

*St. Lawrence Seaway Authority Act*

construction price index, which I have mentioned, refers to that, it does not deal specifically with another item which is of extreme importance here, namely the purchase, fabrication and erection of steel which was substantially higher, as the table which I have before me would indicate. In fact, in 1949 the estimated unit price for truss spans of steel, viaducts erected, was 18 cents a pound; as represented by the cost index 100, in 1949 it rose to the index of 158 and the price was .285 per pound in 1958.

So I think it can be said in fairness that roughly speaking, in order to make a fair comparison between the estimates of December, 1950 to which I referred earlier, and those of December, 1957 the 1950 prices should be increased by at least 35 per cent. Accordingly the navigation estimate of \$260 million which was made should be increased to about \$350 million and the \$402 million power estimate to approximately \$543 million; provided, of course, that no substantial changes have been made in either the navigation or power works contemplated in 1950. I add this final word, that these figures do not include interest during construction.

I come now to Welland. The cost estimate provided by Mr. Lindsay for the Welland development was \$1,302,000 and the amount which I believe the minister mentioned in his statement, to be found in yesterday's *Hansard*, was—

**Mr. Hees:** \$25,600,000.

**Mr. Chevrier:** —\$23 million roughly speaking. Here I should like to say that this was an estimate which obviously was substantially in error. It was an estimate which was not made by the then minister of transport, who announced it in the house, but was made by the engineer who prepared it, and I tabled it. The authority engineers did not discover the error until 1956 when they came to give out contracts and prepare plans and specifications for the work on the Welland canal. However, if one examines the estimate referred to in the brochure prepared by the Department of Transport and the actual work done there is a substantial difference, because the width of the channel was extended from 200 feet to 300 feet and the depth was lowered several feet more than was required.

I am told by the engineers that a depth of 27 feet means an additional two feet for safety, but that when one encounters rock one must go down three feet more in the rock. I am informed that in a stretch of the Welland canal a substantial amount of rock was discovered, being about 7 miles in extent; and as the house knows, the cost for dredging rock is substantially higher than for

dredging ordinary earth. The cost of dredging rock, I am informed, to a four foot depth is \$17 per cubic yard, to a one foot depth \$24 per cubic yard and to a depth of six inches \$30 per cubic yard while the cost is but \$2 per cubic yard for common earth dredging.

Why was it decided to go to this depth in rock? The engineers of the St. Lawrence seaway authority, in consultation with the United States corps of engineers, came to the conclusion that it would not be safe for a ship having a beam of 72 feet to be allowed to travel in a channel 200 feet wide and navigate over rock unless the depth was at least five feet lower than the 27 feet. I was not there when the work was completed. I was there when the majority of the contracts were let but, as the house knows, I left in April of 1957. But it is common knowledge, to those who are ship engineers I am told that because of safety one has to go down to this extra depth when rock is encountered. In that stretch alone an amount of almost \$12 million is involved to deal with the rock.

So far as the difference between the \$12 million and the amount the minister gave is concerned, I can only say there was an error in the first estimate. I accepted the estimate as it was given to me and gave it to the house. I had no way of checking it. I was not expected to go and make a *de visu* inspection of the canal. That was the responsibility of others who had been working on the Welland canal for years, and certainly the responsibility of those who had to do with the granting and awarding of the contracts.

**Mr. Walker:** May I ask a question. Would it be true, then, that the estimate received from the engineers was made without first making test borings? If so, it is very similar to the experience with the printing bureau.

**Mr. Chevrier:** I am unable to say whether the engineer who made this estimate actually made test borings, because I have never discussed that with him. I do not believe I have seen him since the day I tabled it in the house. I have some reservations as to that; I may have seen him once or twice, but certainly not to discuss this matter.

To come back to the question, I presume the responsibility for test borings lay with the engineers of the Welland canal. It may well have been the responsibility of those who prepared the cost estimates in the 1932 and 1941 agreements. I do not know. I was not there. But the error was certainly discovered when our engineers prepared the plans and specifications for the Welland canal.

My hon. friend asks whether this does not compare with the investigation of the printing