Hudson~~ Detroit River Tunnel connecting Detroit Michigan and Windsor, Canada. That contract called for a total of seven million, five hundred thousand dollars.

In addition to the building of the main electric power station for the New York district of the New York Central Railroad, where they changed from steam to electric locomotives for the runs thru the city to Grand Central Station, our contract called for the construction of seven other buildings besides the overall excavation for Grand Central Station at Forty Second street.

And just to keep our hands close to the Minnesota situation, during that same period, we built the Boothe cold storage plant, the Lindeke Building and the Hackett, Gates, Hurtty Building in St.Paul and the Soo Line freight houses in Minneapolis. With Bill, Cooley, and Walter tied up most of the time in New York, I was handling Butler Brothers operations in the Twin Cities. Those were exciting years for me. The Boothe plant and the Lindeke Building as construction projects were particularly interesting to me because of some novelties in building practice which were introduced. To my knowledge, the Boothe plant in St.Paul was the first concrete floor and concrete pier construction project in St.Paul, and we incorporated some of those principles into the building of the Lindeke structure. The Lindeke building was designed by C. A. P. Turner, a prominent architect at the turn of the century. The outstanding feature of those buildings was that they called for flat slab construction, eliminating the necessity for beams in the ceiling. There wasn't an engineer in the city of St.Paul , either in a private or official capacity, who had had any experience figuring the stresses and strains on a concrete slab, and for that reason it was a long time before the St.Paul building inspector would give us a permit to erect the building.

I don't know to this day how we ever talked him into issuing it at all. But, while the architect and the building inspector were arguing it out, whether a building permit would be issued or not, I set about to determine for myself whether such a design would meet the tests of good building practice. The building inspector held the position that the building would not stand up. We built a panel of floor according to the same architectural specifications that Turner had prescribed for the six story building loaded the panel with heavy pig iron, and piled the iron on the slab until the concrete gave way. Knowing the weight of the pig iron, we were able to calculate within a reasonable degree of accuracy, just how much stress and strain such a slab of concrete would withstand. Somehow or other, Turner was able to convince the building inspector that our plans were sound, and the permit was issued, but, not until we arranged to post a bond guaranteeing that the building would stand up. The Northern Pacific Railroad office building was across the street. As our project took shape and form, officials and engineers in the Northern Pacific building used to look out the windows, shake their heads, and wonder which day of the week our project would collapse.

One of the few in the Northern Pacific official family who had confidence in us, was James J. Hill, the old empire builder himself. Another was D. C. Sheppard, an old New York contractor, who had built the Burlington Railroad, and who was one of the largest stockholders in the Northern Pacific. Hill and Sheppard came over to the project one day and at the conclusion of my conversation with them they said:

"Emmett, if you say this building is going to stand up, we believe you."

The Lindeke building measured a hundred and sixty five feet by two hundred and thirty feet, and we put on a floor a week until the six story super structure was finished. We moved the Lindeke people into the new building just one hundred days from the first day that we dug the excavation. This was something of a record for its time.

In securing the contract for the Detroit River tunnel operation, we took into partnership Olaf Hoff, who was then assistant chief engineer of the New York Central. We had had considerable to do with Hoff in our work on the New York Central electrification and at the Grand Central Terminal.

In taking Hoff into the business with us, we formed the Butler Hoff Company, organized it as a subsidiary of Butler Brothers with Hoff owning twenty five percent of the subsidiary stock. Somehow or other and despite the fact that we had fired him several times, Everett Shahan was back in the pictureas chief engineer of the tunnel project. Out engineering plans called for construction of a socalled "dwarf" tunnel under the river which was intended to be a guide channel for the main fifty eight foot bore. It becaeme apparent almost at once the impossibility of driving the dwarf tunnell thru because of the tremendous top pressure of earth. After abandoning this initial plan, it was decided to drive the main tunnel by constructing what was called a cutting shield and then driving this cutting shield thru the earth to permit construction of the concrete inner lining of the tunnel itself. This socalled cutting shield was driven with hydraulic jacks. It was necessary to maintain an air pressure of fifteen pounds per square foot in the tunnel itself while the p
work was in progress. The air pressure tended to help equalize the pressure being exerted downward by the more than two hundred feet of river, rock and shale above us.

We supplemented this support by lining the roughed tunnel with twelve by twelve timbers, cut into an arch around the circumference of the tunnel. Working under this fifteen pounds of air pressure, the men mucked the dirt out, and as they progressed forward the shield was driven forward and concrete was deposited between the two shelves of timbers, the interlining for the concrete form and the outer lining to hold back the dirt. Great care had to be exercised to properly apply the air pressure against the shield so as to keep it from getting out of line. The shield, constructed of steel plates, formed one end of the compressed air chamber, and built into it was a system of air locks as a safety precaution.

Because of the constant peril to our crew from that dread tunnel disease, bends, the workmen had to be brought to the tunnel project thru another system of air locks in which the air pressure was gradually increased from approximately one pound per square foot at the surface of the project to fifteen pounds per square foot at the core of the tunnel operations. These necessary steps for the preservation of the men's health and their lives took about forty five minutes, both to get a man into the tunnel and out of it again.

We never kept a man in the tunnel for periods longer than two hours. Thus it took an hour and a half of pressure conversion time to enable a man to work two hours, and most of the crews worked two or three of these two hour shifts a day. Sand hogs, as these men were called, earned a dollar and twenty five cents an hour and were among the highest paid workmen in any phase of the building or construction industry at that time in the nation. They took off two hours for rest between tunnel descents and altho, that was nearly fifty five years ago, we paid them portal to portal pay for twelve hours a day. We had to keep almost as close a watch on the sandhog's personal life away from the tunnel as we did when they were on the job. Medical experts familiar with Bends disease, warned us constantly that drinking and tunnel work under high pressures were dangerous and could be fatal. Working in a tunnel under high pressures is an almost fantastic experience. It seemed that a man could deliver twice as much hard work under pressure as he could if he had been doing the same type of work under normal conditions on the surface. It almost seemed like the law of gravity was in partial suspension, because heavy tools, timbers and concrete felt and seemed lighter, and the men would pick up or lift these items with ease.

When the tunnel contract was completed we worked out a system of bonuses for the employees, and divided up a considerable sum of money. Everett Shahan, I recall, received four thousand dollars which he lost within a few weeks on his newest system to beat the horse races.

Toward the end of the Minnesota State Capitol construction, and while the big New York and Detroit projects were under way I was still in my early thirties but I had gained enough of the confidence of my older brothers to manage a half a dolzen other smaller projects in Minnesota, Iowa and North Dakota which would we then had under way. Some of these involved contracts with the government which was laced thru with just about as much red tape in 1900 as it was fifty years later. One series of contracts that we took involved the construction of a dozen postoffices in Iowa, Minnesota and North Dakota. It took me some years to discover that the most difficult contracts we had to execute were with the government. One of these called for the construction of a postoffice at Iowa City, Iowa. Government inspectors in Washington who had to pass on everything we did were hardest to please when it came to getting tin to be used in the buildings passed for use. Taylor's Old Style Tin, was a famous brand name in those days.

In presty much routine fashion we shipped the Washington inspectors samples of Taylor's products for approval and in the same routing the stuff would come back rejected. We would go thru the rigamarole of sending the same grade of tin under a different brand name back to the inspectors and after five or six such attempts we would finally get the original tin accepted. The same was true of the varnish that went into Federal buildings.

It was the same thing on similar jobs at Albert Lea, Minnesota and at Grand Forks, North Dakota. At Grand Forks we were beleaguered by no less than a ereies of three government inspectors none of whomm it seems to me how, knew their business. There was an error of some kind in the specifications which called for a big stone archway over the main entrance to the postoffice and it called for an inlaid keystone. When the keystone was set into place, the inspector meneged to find a small defect in the keystone which would not have been discernable when the brickwork was laid outside of it, but the inspector insisted that it had to come out, which would have necessitated tearing out the whole front of the building. As good luck would have it, a travelling government inspector came thru the next day and pulled us out of a hole by countermanding his subordinate.

An unreasonable inspector can be an never ending source of trouble to a contractor.

We were finishing up the work on the old St.Paul post office and Federal coursts building about 1903, when a treasury department inspector by the name of Jim Garrison, a West Point Military Academy graduate,was assigned to make the final inspection. After his introduction to me, his first remarks were:

"I need a drink bad."

I escorted him to the nearest saloon, and bought him a few drinks. The same thing happened the next morning, and the next, and thenext. By the end of the first week, he was putting the bite on me for a similar performance, morning and afternoon. Garrison was not only costing me money, but wasting my time along with it. So at the start of the second week, I bought a jug of whiskey, concealed it down in the sub basement of the building, and told Garrison where it was. One afternoon, about five oclock, Garrison staggered up to me, very drunk and in a beliggerent mood, and ordered us to take off several sheets of plaster which we had put on freshly that day.

"You can't be serious Mr.Garrison, because we will not take this plaster off," I told him.

"The hell you won't," Garrison said.

"Just what in hell are you after," I asked him.

He finally told me that he was a married man, had six children, didn't have enough money to get along on and that he needed five hundred dollars. I told him that Butler Brothers didn't have five hundred dollars to give away to a government inspector, and he muttered.

"You had better get it,"

A few days later we decided that it would be expedient, but it was only a matter of a few days that he was back for more money and the second time we turned him down. We told E. P. Bassford, resident architect for the treasury department, about the whole incident to keep our own skirts clean, and Bassford arranged for Garrison's transfer out of St.Paul to a project then under way at Beaumont, Texas. We heard of some of Garrison's other exploits as an inspector, years later. One of these involved a government construction project at Kansas City. Garrison had made some shoddy inspections on the project in exchange for "loans", but when the travelling inspector got to the project near its completion, the government ordered the contractor to raze the building and start again from scratch. Subsequently Carrison left the government service, and altho he was reported later to have amassed a fortune from the oil wells of Texas, Butler Brothers never got their five hundred dollars back.

During all of their lives Butler Brothers were never as occupied with projects of one kind or another as they were during the first decade of the twentieth century. Walter was the overseer of all the projects. John was in active charge of the one million, two hundred and fifty thousand dollar Endicott Office and Bank Building in Boston, Cooley was running the New York power house project, and Bill was masterminding the work at the Grand Central Station. The layers of strata rock underlying most of Manhattan made difficult the job of excavation. Called "niece" rock, the layers sloped down at an angle of about sixty degrees to the surface and Bill had to blast his way down about seventy five feet to set the footings. Bill conceived the idea of drilling holes about four inches in diameter, on the face of the shale in which was placed the dynamite. A chap by the name of Tom O'Rourk had charge of the blasting operation. Every blast that was set off endangered the lifes of pedestrians and those ever present members of the sidewalk superintendentss association.

One day Bill said to O'Rourk:

"My God, O'Rourk, you're going to kill a lot of people here. Isn't there some way we can protect them"?

"It's cheaper to pay for the bastards," O'Rourk retorted.

In our spare time, we put together the two hundred and fifty thousand dollar state capitol at Bismarck and turned it over to the state of North Dakota in 1904. Later that building burned. We put up the three story essex building in St.Paul for a hundred thousand dollars. The Duluth Harbor Breakwater ran to three hundred thousand dollars. Built under the supervision of army engineers, the job called for construction of a pier three thousand feet long at the entrance to the harbor. The piling on which the pier was constructed, had to be cut off twenty three feet below the water surface in order to provide a twenty three foot draft for the ore boats. Cooley who had charge of the work, said later, that it was the toughest job he ever directed in his life. We paid the then fabulous price of a dollar and a half an hour to divers for the underwater construction, but because Lake Superior is so cold, it became next to impossible to get men to do the work. It was I believe one of the few projects on which Butler Brothers lost money. Somehow or other we also found time to build the train sheds at the St.Paul Union Station, the Herzog Iron Works in Minneapolis, and to fulfill a one hundred and fifty thousand dollar contract for the Northwestern Railroad at Council Bluffs, Iow.

It was during the construction of the Union Depot train sheds that Butler Brothers had its first experience with labor trouble. First the steel erectors went on strike, and because our contract with the Union Station had a time penalty clause attached we had to train a crew of laborers and carpenters to do the job. No sooner had we finished the steel workthan the carpenters went on strike. Within a few weeks the strike spread and tied up nearly every major construction project in the city. Word spread thruout the country and in a matter of days, unemployed carpenters from the south, by the hundred, laid siege to the town. It was Butler Brothers first and last experience with strike breakers. That same year we had taken a contract for the eleven story Boothe Cold Storage plant late in September and we had the building under a roof by New Year's day, working twenty four hours a day. In those three months I earned Butler Brothers a net profit of twelve thousand dollars. The Boothe plant was barely finished when the Boothe Company became a defendant in a law suit brought by a construction firm which claimed their bid on the project was lower than Butler Brothers. The fact alleged was true, and the Boothe Company's defense against the action was that they preferred Butler Brothers because of our reliability in preference to all other bidders, and they got on the witness stand and said so.

And their defense stood up. In September 1906, I started the construction of the three hundred thirty thousand dollar Lindeke Warner Building in St.Paul, and completed the job a year later. At the same time I was directing operations at the new four story National Candy Company building , cost only forty two thousand dollars, and the six story Patterson building which cost sixty thousand dollars. Brother Bill built the Minnesota Club after he finished the Detroit River tunnel project and also the five hundred thousand dollar Hill Reference Library. During his work on the Reference Library, Bill and Jim Hill became fast friends. After Bill finished, the library project he decided to give up the construction business and go into farming.

(End Roll One)

Thru his work on the reference library , Bill and the old empire builder had developed a mutual respect for each other and become good friends. During the installation of the heating and mechanical equipment at the reference library Mr. Hill had become impatient with Max Toltz of the Toltz, King and Day Company, subcontractors on the job. Toltz had done work for Mr. Hill for many years and been in charge of many of many of the engineering projects connected with construction of the Northern Pacific. Of German descent, Mr. Toltz wore glasses with a black cord attached and had the erect bearing of a Prussian military man. After witnessing delay after delay in completion of the heating and mechanical installations Hill called Mr. Toltz to his office one morning. The two men got into a heated argument and Hill fired him. Mr. Hill told his secretary Martin Brown to get in touch with Bill Butler. Bill went down to Hill's office and was standing in the waiting room when Mr. Hill observed him. When Hill saw Bill he said;

"Sit down, man. What the hell are you standing there for"?

When Mr. Hill told Bill that he wanted him to take charge of the installation of the mechanical equipment, Bill explained that he didn't know anything about that phase of the work.

Hill said; "It's your job. Get it done."

What Mr. Hill probably never knew was that two hours later Bill met Holtz and hired him to finish the contract.

Bill's return to our old homestead at Waterford was far more auspicious than the days we simply walked off the farm to make our ways in the world. For one thing Bill had plenty of money, and what was more important the financial backing of Butler Brothers. My sister Belle and her husband Mr. Pennington were still living on the place altho title to the farm was still held in the name of Butler Brothers. Bill's idea was to get sister Belle off the hard work of the farm and into the city where she could enjoy some liesure. When he got there, he told Belle and Mr. Pennington to figure out the value of their livestock, machinery, and the rest of their property, and he gave them a check for thirty thousand dollars drawn on Butler Brothers account and helped move them to St.Paul. Then Bill set about the business of becoming a gentleman farmer. He put the buildings in good shape, installed a manager and stocked the farm with blooded livestock. One of his prized possessions was a four thousand dollar blooded bull which the old empire builder presented to him as a gesture of his esteem.

Bill soon found that he lacked the temperament for successful farming and in a short time he left, never to return. The experiment cost Butler Brothers fifty thousand dollars.

End Chapter Seven.